

JONES & BEACH ENGINEERS INC.

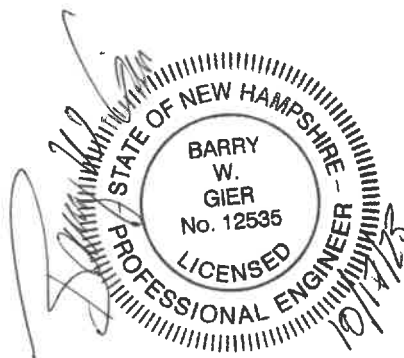
DRAINAGE ANALYSIS EROSION AND SEDIMENT CONTROL PLAN

**Southern New Hampshire Industrial Park
Multi-family Residential Development**

**Map 14, Block 1, Lot 2
Coleman Place
Newton, NH 03858**

Prepared for:

**125 Development NH Corp.
PO Box 532
Plaistow, NH 03865**



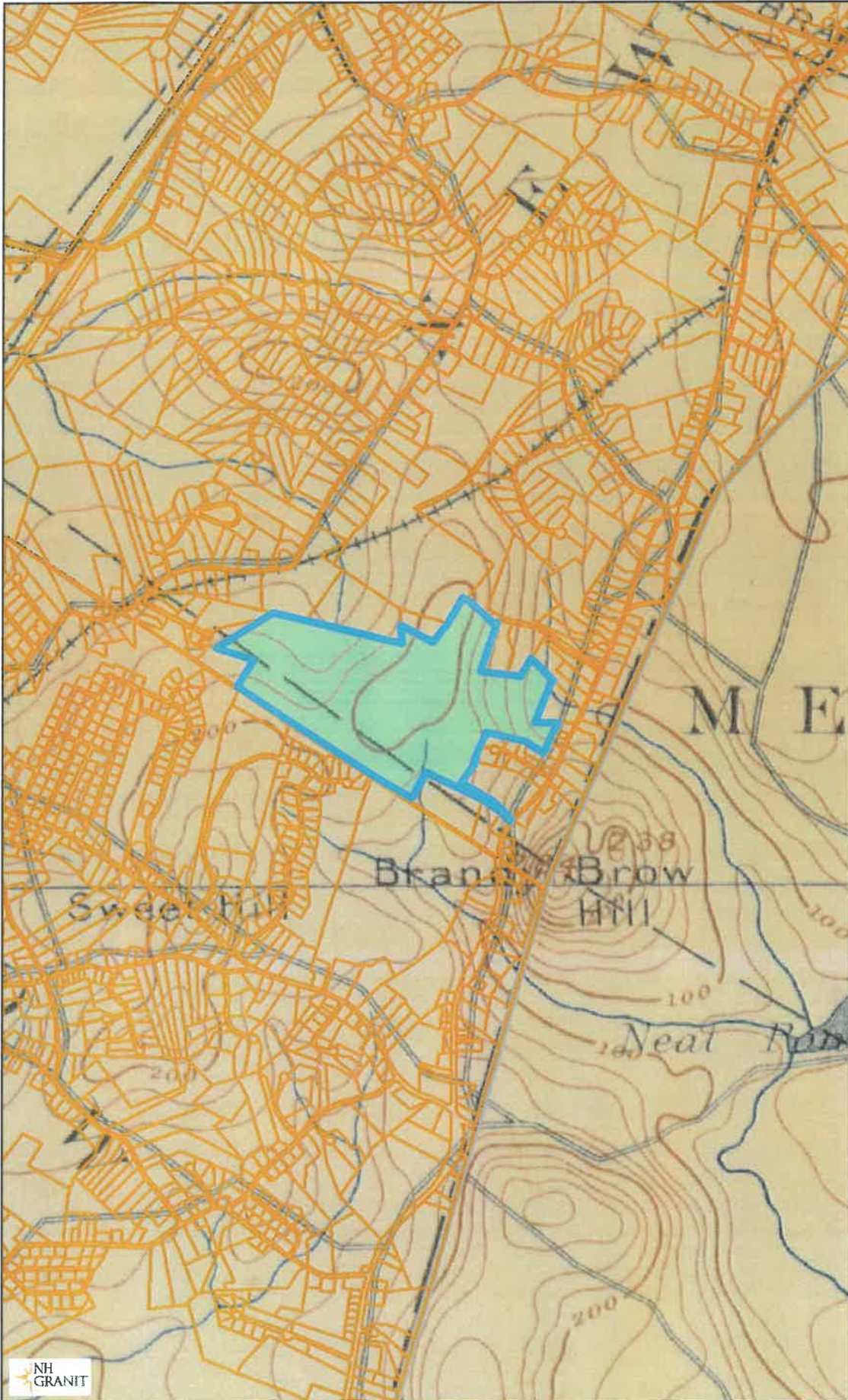
Prepared by:

**Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
8/14/2023
REV #1: 10/10/2023
JBE Project No. 21117**

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USGS Map



Legend

- Parcels
 - Parcel Polygons
 - Attributes for Additional Lines
- State
- County
- City/Town
- 1893

Map Scale

1: 24,000

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Map Generated: 10/25/2021



Notes



5. DRAINAGE ANALYSIS

The purpose of this project is to construct 2 roads (Puzzle Lane and Coleman Place), 9 residential multi-family buildings containing 44 units, and associated parking and utilities as part of Phase-5 of the Southern NH Industrial Park Development. Two models were compiled, one for the area in its existing (pre-development) condition, and a second for its proposed (post-development) condition. The analysis was conducted using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment. A summary of the existing and proposed conditions peak rates of runoff is as follows:

Analysis Point	2-Year		10-Year		25-Year		50-Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Analysis Point #1	3.07	4.59	19.93	19.60	42.51	37.81	68.97	57.15
Analysis Point #2	2.65	0.86	8.49	7.23	18.34	15.82	29.71	26.94
Analysis Point #3	0.30	0.40	4.41	5.19	12.45	13.21	22.64	22.91
Analysis Point #4	0.20	0.54	2.19	2.86	5.12	5.94	8.53	10.12
Analysis Point #5	0.03	0.04	0.44	0.40	1.08	0.91	1.84	1.48
Total	6.25	6.43*	35.46	35.28	79.50	73.69	131.69	118.60

*A minor increase in the total peak rate of runoff at the 2-year storm event is due to the increased CN number in the post development conditions for contributing areas downgrade of the proposed drainage system. Rates of discharge at the proposed stormwater treatment features has been reduced to the greatest extent practicable.

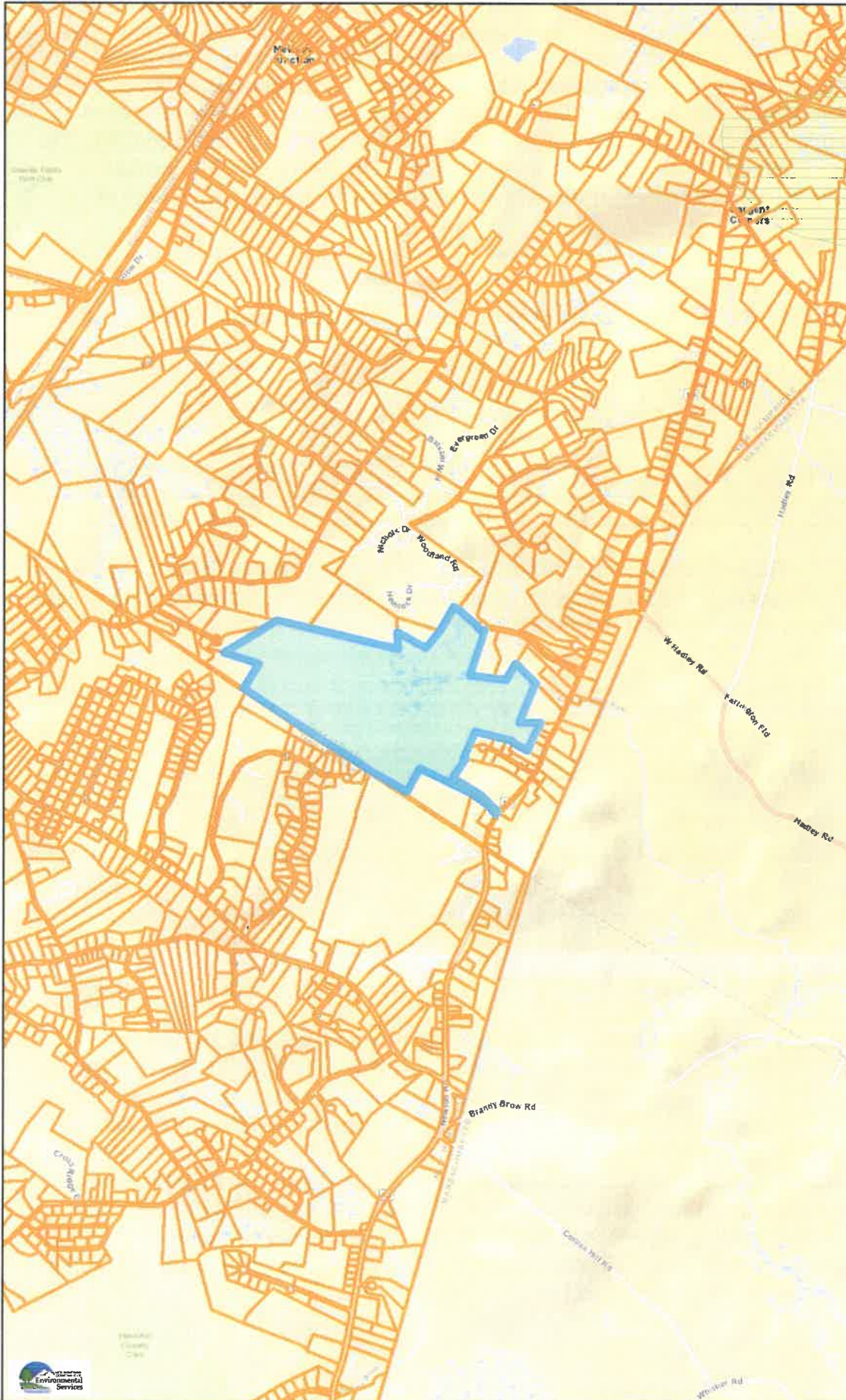
A summary of the existing and proposed conditions peak volumes of runoff is as follows:

Analysis Point	2 Year (c.f.)		2 Year (ac.ft.)	
	Pre	Post	Pre	Post
Analysis Point #1	77,953	113,544	1.79	2.61
Analysis Point #2	33,400	21,821	0.77	0.50
Analysis Point #3	7,831	10,441	0.18	0.24
Analysis Point #4	4,769	10,367	0.11	0.24
Analysis Point #5	672	648	0.02	0.01
Total	124,625	156,821	2.85	3.59
Pre vs. Post	+32,196		+0.74	

The drainage design intent for this site is to maintain the post-development peak flow to the pre-development peak flow conditions to the extent practicable and to effectively treat stormwater from the development of this project. This has been accomplished through the use of a wet extended detention basin, gravel wetlands and infiltration basins to maintain the peak discharge and infiltrate stormwater.

In addition, the potential for increased erosion and sedimentation is handled by way of sedimentation sumps and riprap inlet and outlet protection aprons. The use of Best Management Practices per the NHDES Stormwater Manual have been applied to the design of this drainage system and will be observed during all stages of construction. Existing wetlands and abutting property owners will suffer minimal impact resultant from this development.

Surface Impairments



Legend

- Class A Lakes with a Quarter Mile Buffer
- Class A - All Features
- All Lakes, with a Quarter Mile Buffer
- Outstanding Resource Water Watersheds
- Surface Waters with Impairment 2016 with Quarter Mile Buffer
- Watersheds with Chloride Impairments 2016
- Parcels**
 - Parcel Polygons
 - Attributes for Additional Lines

Map Scale

1: 25,977

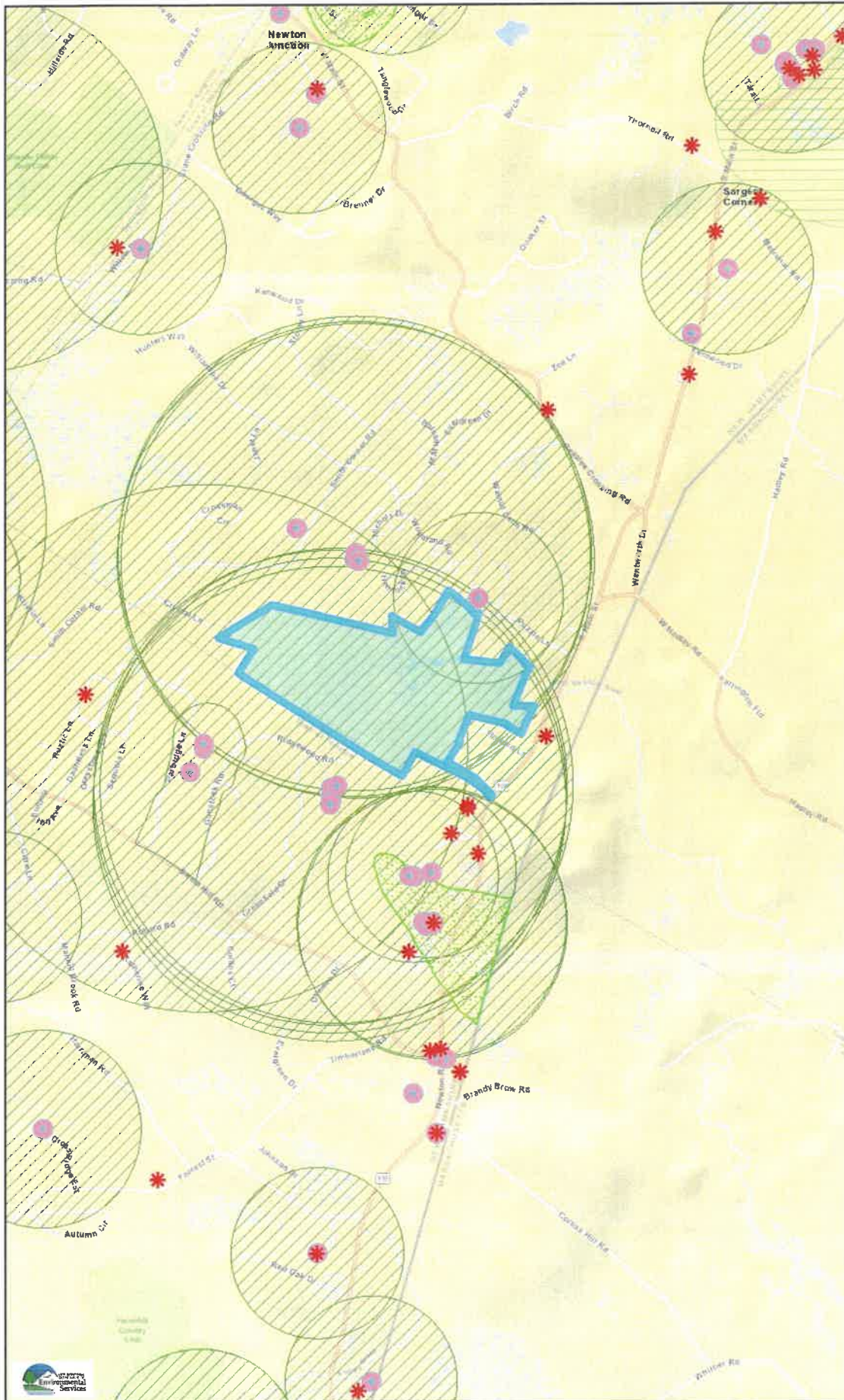
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Map Generated: 2/22/2022



Notes

AOT Screening Map



Legend

- ★ Remediation Sites
- Coastal and Great Bay Regional Communities
- Designated Rivers Quarter Mile Buffer
- Public Water Supply Wells
- Groundwater Classification / GA1
- Groundwater Classification / GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarter Mile Buffer
- Class A - All Features
- All Lakes, with a Quarter Mile Buffer
- Outstanding Resource Water Watersheds
- Surface Waters with Impairment 2016 with Quarter Mile Buffer
- Watersheds with Chloride Impairments 2016

Map Scale

1: 25,977

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Map Generated: 2/22/2022



Notes

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo



NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Timothy Ferwerda
43 Bartlett Hill Road
Deering, NH 03244

From: Amy Lamb, NH Natural Heritage Bureau
Date: 7/1/2020 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB20-1850 Town: Newton
Description: This is a 39 lot mixed industrial and residential development on 168 acres. Location: Tax Maps: 14-27-3
cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Contact the NH Fish & Game Department.

Vertebrate species

Spotted Turtle (<i>Clemmys guttata</i>)	State ¹	Federal	Notes
	T	--	Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

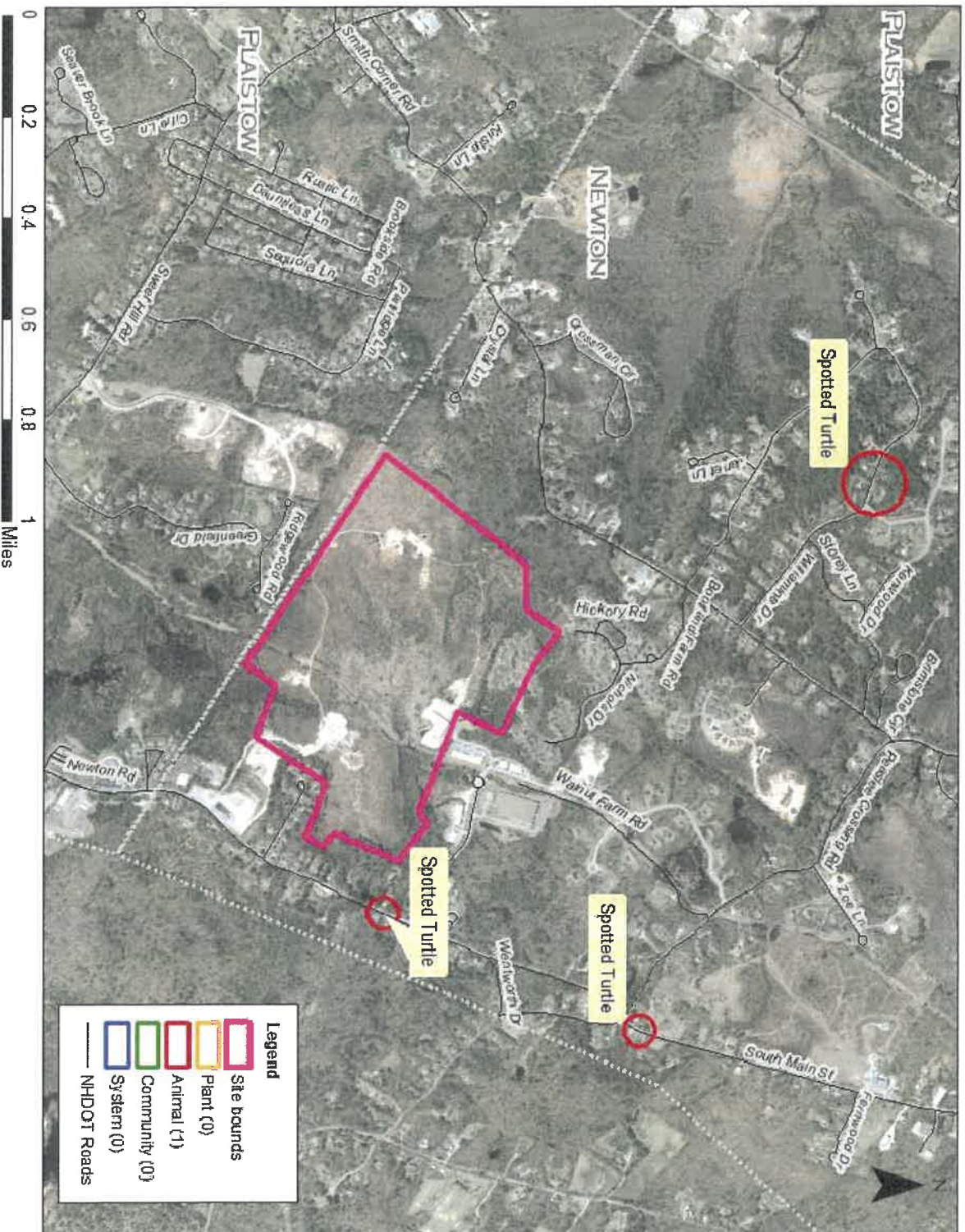
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB20-1850



New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)**Legal Status**

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2015: Area 14104: 1 adult observed, sex unknown, dead on road.
2012: Area 13202: 1 adult female observed.
2008: Area 11533: 1 young individual seen. Turtle shell was approx 6" from front to back.

General Area: 2015: Area 14104: Roadside.
2012: Area 13202: Crossing road near open wetlands.
2008: Area 11533: Traveling across back yard from wooded area which includes wet and dry ground.

General Comments: --
Management: --
Comments:

Location

Survey Site Name: Crane Crossing, east of
Managed By:

County: Rockingham
Town(s): Newton
Size: 11.5 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2008: Area 13202: Rte. 108, Newton, just north of intersection with Peaslee Crossing Road.
2008: Area 11533: 35 Williamine Drive, Newton.

Dates documented

First reported: 2008-06-22 Last reported: 2015-06-03

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

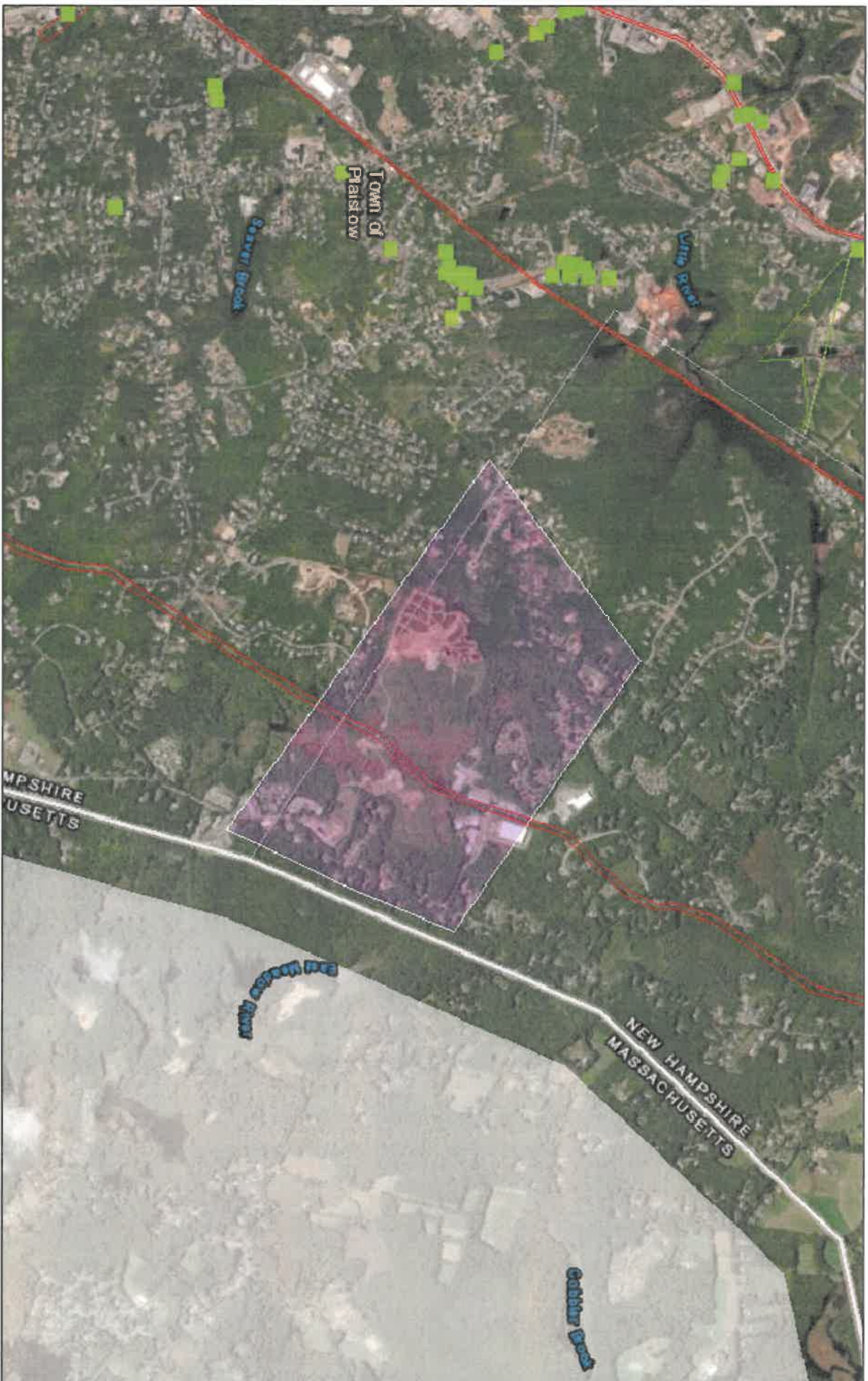
Search Results

[Back to Search](#) [Export Results](#) [Go to Home](#)

[Historical Properties](#) 1 [Archaeology Reports](#) 0 [Archaeological Sites](#) 6 [Reports](#) 0

Inventory #		Property Name	Address	Town	SR Listing Date	NR Listing Date	DOE Date Reviewed	El
View Zoom		ZMT-PNGS	Portland Natural Gas Transmission Project, Seacoast	zMulti-town				N





December 27, 2022

New Hampshire Mask

Project Areas

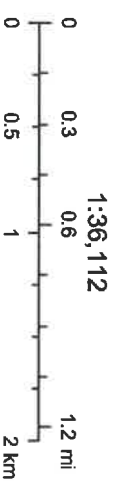
Individual Properties < 10 acres

Counties

Individual Properties > 10 acres

Towns

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community


























A horizontal scale bar with markings at 0, 250, 500, 1000, and 1500 meters. The unit 'Meters' is written at the right end.

✶

**Web Soil Survey
National Cooperative Soil Survey**

4/4/2022
Page 1 of 5

MAP LEGEND

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

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,800 to 1:24,000.

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: Essex County, Massachusetts, Northern Part
Survey Area Data: Version 17, Sep 2, 2021

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 24, Aug 31, 2021

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Aug 13, 2020—Oct 18, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	31.2	2.0%
31A	Walpole sandy loam, 0 to 3 percent slopes	0.8	0.1%
51A	Swansea muck, 0 to 1 percent slopes	2.0	0.1%
52A	Freetown muck, 0 to 1 percent slopes	3.6	0.2%
253B	Hinckley loamy sand, 3 to 8 percent slopes	3.7	0.2%
253C	Hinckley loamy sand, 8 to 15 percent slopes	12.1	0.8%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	9.1	0.6%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	2.1	0.1%
255D	Windsor loamy sand, 15 to 25 percent slopes	4.0	0.3%
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony	3.3	0.2%
307E	Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony	6.3	0.4%
410B	Sutton fine sandy loam, 3 to 8 percent slopes	9.1	0.6%
411B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	0.0	0.0%
420B	Canton fine sandy loam, 3 to 8 percent slopes	1.2	0.1%
420C	Canton fine sandy loam, 8 to 15 percent slopes	0.0	0.0%
600	Pits, gravel	15.8	1.0%
711B	Charlton-Rock outcrop-Hollis complex, 3 to 8 percent slopes	3.3	0.2%
Subtotals for Soil Survey Area		107.5	7.0%
Totals for Area of Interest		1,544.2	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12B	Hinckley loamy sand, 3 to 8 percent slopes	209.1	13.5%
12C	Hinckley loamy sand, 8 to 15 percent slopes	105.9	6.9%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12E	Hinckley loamy sand, 15 to 60 percent slopes	3.2	0.2%
26B	Windsor loamy sand, 3 to 8 percent slopes	197.5	12.8%
26C	Windsor loamy sand, 8 to 15 percent slopes	17.0	1.1%
42B	Canton fine sandy loam, 3 to 8 percent slopes	105.5	6.8%
42C	Canton fine sandy loam, 8 to 15 percent slopes	139.9	9.1%
42D	Canton gravelly fine sandy loam, 15 to 25 percent slopes	23.1	1.5%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	5.4	0.4%
66C	Paxton fine sandy loam, 8 to 15 percent slopes	3.4	0.2%
67C	Paxton fine sandy loam, 8 to 15 percent slopes, very stony	2.4	0.2%
115	Scarboro muck, coastal lowland, 0 to 3 percent slopes	46.5	3.0%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	29.8	1.9%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	42.2	2.7%
295	Freetown mucky peat, 0 to 2 percent slopes	94.9	6.1%
298	Pits, sand and gravel	28.3	1.8%
313A	Deerfield loamy fine sand, 0 to 3 percent slopes	31.6	2.0%
313B	Deerfield loamy fine sand, 3 to 8 percent slopes	13.3	0.9%
314A	Pipestone sand, 0 to 5 percent slopes	180.7	11.7%
395	Swansea mucky peat, 0 to 2 percent slopes	101.1	6.5%
446B	Scituate-Newfields complex, 3 to 8 percent slopes	24.8	1.6%
531B	Scio very fine sandy loam, 0 to 5 percent slopes	1.8	0.1%
547A	Walpole very fine sandy loam, 0 to 3 percent slopes, very stony	3.7	0.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
547B	Walpole very fine sandy loam, 3 to 8 percent slopes, very stony	25.4	1.6%
Subtotals for Soil Survey Area		1,436.7	93.0%
Totals for Area of Interest		1,544.2	100.0%

Aerial Map



Legend

Parcels

Parcel Polygons

Attributes for Additional Lines

State

County

City/Town

Map Scale

1: 10,000

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Map Generated: 10/26/2021



Notes





GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

2.56	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
1.68	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
0.08	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.34	inches	Rd = Weighted groundwater recharge depth	
1.4499	ac-in	GRV = AI * Rd	
5,263	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12")	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Bioretention Basin #6: 5,260CF

Bioretention Basin #7: 1,900 CF

TOTAL = 7,160 CF

21117-PROP-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

Prepared by Jones & Beach Engineers Inc

Printed 8/23/2023

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Stage-Area-Storage for Pond F7: FOREBAY #7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
110.00	210	0
110.05	222	11
110.10	234	22
110.15	247	34
110.20	260	47
110.25	274	60
110.30	287	74
110.35	301	89
110.40	316	104
110.45	331	121
110.50	346	138
110.55	361	155
110.60	377	174
110.65	393	193
110.70	409	213
110.75	426	234
110.80	443	256
110.85	461	278
110.90	478	302
110.95	497	326
111.00	515	351
111.05	542	378
111.10	570	406
111.15	599	435
111.20	628	465
111.25	658	498
111.30	689	531
111.35	721	567
111.40	753	603
111.45	786	642
111.50	819	682
111.55	854	724
111.60	889	767
111.65	924	813
111.70	961	860
111.75	998	909
111.80	1,036	960
111.85	1,074	1,012
111.90	1,113	1,067
111.95	1,153	1,124
112.00	1,194	1,182
112.05	1,249	1,243
112.10	1,306	1,307
112.15	1,364	1,374
112.20	1,423	1,444
112.25	1,483	1,516
112.30	1,545	1,592
112.35	1,608	1,671
112.40	1,672	1,753
112.45	1,737	1,838
112.50	1,804	1,927

Lowest Outlet=111.00

10% WQV= 290 cu.ft.

Vol Prov'd= 351 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 50 yr Rainfall=7.41"

Printed 10/16/2023

Stage-Area-Storage for Pond C1: GR. WETLAND #1 CELL #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
110.90	1,906	0	111.42	2,165	1,060
110.91	1,912	19	111.43	2,170	1,081
110.92	1,917	38	111.44	2,175	1,103
110.93	1,923	57	111.45	2,180	1,125
110.94	1,928	77	111.46	2,185	1,147
110.95	1,934	96	111.47	2,190	1,169
110.96	1,940	115	111.48	2,195	1,190
110.97	1,945	135	111.49	2,200	1,212
110.98	1,951	154	111.50	2,205	1,234
110.99	1,956	174	111.51	2,210	1,257
111.00	1,962	193	111.52	2,215	1,279
111.01	1,967	213	111.53	2,220	1,301
111.02	1,971	233	111.54	2,225	1,323
111.03	1,976	252	111.55	2,230	1,345
111.04	1,981	272	111.56	2,235	1,368
111.05	1,986	292	111.57	2,240	1,390
111.06	1,990	312	111.58	2,245	1,412
111.07	1,995	332	111.59	2,250	1,435
111.08	2,000	352	111.60	2,255	1,457
111.09	2,005	372			
111.10	2,009	392			
111.11	2,014	412			
111.12	2,019	432			
111.13	2,024	452			
111.14	2,029	473			
111.15	2,033	493			
111.16	2,038	513			
111.17	2,043	534			
111.18	2,048	554			
111.19	2,053	575			
111.20	2,057	595			
111.21	2,062	616			
111.22	2,067	637			
111.23	2,072	657			
111.24	2,077	678			
111.25	2,082	699			
111.26	2,086	720			
111.27	2,091	740			
111.28	2,096	761			
111.29	2,101	782			
111.30	2,106	803			
111.31	2,111	825			
111.32	2,116	846			
111.33	2,121	867			
111.34	2,126	888			
111.35	2,130	909			
111.36	2,135	931			
111.37	2,140	952			
111.38	2,145	974			
111.39	2,150	995			
111.40	2,155	1,017			
111.41	2,160	1,038			

TOP OF BERM = 111.60

45% WQV Req'd= 1,306 cu.ft.

WQV Prov'd= 1,457 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 50 yr Rainfall=7.41"

Printed 10/16/2023

Stage-Area-Storage for Pond C2: GR. WETLAND #1 CELL #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
110.90	1,906	0	111.42	2,165	1,060
110.91	1,912	19	111.43	2,170	1,081
110.92	1,917	38	111.44	2,175	1,103
110.93	1,923	57	111.45	2,180	1,125
110.94	1,928	77	111.46	2,185	1,147
110.95	1,934	96	111.47	2,190	1,169
110.96	1,940	115	111.48	2,195	1,190
110.97	1,945	135	111.49	2,200	1,212
110.98	1,951	154	111.50	2,205	1,234
110.99	1,956	174	111.51	2,210	1,257
111.00	1,962	193	111.52	2,215	1,279
111.01	1,967	213	111.53	2,220	1,301
111.02	1,971	233	111.54	2,225	1,323
111.03	1,976	252	111.55	2,230	1,345
111.04	1,981	272	111.56	2,235	1,368
111.05	1,986	292	111.57	2,240	1,390
111.06	1,990	312	111.58	2,245	1,412
111.07	1,995	332	111.59	2,250	1,435
111.08	2,000	352	111.60	2,255	1,457
111.09	2,005	372			
111.10	2,009	392			
111.11	2,014	412			
111.12	2,019	432			
111.13	2,024	452			
111.14	2,029	473			
111.15	2,033	493			
111.16	2,038	513			
111.17	2,043	534			
111.18	2,048	554			
111.19	2,053	575			
111.20	2,057	595			
111.21	2,062	616			
111.22	2,067	637			
111.23	2,072	657			
111.24	2,077	678			
111.25	2,082	699			
111.26	2,086	720			
111.27	2,091	740			
111.28	2,096	761			
111.29	2,101	782			
111.30	2,106	803			
111.31	2,111	825			
111.32	2,116	846			
111.33	2,121	867			
111.34	2,126	888			
111.35	2,130	909			
111.36	2,135	931			
111.37	2,140	952			
111.38	2,145	974			
111.39	2,150	995			
111.40	2,155	1,017			
111.41	2,160	1,038			

TOP OF BERM = 111.60

45% WQV Req'd= 1,306 cu.ft.

WQV Prov'd= 1,457 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 50 yr Rainfall=7.41"

Printed 10/16/2023

Stage-Area-Storage for Pond P7: GRAVEL WETLAND #1

Elevation (feet)	Discharge (cfs)	Storage (cubic-feet)	Elevation (feet)	Discharge (cfs)	Storage (cubic-feet)
110.90	0.00	0	111.94	5.22	4,564
110.92	0.04	76	111.96	5.68	4,665
110.94	0.04	153	111.98	6.15	4,766
110.96	0.04	231	112.00	6.63	4,867
110.98	0.04	309	112.02	7.18	4,969
111.00	0.04	387	112.04	7.79	5,072
111.02	0.04	465	112.06	8.45	5,174
111.04	0.04	545	112.08	9.14	5,277
111.06	0.04	624	112.10	9.86	5,381
111.08	0.04	704	112.12	10.61	5,484
111.10	0.05	784	112.14	11.39	5,589
111.12	0.05	864	112.16	12.19	5,693
111.14	0.05	945	112.18	13.02	5,798
111.16	0.05	1,027	112.20	13.88	5,903
111.18	0.05	1,108	112.22	14.76	6,008
111.20	0.05	1,191	112.24	15.67	6,114
111.22	0.05	1,273	112.26	16.60	6,221
111.24	0.05	1,356	112.28	17.55	6,327
111.26	0.05	1,439	112.30	18.52	6,434
111.28	0.05	1,523	112.32	19.52	6,541
111.30	0.05	1,607	112.34	20.54	6,649
111.32	0.06	1,691	112.36	21.58	6,757
111.34	0.06	1,776	112.38	22.64	6,865
111.36	0.06	1,861	112.40	23.72	6,974
111.38	0.06	1,947	112.42	24.80	7,083
111.40	0.06	2,033	112.44	25.90	7,193
111.42	0.06	2,119	112.46	27.02	7,302
111.44	0.06	2,206	112.48	28.16	7,413
111.46	0.06	2,293	112.50	29.31	7,523
111.48	0.06	2,381	112.52	30.48	7,634
111.50	0.06	2,469	112.54	31.66	7,745
111.52	0.06	2,557	112.56	32.86	7,857
111.54	0.06	2,646	112.58	34.07	7,969
111.56	0.06	2,735	112.60	35.30	8,081
111.58	0.07	2,825			
111.60	0.07	2,915			
111.62	0.14	3,009			
111.64	0.28	3,103			
111.66	0.45	3,197			
111.68	0.66	3,292			
111.70	0.89	3,388			
111.72	1.15	3,483			
111.74	1.44	3,579			
111.76	1.74	3,676			
111.78	2.06	3,773			
111.80	2.40	3,870			
111.82	2.76	3,968			
111.84	3.13	4,066			
111.86	3.52	4,165			
111.88	3.92	4,264			
111.90	4.34	4,364			
111.92	4.77	4,464			

WQV= 2,903 cu.ft.

ELEV OF WQV = 111.60

Q @ WQV = 0.07 cfs

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 10 yr Rainfall=4.82"

Printed 8/23/2023

Stage-Area-Storage for Pond C1: GR. WETLAND #1 CELL #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
110.90	1,866	0	111.42	2,138	1,041
110.91	1,871	19	111.43	2,143	1,063
110.92	1,877	37	111.44	2,148	1,084
110.93	1,882	56	111.45	2,154	1,106
110.94	1,888	75	111.46	2,159	1,127
110.95	1,893	94	111.47	2,164	1,149
110.96	1,899	113	111.48	2,169	1,170
110.97	1,904	132	111.49	2,175	1,192
110.98	1,910	151	111.50	2,180	1,214
110.99	1,915	170	111.51	2,186	1,236
111.00	1,921	189	111.52	2,191	1,258
111.01	1,926	209	111.53	2,196	1,280
111.02	1,931	228	111.54	2,202	1,302
111.03	1,936	247	111.55	2,207	1,324
111.04	1,941	267			
111.05	1,946	286			
111.06	1,951	306			
111.07	1,956	325			
111.08	1,961	345			
111.09	1,966	364			
111.10	1,972	384			
111.11	1,977	404			
111.12	1,982	423			
111.13	1,987	443			
111.14	1,992	463			
111.15	1,997	483			
111.16	2,002	503			
111.17	2,007	523			
111.18	2,012	543			
111.19	2,018	563			
111.20	2,023	584			
111.21	2,028	604			
111.22	2,033	624			
111.23	2,038	645			
111.24	2,043	665			
111.25	2,049	685			
111.26	2,054	706			
111.27	2,059	727			
111.28	2,064	747			
111.29	2,069	768			
111.30	2,075	789			
111.31	2,080	809			
111.32	2,085	830			
111.33	2,090	851			
111.34	2,095	872			
111.35	2,101	893			
111.36	2,106	914			
111.37	2,111	935			
111.38	2,116	956			
111.39	2,122	977			
111.40	2,127	999			
111.41	2,132	1,020			

TOP OF BERM = 111.55

45% WQV Req'd= 1,306 cu.ft.

WQV Prov'd= 1,324 cu.ft.



GRAVEL WETLAND DESIGN CRITERIA (Env-Wq 1508.05)

Type/Node Name: **34P- GRAVEL WETLAND #3**

Enter the node name in the drainage analysis if applicable.

0.81	ac	A = Area draining to the practice	
0.42	ac	A _i = Impervious area draining to the practice	
0.51	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.51	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.41	ac-in	WQV= 1" x R _v x A	
1,504	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
150	cf	10% x WQV (check calc for sediment forebay)	
677	cf	45% x WQV (check calc for gravel wetland treatment bay volume)	
695	cf	V _{SED} = Sediment forebay volume	≥ 10%WQV
904	cf	V _{TB1} = Volume of treatment bay 1 ¹	≥ 45%WQV
904	cf	V _{TB2} = Volume of treatment bay 2 ¹	≥ 45%WQV
0.03	cfs	2Q _{avg} = 2* WQV / 24 hrs * (1hr / 3600 sec) ⁴	
114.86	ft	E _{WQV} = Elevation of WQV (attach stage-storage table)	
0.03	cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)	< 2Q _{avg}
27.85	hours	T _{ED} = Drawdown time of extended detention = 2WQV/Q _{WQV}	≥ 24-hrs
3.00	:1	Pond side slopes	≥ 3:1
117.70	ft	Elevation of SHWT	
115.70	ft	SHWT - 2 feet	
114.00	ft	E _{pp} = Elevation of the permanent pool (elevation of lowest orifice) ³	≤ E _{SHWT} - 2 ft
100.00	ft	Length of the flow path between the inlet and outlet in each cell	≥ 15 ft
TEE BAFFLE W/ SCREEN		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of ≤6")?	
115.89	ft	Peak elevation of the 50-year storm event (E ₅₀)	
117.00	ft	Berm elevation of the pond	
YES		E ₅₀ ≤ the berm elevation?	← yes

Qualified professional that developed the planting plan
 Name, Profession:

1. Volume stored above the wetland soil and below the high flow by-pass.
2. To ensure orifice is sized so that WQV is released at a relatively stable rate.
3. 4" to 8" below the wetland soil. If lowest orifice is higher than (SHWT - 2 feet), and saturated hydraulic conductivity (Ksat) is greater than 0.015 in/hr, the system must be lined.

Designer's Notes:

21117-PROP-PHASE-5

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Type III 24-hr 10 yr Rainfall=4.82"

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Stage-Area-Storage for Pond 34F: FOREBAY #14

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
114.00	108	0	116.60	918	1,168
114.05	116	6	116.65	941	1,214
114.10	125	12	116.70	964	1,262
114.15	133	18	116.75	987	1,311
114.20	142	25	116.80	1,011	1,361
114.25	152	32	116.85	1,035	1,412
114.30	161	40	116.90	1,059	1,464
114.35	171	48	116.95	1,083	1,518
114.40	182	57	117.00	1,108	1,572
114.45	192	67			
114.50	203	76			
114.55	214	87			
114.60	226	98			
114.65	237	109			
114.70	249	122			
114.75	262	134			
114.80	274	148			
114.85	287	162			
114.90	300	177			
114.95	314	192			
115.00	328	208			
115.05	342	225			
115.10	356	242			
115.15	371	260			
115.20	386	279			
115.25	401	299			
115.30	417	319			
115.35	433	340			
115.40	449	363			
115.45	465	385			
115.50	482	409			
115.55	499	434			
115.60	516	459			
115.65	534	485			
115.70	552	512			
115.75	570	540			
115.80	589	569			
115.85	608	599			
115.90	627	630			
115.95	646	662			
116.00	666	695			
116.05	685	729			
116.10	705	763			
116.15	725	799			
116.20	745	836			
116.25	766	874			
116.30	787	912			
116.35	808	952			
116.40	829	993			
116.45	851	1,035			
116.50	873	1,078			
116.55	895	1,123			

Lowest Outlet=116.00

10% WQV= 150 cu.ft.

Vol Prov'd= 695 cu.ft.

21117-PROP-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

Prepared by Jones & Beach Engineers Inc

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Stage-Area-Storage for Pond C3: GW #3 CELL #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
114.00	717	0	114.52	908	422
114.01	720	7	114.53	912	431
114.02	724	14	114.54	916	440
114.03	727	22	114.55	920	449
114.04	731	29	114.56	924	458
114.05	734	36	114.57	928	468
114.06	738	44	114.58	932	477
114.07	741	51	114.59	936	486
114.08	745	58	114.60	940	496
114.09	748	66	114.61	944	505
114.10	752	73	114.62	948	514
114.11	756	81	114.63	952	524
114.12	759	89	114.64	956	533
114.13	763	96	114.65	960	543
114.14	766	104	114.66	964	553
114.15	770	111	114.67	968	562
114.16	773	119	114.68	972	572
114.17	777	127	114.69	976	582
114.18	781	135	114.70	980	591
114.19	784	143	114.71	984	601
114.20	788	150	114.72	988	611
114.21	792	158	114.73	992	621
114.22	795	166	114.74	996	631
114.23	799	174	114.75	1,000	641
114.24	802	182	114.76	1,004	651
114.25	806	190	114.77	1,008	661
114.26	810	198	114.78	1,012	671
114.27	814	206	114.79	1,017	681
114.28	817	215	114.80	1,021	692
114.29	821	223	114.81	1,025	702
114.30	825	231	114.82	1,029	712
114.31	828	239	114.83	1,033	722
114.32	832	248	114.84	1,037	733
114.33	836	256	114.85	1,041	743
114.34	840	264	114.86	1,046	754
114.35	843	273	114.87	1,050	764
114.36	847	281	114.88	1,054	775
114.37	851	290	114.89	1,058	785
114.38	855	298	114.90	1,062	796
114.39	858	307	114.91	1,067	806
114.40	862	315	114.92	1,071	817
114.41	866	324	114.93	1,075	828
114.42	870	333	114.94	1,079	839
114.43	874	341	114.95	1,084	849
114.44	877	350	114.96	1,088	860
114.45	881	359	114.97	1,092	871
114.46	885	368	114.98	1,096	882
114.47	889	377	114.99	1,101	893
114.48	893	386	115.00	1,105	904

TOP OF BERM = 115.00

45% WQV Req'd= 677 cu.ft.

WQV Prov'd= 904 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 10 yr Rainfall=4.82"

Printed 8/23/2023

Stage-Area-Storage for Pond C4: GW #3 CELL #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
114.00	717	0	114.52	908	422
114.01	720	7	114.53	912	431
114.02	724	14	114.54	916	440
114.03	727	22	114.55	920	449
114.04	731	29	114.56	924	458
114.05	734	36	114.57	928	468
114.06	738	44	114.58	932	477
114.07	741	51	114.59	936	486
114.08	745	58	114.60	940	496
114.09	748	66	114.61	944	505
114.10	752	73	114.62	948	514
114.11	756	81	114.63	952	524
114.12	759	89	114.64	956	533
114.13	763	96	114.65	960	543
114.14	766	104	114.66	964	553
114.15	770	111	114.67	968	562
114.16	773	119	114.68	972	572
114.17	777	127	114.69	976	582
114.18	781	135	114.70	980	591
114.19	784	143	114.71	984	601
114.20	788	150	114.72	988	611
114.21	792	158	114.73	992	621
114.22	795	166	114.74	996	631
114.23	799	174	114.75	1,000	641
114.24	802	182	114.76	1,004	651
114.25	806	190	114.77	1,008	661
114.26	810	198	114.78	1,012	671
114.27	814	206	114.79	1,017	681
114.28	817	215	114.80	1,021	692
114.29	821	223	114.81	1,025	702
114.30	825	231	114.82	1,029	712
114.31	828	239	114.83	1,033	722
114.32	832	248	114.84	1,037	733
114.33	836	256	114.85	1,041	743
114.34	840	264	114.86	1,046	754
114.35	843	273	114.87	1,050	764
114.36	847	281	114.88	1,054	775
114.37	851	290	114.89	1,058	785
114.38	855	298	114.90	1,062	796
114.39	858	307	114.91	1,067	806
114.40	862	315	114.92	1,071	817
114.41	866	324	114.93	1,075	828
114.42	870	333	114.94	1,079	839
114.43	874	341	114.95	1,084	849
114.44	877	350	114.96	1,088	860
114.45	881	359	114.97	1,092	871
114.46	885	369	114.98	1,096	882
			114.99	1,101	893
			115.00	1,105	904

TOP OF BERM = 115.00

45% WQV Req'd= 677 cu.ft.

WQV Prov'd= 904 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 10 yr Rainfall=4.82"

Printed 8/23/2023

Stage-Area-Storage for Pond 34P: GRAVEL WETLAND #3

Elevation (feet)	Discharge (cfs)	Storage (cubic-feet)	Elevation (feet)	Discharge (cfs)	Storage (cubic-feet)
114.00	0.00	0	116.60	17.48	6,546
114.05	0.02	73	116.65	19.02	6,728
114.10	0.02	147	116.70	20.61	6,912
114.15	0.02	223	116.75	22.23	7,098
114.20	0.02	301	116.80	23.89	7,286
114.25	0.02	381	116.85	25.59	7,477
114.30	0.02	462	116.90	27.32	7,669
114.35	0.03	546	116.95	29.09	7,864
114.40	0.03	631	117.00	30.89	8,062
114.45	0.03	718			
114.50	0.03	808			
114.55	0.03	899			
114.60	0.03	992			
114.65	0.03	1,087			
114.70	0.03	1,184			
114.75	0.03	1,283			
114.80	0.03	1,384			
114.85	0.03	1,487			
114.90	0.03	1,593			
114.95	0.04	1,700			
115.00	0.04	1,810			
115.05	0.04	1,927			
115.10	0.04	2,046			
115.15	0.04	2,168			
115.20	0.04	2,291			
115.25	0.04	2,416			
115.30	0.04	2,543			
115.35	0.04	2,671			
115.40	0.04	2,802			
115.45	0.04	2,935			
115.50	0.04	3,069			
115.55	0.04	3,206			
115.60	0.04	3,345			
115.65	0.19	3,485			
115.70	0.46	3,628			
115.75	0.80	3,772			
115.80	1.20	3,919			
115.85	1.66	4,068			
115.90	2.16	4,219			
115.95	2.71	4,371			
116.00	3.29	4,526			
116.05	4.01	4,684			
116.10	4.86	4,843			
116.15	5.79	5,004			
116.20	6.80	5,167			
116.25	7.89	5,332			
116.30	9.06	5,499			
116.35	10.30	5,668			
116.40	11.61	5,840			
116.45	12.98	6,013			
116.50	14.42	6,188			
116.55	15.92	6,366			

WQV= 1,504 cu.ft.

ELEV OF WQV = 114.86

Q @ WQV = 0.03 cfs



INFILTRATION PRACTICE CRITERIA (Env-Wq 1508.06)

Type/Node Name: **52P- BIOFILTRATION BASIN #7**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Y	Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← yes
1.24 ac	A = Area draining to the practice	
0.50 ac	A _I = Impervious area draining to the practice	
0.40 decimal	I = Percent impervious area draining to the practice, in decimal form	
0.41 unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.51 ac-in	WQV = 1" x R _v x A	
1,863 cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
466 cf	25% x WQV (check calc for sediment forebay volume)	
FOREBAY		
472 cf	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
1,900 cf	V = Volume ¹ (attach a stage-storage table)	≥ WQV
7,464 sf	A _{SA} = Surface area of the bottom of the pond	
0.97 iph	K _{sat} _{DESIGN} = Design infiltration rate ²	
3.1 hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	< 72-hrs
119.00 feet	E _{BTM} = Elevation of the bottom of the basin	
115.00 feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
110.50 feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
4.00 feet	D _{SHWT} = Separation from SHWT	≥ *³
8.5 feet	D _{ROCK} = Separation from bedrock	≥ *³
- ft	D _{amend} = Depth of amended soil, if applicable due high infiltration rate	≥ 24"
- ft	D _T = Depth of trench, if trench proposed	4 - 10 ft
N Yes/No	If a trench or underground system is proposed, has observation well been provided?	← yes
N	If a trench is proposed, does material meet Env-Wq 1508.06(k)(2) requirements. ⁴	← yes
Y Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← yes
3.0 :1	If a basin is proposed, pond side slopes.	≥ 3:1
119.40 ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
119.99 ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
121.00 ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES	10 peak elevation ≤ Elevation of the top of the trench? ⁵	← yes
YES	If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. K_{sat}_{DESIGN} includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes: _____

21117-PROP-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

Prepared by Jones & Beach Engineers Inc

Printed 8/23/2023

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Stage-Area-Storage for Pond 52F: FOREBAY #11

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
119.00	249	0	120.04	514	381
119.02	253	5	120.06	527	392
119.04	257	10	120.08	541	403
119.06	261	15	120.10	555	413
119.08	265	21	120.12	569	425
119.10	269	26	120.14	583	436
119.12	273	31	120.16	597	448
119.14	278	37	120.18	612	460
119.16	282	42	120.20	627	472
119.18	286	48	120.22	642	485
119.20	290	54	120.24	657	498
119.22	295	60	120.26	672	511
119.24	299	66	120.28	688	525
119.26	303	72	120.30	703	539
119.28	308	78	120.32	719	553
119.30	312	84	120.34	735	568
119.32	317	90	120.36	751	583
119.34	321	97	120.38	768	598
119.36	326	103	120.40	784	613
119.38	330	110	120.42	801	629
119.40	335	116	120.44	818	645
119.42	339	123	120.46	835	662
119.44	344	130	120.48	852	679
119.46	349	137	120.50	869	696
119.48	353	144	120.52	887	714
119.50	358	151	120.54	905	731
119.52	363	158	120.56	923	750
119.54	368	165	120.58	941	768
119.56	373	173	120.60	959	787
119.58	377	180	120.62	978	807
119.60	382	188	120.64	996	826
119.62	387	196	120.66	1,015	847
119.64	392	203	120.68	1,034	867
119.66	397	211	120.70	1,053	888
119.68	402	219	120.72	1,073	909
119.70	407	227	120.74	1,092	931
119.72	412	236	120.76	1,112	953
119.74	418	244	120.78	1,132	975
119.76	423	252	120.80	1,152	998
119.78	428	261	120.82	1,172	1,021
119.80	433	269	120.84	1,192	1,045
119.82	438	278	120.86	1,213	1,069
119.84	444	287	120.88	1,234	1,094
119.86	449	296	120.90	1,255	1,118
119.88	454	305	120.92	1,276	1,144
119.90	460	314	120.94	1,297	1,169
119.92	465	323	120.96	1,319	
119.94	470	333	120.98	1,340	
119.96	476	342	121.00	1,362	
119.98	481	352			
120.00	487	361			
120.02	500	371			

Lowest Outlet=120.20

25% WQV= 446 cu.ft.

Vol Prov'd= 472 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 50 yr Rainfall=7.41"

Printed 10/11/2023

Stage-Area-Storage for Pond 52P: BIOFILTRATION BASIN #7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
119.00	7,465	0	120.04	8,639	8,367
119.02	7,487	150	120.06	8,662	8,540
119.04	7,509	299	120.08	8,685	8,714
119.06	7,530	450	120.10	8,708	8,887
119.08	7,552	601	120.12	8,731	9,062
119.10	7,574	752	120.14	8,754	9,237
119.12	7,596	904	120.16	8,777	9,412
119.14	7,618	1,056	120.18	8,801	9,588
119.16	7,640	1,208	120.20	8,824	9,764
119.18	7,662	1,361	120.22	8,847	9,941
119.20	7,684	1,515	120.24	8,870	10,118
119.22	7,706	1,669	120.26	8,894	10,296
119.24	7,728	1,823	120.28	8,917	10,474
119.26	7,751	1,978	120.30	8,940	10,652
119.28	7,773	2,133	120.32	8,964	10,831
119.30	7,795	2,289	120.34	8,987	11,011
119.32	7,817	2,445	120.36	9,011	11,191
119.34	7,840	2,602	120.38	9,034	11,371
119.36	7,862	2,759	120.40	9,058	11,552
119.38	7,884	2,916	120.42	9,081	11,734
119.40	7,907	3,074	120.44	9,105	11,915
119.42	7,929	3,232	120.46	9,129	12,098
119.44	7,952	3,391	120.48	9,152	12,281
119.46	7,974	3,550	120.50	9,176	12,464
119.48	7,997	3,710	120.52	9,200	12,648
119.50	8,019	3,870	120.54	9,223	12,832
119.52	8,042	4,031	120.56	9,247	13,017
119.54	8,064	4,192	120.58	9,271	13,202
119.56	8,087	4,353	120.60	9,295	13,387
119.58	8,110	4,515	120.62	9,319	13,573
119.60	8,132	4,678	120.64	9,343	13,760
119.62	8,155	4,841	120.66	9,367	13,947
119.64	8,178	5,004	120.68	9,390	14,135
119.66	8,201	5,168	120.70	9,414	14,323
119.68	8,223	5,332	120.72	9,438	14,511
119.70	8,246	5,497	120.74	9,463	14,700
119.72	8,269	5,662	120.76	9,487	14,890
119.74	8,292	5,827	120.78	9,511	15,080
119.76	8,315	5,994	120.80	9,535	15,270
119.78	8,338	6,160	120.82	9,559	15,461
119.80	8,361	6,327	120.84	9,583	15,653
119.82	8,384	6,494	120.86	9,607	15,845
119.84	8,407	6,662	120.88	9,632	16,037
119.86	8,430	6,831	120.90	9,656	16,230
119.88	8,453	7,000	120.92	9,680	16,423
119.90	8,477	7,169	120.94	9,705	16,617
119.92	8,500	7,339	120.96	9,729	16,811
119.94	8,523	7,509	120.98	9,754	17,006
119.96	8,546	7,680	121.00	9,778	17,202
119.98	8,570	7,851			
120.00	8,593	8,022			
120.02	8,616	8,194			

Lowest Outlet= 119.25

WQV Req'd= 1,863 cu.ft.

WQV Prov'd=1,900 cu.ft.



STORMWATER POND DESIGN CRITERIA

Env-Wq 1508.03

Type/Node Name: **53P- WET POND #3**

Enter the type of stormwater pond (e.g., Wet Pond) and the node name in the drainage analysis, if applicable.

1.80	ac	A = Area draining to the practice	
0.93	ac	A _i = Impervious area draining to the practice	
0.52	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.51	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.92	ac-in	WQV = 1" x R _v x A	
3,354	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
335	cf	10% x WQV (check calc for sediment forebay and micropool volume)	
1,677	cf	50% x WQV (check calc for extended detention volume)	
413	cf	V _{SED} = Sediment forebay volume	≥ 10%WQV
4,575	cf	V _{PP} = Permanent pool volume (volume below the lowest invert of the outlet structure) Attach stage-storage table.	
no	cf	Extended Detention? ¹	≤ 50% WQV
-		V _{ED} = Volume of extended detention (if "yes" is given in box above)	
-		E _{ED} = Elevation of WQV if "yes" is given in box above ²	
-	cfs	2Q _{avg} = 2* V _{ED} / 24 hrs * (1hr / 3600 sec) (used to check against Q _{EDmax} below)	
-	cfs	Q _{EDmax} = Discharge at the E _{ED} (attach stage-discharge table)	< 2Q _{avg}
-	hours	T _{ED} = Drawdown time of extended detention = 2V _{ED} /Q _{EDmax}	≥ 24-hrs
3.00	:1	Pond side slopes	≥ 3:1
113.02	ft	Elevation of seasonal high water table	
114.15	ft	Elevation of lowest pond outlet	
108.02	ft	Max floor = Maximum elevation of pond bottom (ft)	
105.02	ft	Minimum floor (to maintain depth at less than 8')	≤ 8 ft
108.00	ft	Elevation of pond floor ³	≤ Max floor and > Min floor
120.00	ft	Length of the flow path between the inlet and outlet at mid-depth	
40.00	ft	Average width ([average of the top width + average bottom width]/2)	
3.00	:1	Length to average width ratio	≥ 3:1
Y	Yes/No	Is the perimeter curvilinear.	← Yes
Y	Yes/No	Are the inlet and outlet located as far apart as possible.	← Yes
Y	Yes/No	Is there a manually-controlled drain to dewater the pond over a 24hr period?	
If no state why:			
TEE BAFFLE WITH SCREEN		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of <6")?	
116.90	ft	Peak elevation of the 50-year storm event	
118.00	ft	Berm elevation of the pond	
YES		50 peak elevation ≤ the berm elevation?	←yes

1. If the entire WQV is stored in the perm. pool, there is no extended det., and the following five lines do not apply.

2. This is the elevation of WQV if the hydrologic analysis is set up to include the permanent pool storage in the node description.

3. If the pond floor elevation is above the max floor elev., a hydrologic budget must be submitted to demonstrate that a minimum depth of 3 feet can be maintained. (First check whether a revised "lowest pond outlet" elev. will resolve the issue.)

Designer's Notes:

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 10 yr Rainfall=4.82"

Printed 8/23/2023

Stage-Area-Storage for Pond 53F: FOREBAY #12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
115.00	111	0	117.60	2,941	2,249
115.05	120	6	117.65	3,103	2,400
115.10	128	12	117.70	3,270	2,560
115.15	138	19	117.75	3,441	2,728
115.20	147	26	117.80	3,617	2,904
115.25	157	33	117.85	3,797	3,089
115.30	167	41	117.90	3,981	3,284
115.35	177	50	117.95	4,170	3,488
115.40	188	59	118.00	4,363	3,701
115.45	199	69			
115.50	211	79			
115.55	222	90			
115.60	234	101			
115.65	247	113			
115.70	259	126			
115.75	272	139			
115.80	286	153			
115.85	299	168			
115.90	313	183			
115.95	327	199			
116.00	342	216			
116.05	376	234			
116.10	412	254			
116.15	449	275			
116.20	488	299			
116.25	529	324			
116.30	571	351			
116.35	615	381			
116.40	660	413			
116.45	707	447			
116.50	756	484			
116.55	806	523			
116.60	858	564			
116.65	912	609			
116.70	967	656			
116.75	1,024	705			
116.80	1,082	758			
116.85	1,142	814			
116.90	1,204	872			
116.95	1,267	934			
117.00	1,332	999			
117.05	1,442	1,068			
117.10	1,556	1,143			
117.15	1,675	1,224			
117.20	1,798	1,311			
117.25	1,926	1,404			
117.30	2,058	1,503			
117.35	2,194	1,610			
117.40	2,335	1,723			
117.45	2,480	1,843			
117.50	2,629	1,971			
117.55	2,783	2,106			

Lowest Outlet=116.40

25% WQV= 335 cu.ft.

Vol Prov'd= 413 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 10 yr Rainfall=4.82"

Printed 8/23/2023

Stage-Area-Storage for Pond 53P: WET POND #3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
108.00	14	0	113.20	1,533	2,808
108.10	20	2	113.30	1,599	2,964
108.20	27	4	113.40	1,666	3,128
108.30	34	7	113.50	1,734	3,297
108.40	43	11	113.60	1,804	3,474
108.50	53	16	113.70	1,875	3,658
108.60	64	22	113.80	1,948	3,849
108.70	76	28	113.90	2,022	4,048
108.80	88	37	114.00	2,097	4,254
108.90	102	46	114.10	2,159	4,467
109.00	117	57	114.20	2,222	4,686
109.10	133	70	114.30	2,287	4,911
109.20	150	84	114.40	2,352	5,143
109.30	167	100	114.50	2,418	5,382
109.40	186	117	114.60	2,484	5,627
109.50	206	137	114.70	2,552	5,878
109.60	227	158	114.80	2,621	6,137
109.70	249	182	114.90	2,690	6,403
109.80	271	208	115.00	2,761	6,675
109.90	295	237	115.10	2,832	6,955
110.00	320	267	115.20	2,905	7,242
110.10	341	300	115.30	2,978	7,536
110.20	362	335	115.40	3,052	7,837
110.30	384	373	115.50	3,127	8,146
110.40	406	412	115.60	3,203	8,463
110.50	429	454	115.70	3,280	8,787
110.60	453	498	115.80	3,358	9,119
110.70	477	544	115.90	3,436	9,458
110.80	502	593	116.00	3,516	9,806
110.90	528	645	116.10	3,601	10,162
111.00	554	699	116.20	3,687	10,526
111.10	581	756	116.30	3,774	10,899
111.20	609	815	116.40	3,862	11,281
111.30	637	877	116.50	3,951	11,672
111.40	666	943	116.60	4,041	12,071
111.50	695	1,011	116.70	4,132	12,480
111.60	725	1,082	116.80	4,224	12,898
111.70	756	1,156	116.90	4,318	13,325
111.80	787	1,233	117.00	4,412	13,761
111.90	819	1,313	117.10	4,507	14,207
112.00	852	1,397	117.20	4,603	14,663
112.10	901	1,484	117.30	4,700	15,128
112.20	952	1,577	117.40	4,798	15,603
112.30	1,004	1,675	117.50	4,898	16,088
112.40	1,057	1,778	117.60	4,998	16,583
112.50	1,112	1,886	117.70	5,099	17,087
112.60	1,168	2,000	117.80	5,201	17,602
112.70	1,225	2,120	117.90	5,305	18,128
112.80	1,284	2,245	118.00	5,409	18,663
112.90	1,344	2,377			
113.00	1,406	2,514			
113.10	1,469	2,658			

Lowest Outlet= 114.15

Vpp = 4,575 cu.ft.



STORMWATER POND DESIGN CRITERIA

Env-Wq 1508.03

Type/Node Name: **54P- WET POND #2**

Enter the type of stormwater pond (e.g., Wet Pond) and the node name in the drainage analysis, if applicable.

1.72	ac	A = Area draining to the practice	
0.87	ac	A _i = Impervious area draining to the practice	
0.50	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.50	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.87	ac-in	WQV = 1" x R _v x A	
3,149	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
315	cf	10% x WQV (check calc for sediment forebay and micropool volume)	
1,574	cf	50% x WQV (check calc for extended detention volume)	
818	cf	V _{SED} = Sediment forebay volume	≥ 10%WQV
7,539	cf	V _{PP} = Permanent pool volume (volume below the lowest invert of the outlet structure) Attach stage-storage table.	
no	cf	Extended Detention? ¹	≤ 50% WQV
-		V _{ED} = Volume of extended detention (if "yes" is given in box above)	
		E _{ED} = Elevation of WQV if "yes" is given in box above ²	
-	cfs	2Q _{avg} = 2 * V _{ED} / 24 hrs * (1hr / 3600 sec) (used to check against Q _{EDmax} below)	
	cfs	Q _{EDmax} = Discharge at the E _{ED} (attach stage-discharge table)	< 2Q _{avg}
-	hours	T _{ED} = Drawdown time of extended detention = 2V _{ED} /Q _{EDmax}	≥ 24-nrs
3.00	:1	Pond side slopes	≥ 3:1
113.67	ft	Elevation of seasonal high water table	
111.00	ft	Elevation of lowest pond outlet	
108.00	ft	Max floor = Maximum elevation of pond bottom (ft)	
103.00	ft	Minimum floor (to maintain depth at less than 8')	≤ 8 ft
108.00	ft	Elevation of pond floor ³	≤ Max floor and > Min floor
120.00	ft	Length of the flow path between the inlet and outlet at mid-depth	
40.00	ft	Average width ((average of the top width + average bottom width)/2)	
3.00	:1	Length to average width ratio	≥ 3:1
Y	Yes/No	Is the perimeter curvilinear.	← Yes
Y	Yes/No	Are the inlet and outlet located as far apart as possible.	← Yes
Y	Yes/No	Is there a manually-controlled drain to dewater the pond over a 24hr period?	
If no state why:			
TEE BAFFLE WITH SCREEN		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of <6")?	
116.90	ft	Peak elevation of the 50-year storm event	
118.00	ft	Berm elevation of the pond	
YES		50 peak elevation ≤ the berm elevation?	←yes

1. If the entire WQV is stored in the perm. pool, there is no extended det., and the following five lines do not apply.

2. This is the elevation of WQV if the hydrologic analysis is set up to include the permanent pool storage in the node description.

3. If the pond floor elevation is above the max floor elev., a hydrologic budget must be submitted to demonstrate that a minimum depth of 3 feet can be maintained. (First check whether a revised "lowest pond outlet" elev. will resolve the issue.)

Designer's Notes:

21117-PROP-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

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Printed 8/23/2023

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Stage-Area-Storage for Pond 54F: FOREBAY #10

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
114.00	139	0	116.60	1,082	1,370
114.05	148	7	116.65	1,111	1,425
114.10	158	15	116.70	1,140	1,481
114.15	168	23	116.75	1,169	1,539
114.20	179	32	116.80	1,199	1,598
114.25	189	41	116.85	1,229	1,659
114.30	200	51	116.90	1,260	1,721
114.35	211	61	116.95	1,291	1,785
114.40	223	72	117.00	1,322	1,850
114.45	235	83	117.05	1,354	1,917
114.50	247	95	117.10	1,387	1,985
114.55	260	108	117.15	1,420	2,056
114.60	272	121	117.20	1,454	2,127
114.65	286	135	117.25	1,488	2,201
114.70	299	150	117.30	1,522	2,276
114.75	313	165	117.35	1,557	2,353
114.80	327	181	117.40	1,592	2,432
114.85	341	198	117.45	1,628	2,512
114.90	356	215	117.50	1,663	2,595
114.95	371	233	117.55	1,700	2,679
115.00	386	252	117.60	1,736	2,765
115.05	402	272	117.65	1,773	2,852
115.10	418	292	117.70	1,811	2,942
115.15	435	314	117.75	1,849	3,033
115.20	452	336	117.80	1,887	3,127
115.25	469	359	117.85	1,926	3,222
115.30	487	383	117.90	1,965	3,319
115.35	505	408	117.95	2,004	3,419
115.40	523	433	118.00	2,044	3,520
115.45	541	460			
115.50	560	487			
115.55	580	516			
115.60	599	545			
115.65	619	576			
115.70	639	607			
115.75	660	640			
115.80	680	673			
115.85	702	708			
115.90	723	743			
115.95	745	780			
116.00	767	818			
116.05	791	857			
116.10	816	897			
116.15	841	938			
116.20	866	981			
116.25	892	1,025			
116.30	918	1,070			
116.35	944	1,117			
116.40	971	1,165			
116.45	998	1,214			
116.50	1,026	1,265			
116.55	1,054	1,317			

Lowest Outlet=116.00

10% WQV= 315 cu.ft.

Vol Prov'd= 818 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 10 yr Rainfall=4.82"

Printed 8/23/2023

Stage-Area-Storage for Pond 54P: WET POND #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
108.00	42	0	113.20	1,542	3,307
108.10	51	5	113.30	1,589	3,464
108.20	62	10	113.40	1,636	3,625
108.30	73	17	113.50	1,684	3,791
108.40	85	25	113.60	1,733	3,962
108.50	98	34	113.70	1,782	4,138
108.60	112	44	113.80	1,833	4,319
108.70	127	56	113.90	1,883	4,504
108.80	143	70	114.00	1,935	4,695
108.90	159	85	114.10	1,987	4,891
109.00	177	102	114.20	2,040	5,093
109.10	195	120	114.30	2,093	5,299
109.20	214	141	114.40	2,147	5,511
109.30	234	163	114.50	2,201	5,729
109.40	255	188	114.60	2,257	5,952
109.50	277	214	114.70	2,313	6,180
109.60	300	243	114.80	2,370	6,414
109.70	324	274	114.90	2,427	6,654
109.80	348	308	115.00	2,485	6,900
109.90	374	344	115.10	2,544	7,151
110.00	400	383	115.20	2,603	7,408
110.10	425	424	115.30	2,663	7,672
110.20	451	468	115.40	2,723	7,941
110.30	477	514	115.50	2,784	8,216
110.40	505	563	115.60	2,846	8,498
110.50	533	615	115.70	2,909	8,786
110.60	561	670	115.80	2,972	9,080
110.70	591	727	115.90	3,036	9,380
110.80	621	788	116.00	3,101	9,687
110.90	652	852	116.10	3,166	10,000
111.00	684	918	116.20	3,232	10,320
111.10	716	988	116.30	3,299	10,647
111.20	748	1,062	116.40	3,366	10,980
111.30	781	1,138	116.50	3,434	11,320
111.40	815	1,218	116.60	3,503	11,667
111.50	850	1,301	116.70	3,572	12,020
111.60	885	1,388	116.80	3,642	12,381
111.70	921	1,478	116.90	3,713	12,749
111.80	958	1,572	117.00	3,784	13,124
111.90	996	1,670	117.10	3,856	13,506
112.00	1,034	1,771	117.20	3,928	13,895
112.10	1,073	1,877	117.30	4,002	14,291
112.20	1,112	1,986	117.40	4,075	14,695
112.30	1,152	2,099	117.50	4,150	15,107
112.40	1,192	2,216	117.60	4,225	15,525
112.50	1,234	2,338	117.70	4,301	15,952
112.60	1,276	2,463	117.80	4,378	16,386
112.70	1,319	2,593	117.90	4,455	16,827
112.80	1,362	2,727	118.00	4,533	17,277
112.90	1,406	2,865			
113.00	1,451	3,008			
113.10	1,496	3,155			

Lowest Outlet= 115.25

Vpp = 7,539 cu.ft.



INFILTRATION PRACTICE CRITERIA (Env-Wq 1508.06)

Type/Node Name: **63P- BIOFILTRATION BASIN #6**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Y		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← yes
0.88	ac	A = Area draining to the practice	
0.39	ac	A _i = Impervious area draining to the practice	
0.44	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.45	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.40	ac-in	WQV = 1" x R _v x A	
1,434	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
358	cf	25% x WQV (check calc for sediment forebay volume)	
FOREBAY		Method of pretreatment? (not required for clean or roof runoff)	
565	cf	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
5,260	cf	V = Volume ¹ (attach a stage-storage table)	≥ WQV
1,064	sf	A _{SA} = Surface area of the bottom of the pond	
3.91	iph	K _{sat} _{DESIGN} = Design infiltration rate ²	
4.1	hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	≤ 72-hrs
116.00	feet	E _{BTM} = Elevation of the bottom of the basin	
112.00	feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
	feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
4.00	feet	D _{SHWT} = Separation from SHWT	≥ * ³
116.0	feet	D _{ROCK} = Separation from bedrock	≥ * ³
N	ft	D _{amend} = Depth of amended soil, if applicable due high infiltration rate	≥ 24"
N	ft	D _T = Depth of trench, if trench proposed	4 - 10 ft
N	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←yes
N		If a trench is proposed, does material meet Env-Wq 1508.06(k)(2) requirements. ⁴	← yes
Y	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← yes
3.0	:1	If a basin is proposed, pond side slopes.	≥3:1
117.27	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
118.83	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
120.00	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench? ⁵	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. K_{sat}_{DESIGN} includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

21117-PROP-PHASE-5

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Type III 24-hr 10 yr Rainfall=4.82"

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Stage-Area-Storage for Pond 63F: FOREBAY #8

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
117.00	71	0	119.60	1,072	1,085
117.05	76	4	119.65	1,109	1,140
117.10	82	8	119.70	1,147	1,196
117.15	88	12	119.75	1,185	1,254
117.20	94	16	119.80	1,224	1,315
117.25	100	21	119.85	1,264	1,377
117.30	107	26	119.90	1,304	1,441
117.35	114	32	119.95	1,345	1,507
117.40	120	38	120.00	1,386	1,576
117.45	128	44			
117.50	135	51			
117.55	142	58			
117.60	150	65			
117.65	158	73			
117.70	166	81			
117.75	174	89			
117.80	183	98			
117.85	192	107			
117.90	201	117			
117.95	210	128			
118.00	219	138			
118.05	236	150			
118.10	253	162			
118.15	272	175			
118.20	290	189			
118.25	310	204			
118.30	330	220			
118.35	351	237			
118.40	372	255			
118.45	394	274			
118.50	416	294			
118.55	440	316			
118.60	463	338			
118.65	488	362			
118.70	513	387			
118.75	539	414			
118.80	565	441			
118.85	592	470			
118.90	620	500			
118.95	648	532			
119.00	677	565			
119.05	706	600			
119.10	736	636			
119.15	767	673			
119.20	798	712			
119.25	830	753			
119.30	863	796			
119.35	896	840			
119.40	930	885			
119.45	965	933			
119.50	1,000	982			
119.55	1,036	1,033			

Lowest Outlet=119.00

25% WQV= 358 cu.ft.

Vol Prov'd= 565 cu.ft.

21117-PROP-PHASE-5

Prepared by Jones & Beach Engineers Inc

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Type III 24-hr 50 yr Rainfall=7.41"

Printed 10/11/2023

Stage-Area-Storage for Pond 63P: BIOFILTRATION BASIN #6

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
116.00	1,064	0	118.60	2,647	4,717
116.05	1,088	54	118.65	2,680	4,850
116.10	1,113	109	118.70	2,714	4,985
116.15	1,138	165	118.75	2,749	5,121
116.20	1,163	223	118.80	2,783	5,260
116.25	1,189	281	118.85	2,818	5,400
116.30	1,215	342	118.90	2,853	5,541
116.35	1,241	403	118.95	2,888	5,685
116.40	1,267	466	119.00	2,923	5,830
116.45	1,294	530	119.05	2,959	5,977
116.50	1,321	595	119.10	2,995	6,126
116.55	1,348	662	119.15	3,031	6,277
116.60	1,375	730	119.20	3,067	6,429
116.65	1,403	799	119.25	3,104	6,583
116.70	1,431	870	119.30	3,140	6,740
116.75	1,459	942	119.35	3,177	6,897
116.80	1,488	1,016	119.40	3,214	7,057
116.85	1,517	1,091	119.45	3,251	7,219
116.90	1,546	1,168	119.50	3,289	7,382
116.95	1,575	1,246	119.55	3,327	7,548
117.00	1,605	1,325	119.60	3,365	7,715
117.05	1,635	1,406	119.65	3,403	7,884
117.10	1,665	1,489	119.70	3,441	8,055
117.15	1,696	1,573	119.75	3,480	8,228
117.20	1,727	1,658	119.80	3,519	8,403
117.25	1,758	1,746	119.85	3,558	8,580
117.30	1,789	1,834	119.90	3,597	8,759
117.35	1,821	1,924	119.95	3,636	8,940
117.40	1,853	2,016	120.00	3,676	9,123
117.45	1,885	2,110			
117.50	1,917	2,205			
117.55	1,950	2,301			
117.60	1,983	2,400			
117.65	2,016	2,500			
117.70	2,050	2,601			
117.75	2,084	2,705			
117.80	2,118	2,810			
117.85	2,152	2,916			
117.90	2,187	3,025			
117.95	2,222	3,135			
118.00	2,257	3,247			
118.05	2,288	3,361			
118.10	2,320	3,476			
118.15	2,351	3,593			
118.20	2,383	3,711			
118.25	2,416	3,831			
118.30	2,448	3,953			
118.35	2,480	4,076			
118.40	2,513	4,201			
118.45	2,546	4,327			
118.50	2,579	4,455			
118.55	2,613	4,585			

Lowest Outlet= 118.10

WQV Req'd= 1,434 cu.ft.

WQV Prov'd= 5,260 cu.ft.



21117-PROP-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

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Stage-Area-Storage for Pond 65F: FOREBAY #9

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
118.00	179	0	119.04	493	327
118.02	183	4	119.06	512	337
118.04	188	7	119.08	530	347
118.06	192	11	119.10	549	358
118.08	197	15	119.12	568	369
118.10	201	19	119.14	588	381
118.12	206	23	119.16	608	393
118.14	210	27	119.18	628	405
118.16	215	31	119.20	649	418
118.18	220	36	119.22	670	431
118.20	225	40	119.24	691	445
118.22	229	45	119.26	712	459
118.24	234	49	119.28	734	473
118.26	239	54	119.30	756	488
118.28	244	59	119.32	779	503
118.30	249	64	119.34	802	519
118.32	254	69	119.36	825	535
118.34	259	74	119.38	848	552
118.36	265	79	119.40	872	569
118.38	270	85	119.42	897	587
118.40	275	90	119.44	921	605
118.42	281	96	119.46	946	624
118.44	286	101	119.48	971	643
118.46	291	107	119.50	997	663
118.48	297	113	119.52	1,022	683
118.50	302	119	119.54	1,049	704
118.52	308	125	119.56	1,075	725
118.54	314	131	119.58	1,102	747
118.56	319	138	119.60	1,129	769
118.58	325	144	119.62	1,157	792
118.60	331	151	119.64	1,184	815
118.62	337	157	119.66	1,213	839
118.64	343	164	119.68	1,241	864
118.66	349	171	119.70	1,270	889
118.68	355	178	119.72	1,299	915
118.70	361	185	119.74	1,329	941
118.72	367	193	119.76	1,358	968
118.74	373	200	119.78	1,389	995
118.76	379	207	119.80	1,419	1,023
118.78	386	215	119.82	1,450	1,052
118.80	392	223	119.84	1,481	1,081
118.82	398	231	119.86	1,512	1,111
118.84	405	239	119.88	1,544	1,142
118.86	411	247	119.90	1,576	1,173
118.88	418	255	119.92	1,609	1,205
118.90	424	264	119.94	1,642	1,237
118.92	431	272	119.96		
118.94	438	281	119.98		
118.96	444	290	120.00		
118.98	451	299			
119.00	458	308			
119.02	476	317			

Lowest Outlet=119.00

10% WQV= 151 cu.ft.

Vol Prov'd= 308 cu.ft.

21117-PROP-PHASE-5

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Type III 24-hr 10 yr Rainfall=4.82"

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Stage-Area-Storage for Pond 7C: GW #2 CELL #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
117.00	690	0	117.52	874	406
117.01	693	7	117.53	878	414
117.02	697	14	117.54	881	423
117.03	700	21	117.55	885	432
117.04	703	28	117.56	889	441
117.05	707	35	117.57	893	450
117.06	710	42	117.58	897	459
117.07	713	49	117.59	900	468
117.08	717	56	117.60	904	477
117.09	720	63	117.61	908	486
117.10	724	71	117.62	912	495
117.11	727	78	117.63	916	504
117.12	731	85	117.64	919	513
117.13	734	93	117.65	923	522
117.14	737	100	117.66	927	532
117.15	741	107	117.67	931	541
117.16	744	115	117.68	935	550
117.17	748	122	117.69	939	560
117.18	751	130	117.70	943	569
117.19	755	137	117.71	947	579
117.20	758	145	117.72	950	588
117.21	762	152	117.73	954	598
117.22	765	160	117.74	958	607
117.23	769	168	117.75	962	617
117.24	772	175	117.76	966	626
117.25	776	183	117.77	970	636
117.26	779	191	117.78	974	646
117.27	783	199	117.79	978	656
117.28	786	207	117.80	982	665
117.29	790	214	117.81	986	675
117.30	793	222	117.82	990	685
117.31	797	230	117.83	994	695
117.32	801	238	117.84	998	705
117.33	804	246	117.85	1,002	715
117.34	808	254	117.86	1,006	725
117.35	811	262	117.87	1,010	735
117.36	815	271	117.88	1,014	745
117.37	819	279	117.89	1,018	755
117.38	822	287	117.90	1,022	766
117.39	826	295	117.91	1,026	776
117.40	830	303	117.92	1,030	786
117.41	833	312	117.93	1,034	796
117.42	837	320	117.94	1,038	807
117.43	841	329	117.95	1,042	817
117.44	844	337	117.96	1,047	828
117.45	848	345	117.97	1,051	838
117.46	852	354	117.98	1,055	849
			117.99	1,059	859
			118.00	1,063	870

TOP OF BERM = 118.00

45% WQV Req'd= 679 cu.ft.

WQV Prov'd= 870 cu.ft.

21117-PROP-PHASE-5

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Type III 24-hr 10 yr Rainfall=4.82"

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Stage-Area-Storage for Pond 8C: GW #2 CELL #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
117.00	690	0	117.52	874	406
117.01	693	7	117.53	878	414
117.02	697	14	117.54	881	423
117.03	700	21	117.55	885	432
117.04	703	28	117.56	889	441
117.05	707	35	117.57	893	450
117.06	710	42	117.58	897	459
117.07	713	49	117.59	900	468
117.08	717	56	117.60	904	477
117.09	720	63	117.61	908	486
117.10	724	71	117.62	912	495
117.11	727	78	117.63	916	504
117.12	731	85	117.64	919	513
117.13	734	93	117.65	923	522
117.14	737	100	117.66	927	532
117.15	741	107	117.67	931	541
117.16	744	115	117.68	935	550
117.17	748	122	117.69	939	560
117.18	751	130	117.70	943	569
117.19	755	137	117.71	947	579
117.20	758	145	117.72	950	588
117.21	762	152	117.73	954	598
117.22	765	160	117.74	958	607
117.23	769	168	117.75	962	617
117.24	772	175	117.76	966	626
117.25	776	183	117.77	970	636
117.26	779	191	117.78	974	646
117.27	783	199	117.79	978	656
117.28	786	207	117.80	982	665
117.29	790	214	117.81	986	675
117.30	793	222	117.82	990	685
117.31	797	230	117.83	994	695
117.32	801	238	117.84	998	705
117.33	804	246	117.85	1,002	715
117.34	808	254	117.86	1,006	725
117.35	811	262	117.87	1,010	735
117.36	815	271	117.88	1,014	745
117.37	819	279	117.89	1,018	755
117.38	822	287	117.90	1,022	766
117.39	826	295	117.91	1,026	776
117.40	830	303	117.92	1,030	786
117.41	833	312	117.93	1,034	796
117.42	837	320	117.94	1,038	807
117.43	841	329	117.95	1,042	817
117.44	844	337	117.96	1,047	828
117.45	848	345	117.97	1,051	838
117.46	852	354	117.98	1,055	849
			117.99	1,059	859
			118.00	1,063	870

TOP OF BERM = 118.00

45% WQV Req'd= 679 cu.ft.

WQV Prov'd= 870 cu.ft.

21117-PROP-PHASE-5

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Type III 24-hr 10 yr Rainfall=4.82"

Printed 8/23/2023

Stage-Area-Storage for Pond 65P: GRAVEL WETLAND #2

Elevation (feet)	Discharge (cfs)	Storage (cubic-feet)	Elevation (feet)	Discharge (cfs)	Storage (cubic-feet)
117.00	0.00	0	119.60	6.18	6,256
117.05	0.02	70	119.65	6.84	6,428
117.10	0.02	141	119.70	7.51	6,603
117.15	0.02	215	119.75	8.21	6,780
117.20	0.02	290	119.80	8.93	6,959
117.25	0.02	366	119.85	9.67	7,140
117.30	0.02	445	119.90	10.43	7,323
117.35	0.02	525	119.95	11.21	7,508
117.40	0.02	607	120.00	12.01	7,696
117.45	0.02	691			
117.50	0.02	777			
117.55	0.03	864			
117.60	0.03	954			
117.65	0.03	1,045			
117.70	0.03	1,138			
117.75	0.03	1,234			
117.80	0.03	1,331			
117.85	0.03	1,430			
117.90	0.03	1,531			
117.95	0.04	1,634			
118.00	0.06	1,740			
118.05	0.10	1,853			
118.10	0.14	1,967			
118.15	0.20	2,084			
118.20	0.26	2,202			
118.25	0.33	2,322			
118.30	0.40	2,444			
118.35	0.46	2,567			
118.40	0.51	2,692			
118.45	0.55	2,819			
118.50	0.60	2,948			
118.55	0.63	3,079			
118.60	0.67	3,211			
118.65	0.71	3,345			
118.70	0.74	3,481			
118.75	0.77	3,619			
118.80	0.80	3,759			
118.85	0.83	3,900			
118.90	0.86	4,044			
118.95	0.89	4,189			
119.00	0.91	4,337			
119.05	1.04	4,486			
119.10	1.26	4,637			
119.15	1.54	4,790			
119.20	1.86	4,945			
119.25	2.24	5,102			
119.30	2.67	5,261			
119.35	3.15	5,422			
119.40	3.67	5,585			
119.45	4.23	5,749			
119.50	4.84	5,916			
119.55	5.49	6,085			

WQV= 1,508 cu.ft.

ELEV OF WQV = 117.89

Q @ WQV = 0.03 cfs



BUFFER DESIGN CRITERIA (Env-Wq 1508.09)

Type

DITCH TURNOUT #1

Enter the type of buffer (e.g., residential buffer) and the node name in the drainage analysis, if applicable.

YES	Yes/No	Is the buffer adjacent to the area that you are treating?	← yes
YES	Yes/No	Does the runoff enter the buffer as sheet flow (naturally or with a level spreader?)	
YES	Yes/No	Has a level spreader been provided?	
100.0	%F	% Forest (F) cover in the buffer (remaining assumed to be meadow (M))	
-	%M	% Meadow cover in the buffer	
-	%A	Hydrologic soil group (HSG) <u>in buffer</u> (%A, %B, %C). Remaining assumed to be D soil	
99.2	%B		
0.8	%C		
-	%D		
4.3	%	Buffer slope	≤ 15%

If a Residential or Small Pervious Area Buffer is Proposed:

	Yes/No	Is the runoff from a single family or duplex residential lot?	← yes
		L_{FP} = Maximum flow path to the buffer	
	ac	A = Area draining to the buffer	
	ac	A_{IMP} = Impervious area draining to the buffer	
-	%	I = Percent impervious area draining to the buffer	≤ 10%
FALSE		Option A check: $A_{IMP} \leq 1$ ac & $L_{FP} \leq 100'$	← yes for
FALSE		Option B check: $I \leq 10\%$ & $L_{FP} \leq 150'$	A or B
YES		Level Spreader proposed? (Sheet flow without the aid of a LS)	← no
Good		Slope check	≤ 15%
45	feet	Buffer base length due to soil type (weighted based on HSG)	
9	feet	Buffer length adjustment due to steepness of buffer	
-	feet	Buffer length adjustment due to percent of meadow in buffer	
54	feet	Minimum buffer length required ¹	

If a Developed Area Buffer with a Level Spreader is Proposed:

YES		Is a level spreader proposed?	← yes
	ac	A = Area draining to the buffer ²	
	ac	A_I = Impervious area draining to the buffer ²	
-	%	Percent impervious of the area that is draining to the buffer	
Good		Slope check	≤ 15%
-	sf	Buffer base area due to soil type in the buffer (weighted based on HSG)	
-	sf	Buffer area adjustment due to impervious cover draining to buffer	
-	sf	Buffer area adjustment due to steepness of buffer	
-	sf	Buffer area adjustment due to percent of meadow in buffer	
-	sf	A_{MIN} = Minimum buffer area required	
	ft	L_{LS} = Total length of level spreader(s) provided ³	
	ft	L_B = Buffer length ⁴	
-	sf	A_B = Buffer area provided	≥ A_{MIN}

If a Roadway Buffer is Proposed:

YES	Yes/No	LS proposed? Roadway/shoulder must sheet directly to the buffer.	← no
	Yes/No	Do any other areas drain to the buffer (other than roadway & shoulder)?	← no
	Yes/No	Is the road parallel to the contours of the buffer slope?	← yes
Good		Natural slope check ⁵	≤ 20%
	feet	How much embankment slope counts toward the buffer? ⁶	0 - 20 feet
	Lane(s)	Number of travel lanes draining to the buffer	
20.0		Minimum buffer flow path (L_{MIN})	
	feet	Buffer flow path	≥ L_{MIN}

If a Ditch Turn Out Buffer is Proposed:

YES		Level spreader proposed?	← yes
50.0	feet	Level spreader length ⁷	
NO	Yes/No	Do any other areas drain to the buffer (other than roadway & shoulder)?	← no
3,799	sf	Drainage area to the ditch	≤ 6000 sf
Good		Slope check	≤ 15%
31	feet	Buffer base length due to soil type (weighted based on HSG)	
9	feet	Buffer length adjustment due to steepness of buffer	
-	feet	Buffer length adjustment due to percent of meadow in buffer	
50	feet	Minimum buffer length required ⁸	

1. Minimum buffer length is the total of the above three cells OR 45', whichever is greater.
2. If a detention structure is used upstream of the level spreader, the drainage area draining to the buffer shall considered equal to 1 acre of impervious area for every 1 cfs of peak 2-year, 24-hr outflow from the detention structure.
3. Minimum level spreader length is 20 feet and maximum is 50 feet. You may use multiple level spreaders if the stormwater is evenly distributed to them.
Example: $A_{MIN} = 6,000$ sf with a 100' buffer available. Therefore the LS lengths must total 60 feet (6,000 sf/ 100'); however LS lengths must be between 20' and 50' so one 60' long level spreader is not permitted. The design would have two LS, each 30'. As long as a collection basin is provided to evenly distribute the flow to the two level spreaders.
4. Minimum buffer length 50 feet.
5. If the slope is man-made, it must be 15% or flatter.
6. 20' (max) of the roadway embankment slope may count towards the buffer length if it is 3:1 or flatter.
7. Minimum level spreader length is 20 feet and maximum is 50 feet. You may use multiple level spreaders if the stormwater is evenly distributed to them. For example, you may have a total length of 100 feet for the level spreaders as long as you have two 50' level spreaders.
8. Minimum buffer length is the total of the above three cells OR 50', whichever is greater.

Designer's Notes:



BUFFER DESIGN CRITERIA (Env-Wq 1508.09)

Type

DITCH TURNOUT #2

Enter the type of buffer (e.g., residential buffer) and the node name in the drainage analysis, if applicable.

YES	Yes/No	Is the buffer adjacent to the area that you are treating?	← yes
YES	Yes/No	Does the runoff enter the buffer as sheet flow (naturally or with a level spreader?)	
YES	Yes/No	Has a level spreader been provided?	
100.0	%F	% Forest (F) cover in the buffer (remaining assumed to be meadow (M))	
-	%M	% Meadow cover in the buffer	
-	%A	Hydrologic soil group (HSG) <u>in buffer</u> (%A, %B, %C). Remaining assumed to be D soil	
86.5	%B		
13.5	%C		
-	%D		
3.9	%	Buffer slope	≤ 15%

If a Residential or Small Pervious Area Buffer is Proposed:

	Yes/No	Is the runoff from a single family or duplex residential lot?	← yes
		L_{FP} = Maximum flow path to the buffer	
	ac	A = Area draining to the buffer	
	ac	A_{IMP} = Impervious area draining to the buffer	
-	%	I = Percent impervious area draining to the buffer	≤ 10%
FALSE		Option A check: $A_{IMP} \leq 1$ ac & $L_{FP} \leq 100'$	← yes for
FALSE		Option B check: $I \leq 10\%$ & $L_{FP} \leq 150'$	A or B
YES		Level Spreader proposed? (Sheet flow without the aid of a LS)	← no
Good		Slope check	≤ 15%
47	feet	Buffer base length due to soil type (weighted based on HSG)	
8	feet	Buffer length adjustment due to steepness of buffer	
-	feet	Buffer length adjustment due to percent of meadow in buffer	
55	feet	Minimum buffer length required ¹	

If a Developed Area Buffer with a Level Spreader is Proposed:

YES		Is a level spreader proposed?	← yes
	ac	A = Area draining to the buffer ²	
	ac	A_I = Impervious area draining to the buffer ²	
-	%	Percent impervious of the area that is draining to the buffer	
Good		Slope check	≤ 15%
-	sf	Buffer base area due to soil type in the buffer (weighted based on HSG)	
-	sf	Buffer area adjustment due to impervious cover draining to buffer	
-	sf	Buffer area adjustment due to steepness of buffer	
-	sf	Buffer area adjustment due to percent of meadow in buffer	
-	sf	A_{MIN} = Minimum buffer area required	
	ft	L_{LS} = Total length of level spreader(s) provided ³	
	ft	L_B = Buffer length ⁴	
-	sf	A_B = Buffer area provided	≥ A_{MIN}

If a Roadway Buffer is Proposed:

YES	Yes/No	LS proposed? Roadway/shoulder must sheet directly to the buffer.	← no
	Yes/No	Do any other areas drain to the buffer (other than roadway & shoulder)?	← no
	Yes/No	Is the road parallel to the contours of the buffer slope?	← yes
Good		Natural slope check ⁵	≤ 20%
	feet	How much embankment slope counts toward the buffer? ⁶	0 - 20 feet
	Lane(s)	Number of travel lanes draining to the buffer	
20.0		Minimum buffer flow path (L_{MIN})	
	feet	Buffer flow path	≥ L_{MIN}

If a Ditch Turn Out Buffer is Proposed:

YES		Level spreader proposed?	← yes
50.0	feet	Level spreader length ⁷	
NO	Yes/No	Do any other areas drain to the buffer (other than roadway & shoulder)?	← no
3,791	sf	Drainage area to the ditch	≤ 6000 sf
Good		Slope check	≤ 15%
34	feet	Buffer base length due to soil type (weighted based on HSG)	
8	feet	Buffer length adjustment due to steepness of buffer	
-	feet	Buffer length adjustment due to percent of meadow in buffer	
50	feet	Minimum buffer length required ⁸	

1. Minimum buffer length is the total of the above three cells OR 45', whichever is greater.
2. If a detention structure is used upstream of the level spreader, the drainage area draining to the buffer shall considered equal to 1 acre of impervious area for every 1 cfs of peak 2-year, 24-hr outflow from the detention structure.
3. Minimum level spreader length is 20 feet and maximum is 50 feet. You may use multiple level spreaders if the stormwater is evenly distributed to them.
Example: $A_{MIN} = 6,000$ sf with a 100' buffer available. Therefore the LS lengths must total 60 feet (6,000 sf/ 100'); however LS lengths must be between 20' and 50' so one 60' long level spreader is not permitted. The design would have two LS, each 30'. As long as a collection basin is provided to evenly distribute the flow to the two level spreaders.
4. Minimum buffer length 50 feet.
5. If the slope is man-made, it must be 15% or flatter.
6. 20' (max) of the roadway embankment slope may count towards the buffer length if it is 3:1 or flatter.
7. Minimum level spreader length is 20 feet and maximum is 50 feet. You may use multiple level spreaders if the stormwater is evenly distributed to them. For example, you may have a total length of 100 feet for the level spreaders as long as you have two 50' level spreaders.
8. Minimum buffer length is the total of the above three cells OR 50', whichever is greater.

Designer's Notes:

14. DRAINAGE ANALYSIS

14.1 INTRODUCTION

The purpose of this project is to construct 2 roads (Puzzle Lane and Coleman Place), 9 residential buildings containing 44 units. The proposed development will contain associated grading, drainage, parking, and utilities.

14.2 METHODOLOGY

The existing and proposed watersheds were modeled utilizing HydroCad stormwater software, version 9.10. The watersheds were analyzed utilizing the SCS TR-20 methodology for hydrograph development and the TR-55 methodology for Time of Concentration (Tc) determination. The Dynamic-Storage-Indicating method for reach and pond routing was utilized. Type III, 24-hour hydrographs were developed for the 2-year, 10-year, 25-year, and 50-year storm events, corresponding to rainfall events of 3.15", 4.82", 6.16" and 7.41" respectively.

Existing topography and site features were obtained through aerial topography. Existing soil conditions were derived from a combination of Site-Specific Soil Survey conducted by Ferwerda Mapping LLC, and soils information obtained from the NRCS Web Soil Survey.

14.3 EXISTING CONDITIONS ANALYSIS

The study area consists of the subject property and upstream contributing area. The study area contains 236 acres including offsite contributing areas. The existing site is currently undeveloped but phase 2 construction is expected to be completed prior to phase 5 development. A large portion of the study area is wooded, tall grass, or features dense brush. There is a gravel access drive and pad central to the study area. The site is abutted to the north and west by residential developments. To the north and east, the site is abutted by an industrial development. Stormwater generated from the study area drains to five points which are described below.

The majority of the soils for this site are described as Hydrological Soils "A" and Hydrological Soils "B". There are smaller sections of soils that are described as Hydrological Soils "C" and Hydrological Soils "D" throughout the study area.

Five (5) Analysis Points (AP's) were defined for this project. Analysis Points are described as below:

Analysis Point #1 is defined as an existing low point to the east of the subject parcel to which portions of the wetland system central to the site drains to. Stormwater breaks at a high point along the existing gravel drive and drains to the wetland system. The wetland area north of the existing gravel drive drains to this point

Analysis Point #2 is defined as an existing low point to the south of the subject parcel to which portions of the wetland system central to the site drains to. Stormwater breaks at a high point along the existing gravel drive and drains to the wetland system. The wetland area south of the existing gravel drive drains to this point.

Analysis Point #3 is defined as an existing low point to the east of the subject parcel to which a portion of study area at the eastern edge drains to.

Analysis Point #4 is defined as an existing wetland system to the north of the proposed residential development.

Analysis Point #5 is defined as an existing wetland system that a small portion of the study area on lot 2 drains to.

14.4 PROPOSED CONDITIONS ANALYSIS

The proposed development will feature 2 roads (Puzzle Lane and Coleman Place), 9 residential buildings containing 44 units, and associated grading, drainage, parking, and utilities.

The addition of the proposed impervious paved areas and buildings causes an increase in the curve number (C_n) and a decrease in the time of concentration (T_c), the net result being a potential increase in peak rates of runoff from the site. To mitigate the potential increase in the peak rate of runoff and to effectively treat the subsequent stormwater runoff the following Best Management Practices (BMP's) have been employed at the Analysis Points as follows:

The area associated with Phase 1 and 2 of the development remains unchanged with the exception of the regrading of Gravel Wetland #1.

Phase 2 development ends and Phase 5 development begins at Puzzle Lane station 10+15. The roadway is crowned and a cape cod berm lines both sides of puzzle lane from station 10+15 to 19+30. To the south between 10+15 and 19+30, the curbing directs stormwater to P-338. This drains to P-212 which conveys stormwater to Forebay #7. The north side of the roadway between these stations drains directly to Forebay #7. Gravel Wetland #7, part of phase 2 of the development, is resized to treat the additional stormwater of the phase 5 development. Gravel wetland #1 is released by outlet structure #7 and stormwater flows overland to AP#1.

A high point at Puzzle Lane Station 25+25 breaks stormwater. Between station 19+30 and 25+25 the road is crowned and ditches line both sides. The southern ditch directs stormwater to CB-111. CB-111 drains to P-225 which conveys stormwater to Forebay #8. The northern ditch line conveys stormwater directly to Forebay #8. Forebay #8 flows to Biofiltration Basin #6. Biofiltration Basin #6 is released by Outlet Structure #8 and stormwater is released via P-226. From here, stormwater flows overland to AP #1.

Between Puzzle Lane station 25+25 and 30+75 the eastern ditch directs stormwater to P-227 which conveys stormwater to the western ditch line at 32+00. The western ditch line between puzzle lane station 25+25 to 35+00 drains directly to Forebay #9. Forebay #9 overflows to Gravel Wetland #2. Gravel Wetland #2 is released by Outlet Structure #14 and stormwater is released by P-234. From here, stormwater flows overland to P-239. The borrow area sedimentation basins #1 and #2 are to remain for the duration of the phase 5 development. These ponds flow overland to P-239 which conveys stormwater under puzzle lane. The stormwater then flows overland to AP #1.

Between Puzzle Lane 31+00 and 41+00, the southeastern ditch line drains directly to Forebay #10. . Between stations 34+00 and 39+80, the southern side of the road drains directly to Forebay #10. The western ditch drains to CB-112. CB-112 collects stormwater generated from a portion of Coleman

Place. CB-112 flows via P-228 to CB-113. CB-113 collects stormwater generated from a portion of the crowned driveway near building #8 and #9. CB-113 flows via P-229 to Forebay #10. Forebay #10 flows to Wet Pond #2. Wet Pond #2 is released by Outlet Structure #9 and stormwater is discharged via P-230. From here, stormwater flows overland to AP #1.

Coleman Place is crowned and stormwater is directed to the rear of the proposed buildings for treatment. The western side of the roadway after station 2+20 flows overland to a swale at the rear of the buildings. The swale conveys stormwater to Forebay #11. Forebay #11 flows to Biofiltration Basin #7. Biofiltration Basin #7 is released by Outlet Structure #10 and stormwater is discharged via P-231. From this point, stormwater flows overland to AP #4.

Stormwater generated from the eastern side of Coleman Place flows overland to the swales at the rear of the proposed buildings. Additionally, stormwater generated from the north side of the building 8/9 driveway flows overland to the swale at the rear of the buildings. The swales convey stormwater to Forebay #12. Forebay #12 flows to Wet Pond #3. Wet Pond #3 is released by Outlet Structure #12 and stormwater is discharged via P-233. From here, stormwater flows overland to AP #4.

Between the high points at Puzzle Lane stations 42+65 and 46+00, curbing directs stormwater to ditch turnouts with associated buffers on both sides. Ditch Turnout #1 flows overland to AP #4. Ditch Turnout #2 flows overland to AP #1.

From Puzzle Lane station 46+90, the curbing directs stormwater to swales that follow both sides of the road. The swale to the north directs stormwater to P-235 which conveys stormwater to Forebay #14. The southern ditch line drains directly to Forebay #14. Forebay #14 flows to Gravel Wetland #3. Gravel Wetland #3 is released by Outlet Structure #13 and stormwater is discharged via P-236. From this point, stormwater flows overland to AP #1.

A portion of stormwater upgradient of the proposed development is conveyed under the proposed roadway by P-237. From here, stormwater flows overland to AP #1.

The area contributing to AP #5 has been reduced as a result of the proposed grading.

The areas contributing to AP #2 and AP #3 remain mostly unchanged.

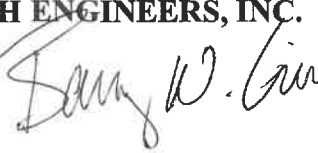
14.5 CONCLUSION

This proposed site development will have minimal adverse effect on abutting infrastructures or properties by way of stormwater runoff or siltation if properly constructed in accordance with this Drainage Analysis and approved project plan set. The post-construction peak rates of runoff for the site have been maintained to existing conditions to the best extent practicable. Appropriate steps will be taken to control erosion and sedimentation; these will be accomplished through the construction of a drainage system consisting of site grading, curbing, catch basins with sedimentation sumps, vegetated swales, detention ponds, and riprap outlet protection aprons. The use of Best Management Practices developed by the State of New Hampshire have been utilized in the design of this system and their application will be enforced with regular inspections throughout the construction process.

An NHDES Alteration of Terrain Permit (RSA 485:A-17) is required for this site plan due to the area of disturbance being greater than 100,000 square-feet.

Respectfully Submitted,
JONES & BEACH ENGINEERS, INC.

Barry W. Gier, PE
Vice-President

A handwritten signature in black ink, appearing to read "Barry W. Gier", is written over the printed name and title.

14.6 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT CONDITIONS ANALYSIS

- 14.6.1 2-Year 24-Hour Summary Analysis
- 14.6.2 10-Year 24-Hour Complete Analysis
- 14.6.3 25-Year 24-Hour Summary Analysis
- 14.6.4 50-Year 24-Hour Summary Analysis



GRAVEL WETLAND DESIGN CRITERIA (Env-Wq 1508.05)

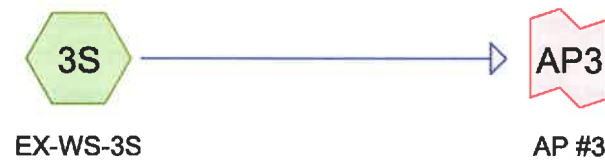
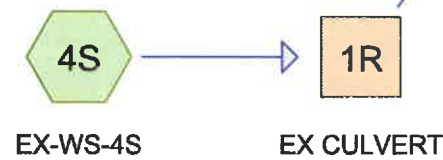
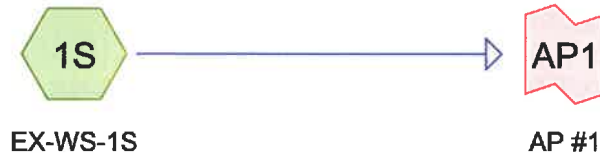
Type/Node Name: 34P- GRAVEL WETLAND #3

Enter the node name in the drainage analysis if applicable.

0.81	ac	A = Area draining to the practice	
0.42	ac	A _I = Impervious area draining to the practice	
0.51	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.51	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.41	ac-in	WQV = 1" x R _v x A	
1,504	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
150	cf	10% x WQV (check calc for sediment forebay)	
677	cf	45% x WQV (check calc for gravel wetland treatment bay volume)	
695	cf	V _{SED} = Sediment forebay volume	≥ 10%WQV
904	cf	V _{TB1} = Volume of treatment bay 1 ¹	≥ 45%WQV
904	cf	V _{TB2} = Volume of treatment bay 2 ⁴	≥ 45%WQV
0.03	cfs	2Q _{avg} = 2* WQV / 24 hrs * (1hr / 3600 sec) ⁶	
114.86	ft	E _{WQV} = Elevation of WQV (attach stage-storage table)	
0.03	cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)	< 2Q _{avg}
27.85	hours	T _{ED} = Drawdown time of extended detention = 2WQV/Q _{WQV}	≥ 24-hrs
3.00	:1	Pond side slopes	≥ 3:1
117.70	ft	Elevation of SHWT	
115.70	ft	SHWT - 2 feet	
114.00	ft	E _{pp} = Elevation of the permanent pool (elevation of lowest orifice) ³	≤ E _{SHWT} - 2 ft
100.00	ft	Length of the flow path between the inlet and outlet in each cell	≥ 15 ft
TEE BAFFLE W/ SCREEN		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of ≤6")?	
115.89	ft	Peak elevation of the 50-year storm event (E ₅₀)	
117.00	ft	Berm elevation of the pond	
YES		E ₅₀ ≤ the berm elevation?	← yes
Qualified professional that developed the planting plan Name, Profession:			

1. Volume stored above the wetland soil and below the high flow by-pass.
2. To ensure orifice is sized so that WQV is released at a relatively stable rate.
3. 4" to 8" below the wetland soil. If lowest orifice is higher than (SHWT - 2 feet), and saturated hydraulic conductivity (K_{sat}) is greater than 0.015 in/hr, the system must be lined.

Designer's Notes:



21117-EX-DRAINAGE-PHASE-5

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
755,337	46	2 acre lots, 12% imp, HSG A (1S, 3S)
231,497	65	2 acre lots, 12% imp, HSG B (1S, 3S)
59,544	68	<50% Grass cover, Poor, HSG A (4S)
229,092	39	>75% Grass cover, Good, HSG A (2S, 3S, 5S, 6S)
139,057	61	>75% Grass cover, Good, HSG B (1S, 2S, 3S, 5S, 6S)
5,574	74	>75% Grass cover, Good, HSG C (1S)
200,500	96	Gravel surface, HSG A (1S, 2S, 3S, 4S)
41,965	96	Gravel surface, HSG B (1S, 2S, 5S, 6S)
11,243	98	Roofs, HSG A (3S, 4S)
801,142	81	Urban industrial, 72% imp, HSG A (1S)
92,901	88	Urban industrial, 72% imp, HSG B (1S)
2,679,619	30	Woods, Good, HSG A (1S, 2S, 3S, 5S, 6S)
4,810,684	55	Woods, Good, HSG B (1S, 2S, 3S, 5S, 6S)
203,794	77	Woods, Good, HSG D (2S)
10,261,949	52	TOTAL AREA

21117-EX-DRAINAGE-PHASE-5

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
4,736,477	HSG A	1S, 2S, 3S, 4S, 5S, 6S
5,316,104	HSG B	1S, 2S, 3S, 5S, 6S
5,574	HSG C	1S
203,794	HSG D	2S
0	Other	
10,261,949		TOTAL AREA

21117-EX-DRAINAGE-PHASE-5

Type III 24-hr 2 yr Rainfall=3.15"

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: EX-WS-1S Runoff Area=6,477,544 sf 10.86% Impervious Runoff Depth>0.14"
 Flow Length=4,310' Tc=154.2 min CN=52 Runoff=3.07 cfs 77,953 cf

Subcatchment2S: EX-WS-2S Runoff Area=1,678,138 sf 0.00% Impervious Runoff Depth>0.15"
 Flow Length=1,350' Tc=79.3 min CN=52 Runoff=0.92 cfs 21,437 cf

Subcatchment3S: EX-WS-3S Runoff Area=1,505,087 sf 4.20% Impervious Runoff Depth>0.06"
 Flow Length=1,550' Tc=55.6 min CN=47 Runoff=0.30 cfs 7,831 cf

Subcatchment4S: EX-WS-4S Runoff Area=105,716 sf 6.12% Impervious Runoff Depth>1.36"
 Flow Length=536' Tc=18.5 min CN=80 Runoff=2.65 cfs 11,965 cf

Subcatchment5S: EX-WS-5S Runoff Area=426,209 sf 0.00% Impervious Runoff Depth>0.13"
 Flow Length=1,250' Tc=54.8 min CN=51 Runoff=0.20 cfs 4,769 cf

Subcatchment6S: EX-WS-6S Runoff Area=69,255 sf 0.00% Impervious Runoff Depth>0.12"
 Flow Length=235' Tc=27.8 min CN=50 Runoff=0.03 cfs 672 cf

Reach 1R: EX CULVERT Avg. Flow Depth=0.53' Max Vel=5.30 fps Inflow=2.65 cfs 11,965 cf
 15.0" Round Pipe n=0.012 L=60.0' S=0.0100 'f' Capacity=7.00 cfs Outflow=2.65 cfs 11,963 cf

Link AP1: AP #1 Inflow=3.07 cfs 77,953 cf
 Primary=3.07 cfs 77,953 cf

Link AP2: AP #2 Inflow=2.65 cfs 33,400 cf
 Primary=2.65 cfs 33,400 cf

Link AP3: AP #3 Inflow=0.30 cfs 7,831 cf
 Primary=0.30 cfs 7,831 cf

Link AP4: AP #4 Inflow=0.20 cfs 4,769 cf
 Primary=0.20 cfs 4,769 cf

Link AP5: AP #5 Inflow=0.03 cfs 672 cf
 Primary=0.03 cfs 672 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 124,627 cf Average Runoff Depth = 0.15"
92.46% Pervious = 9,488,575 sf 7.54% Impervious = 773,374 sf

21117-EX-DRAINAGE-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: EX-WS-1S Runoff Area=6,477,544 sf 10.86% Impervious Runoff Depth>0.68"
Flow Length=4,310' Tc=154.2 min CN=52 Runoff=19.93 cfs 364,932 cf

Subcatchment2S: EX-WS-2S Runoff Area=1,678,138 sf 0.00% Impervious Runoff Depth>0.70"
Flow Length=1,350' Tc=79.3 min CN=52 Runoff=7.76 cfs 98,126 cf

Subcatchment3S: EX-WS-3S Runoff Area=1,505,087 sf 4.20% Impervious Runoff Depth>0.46"
Flow Length=1,550' Tc=55.6 min CN=47 Runoff=4.41 cfs 58,073 cf

Subcatchment4S: EX-WS-4S Runoff Area=105,716 sf 6.12% Impervious Runoff Depth>2.73"
Flow Length=536' Tc=18.5 min CN=80 Runoff=5.41 cfs 24,024 cf

Subcatchment5S: EX-WS-5S Runoff Area=426,209 sf 0.00% Impervious Runoff Depth>0.66"
Flow Length=1,250' Tc=54.8 min CN=51 Runoff=2.19 cfs 23,338 cf

Subcatchment6S: EX-WS-6S Runoff Area=69,255 sf 0.00% Impervious Runoff Depth>0.61"
Flow Length=235' Tc=27.8 min CN=50 Runoff=0.44 cfs 3,541 cf

Reach 1R: EX CULVERT Avg. Flow Depth=0.82' Max Vel=6.29 fps Inflow=5.41 cfs 24,024 cf
15.0" Round Pipe n=0.012 L=60.0' S=0.0100 ' Capacity=7.00 cfs Outflow=5.41 cfs 24,021 cf

Link AP1: AP #1 Inflow=19.93 cfs 364,932 cf
Primary=19.93 cfs 364,932 cf

Link AP2: AP #2 Inflow=8.49 cfs 122,147 cf
Primary=8.49 cfs 122,147 cf

Link AP3: AP #3 Inflow=4.41 cfs 58,073 cf
Primary=4.41 cfs 58,073 cf

Link AP4: AP #4 Inflow=2.19 cfs 23,338 cf
Primary=2.19 cfs 23,338 cf

Link AP5: AP #5 Inflow=0.44 cfs 3,541 cf
Primary=0.44 cfs 3,541 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 572,034 cf Average Runoff Depth = 0.67"
92.46% Pervious = 9,488,575 sf 7.54% Impervious = 773,374 sf

21117-EX-DRAINAGE-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 1S: EX-WS-1S

Runoff = 19.93 cfs @ 14.55 hrs, Volume= 364,932 cf, Depth> 0.68"

Routed to Link AP1 : AP #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
0	39	>75% Grass cover, Good, HSG A
25,383	96	Gravel surface, HSG A
475,931	46	2 acre lots, 12% imp, HSG A
801,142	81	Urban industrial, 72% imp, HSG A
1,610,612	30	Woods, Good, HSG A
51,019	61	>75% Grass cover, Good, HSG B
20,937	96	Gravel surface, HSG B
23,937	65	2 acre lots, 12% imp, HSG B
92,901	88	Urban industrial, 72% imp, HSG B
3,370,108	55	Woods, Good, HSG B
5,574	74	>75% Grass cover, Good, HSG C
6,477,544	52	Weighted Average
5,773,849		89.14% Pervious Area
703,695		10.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0730	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.93"
33.7	1,010	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
43.8	1,300	0.0050	0.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
63.3	1,900	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
154.2	4,310	Total			

Summary for Subcatchment 2S: EX-WS-2S

Runoff = 7.76 cfs @ 13.30 hrs, Volume= 98,126 cf, Depth> 0.70"

Routed to Link AP2 : AP #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

21117-EX-DRAINAGE-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
4,321	39	>75% Grass cover, Good, HSG A
64,913	96	Gravel surface, HSG A
508,805	30	Woods, Good, HSG A
16,363	61	>75% Grass cover, Good, HSG B
9,618	96	Gravel surface, HSG B
870,324	55	Woods, Good, HSG B
203,794	77	Woods, Good, HSG D
1,678,138	52	Weighted Average
1,678,138		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	100	0.0067	0.07		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
6.5	225	0.0067	0.57		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.3	400	0.0067	0.41		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
33.4	625	0.0039	0.31		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
79.3	1,350	Total			

Summary for Subcatchment 3S: EX-WS-3S

Runoff = 4.41 cfs @ 13.03 hrs, Volume= 58,073 cf, Depth> 0.46"
Routed to Link AP3 : AP #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
4,773	98	Roofs, HSG A
181,332	39	>75% Grass cover, Good, HSG A
70,502	96	Gravel surface, HSG A
279,406	46	2 acre lots, 12% imp, HSG A
468,906	30	Woods, Good, HSG A
30,696	61	>75% Grass cover, Good, HSG B
207,560	65	2 acre lots, 12% imp, HSG B
261,912	55	Woods, Good, HSG B
1,505,087	47	Weighted Average
1,441,878		95.80% Pervious Area
63,209		4.20% Impervious Area

21117-EX-DRAINAGE-PHASE-5

Type III 24-hr 10 yr Rainfall=4.82"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0177	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
22.7	1,000	0.0110	0.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.2	450	0.0076	0.44		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
55.6	1,550	Total			

Summary for Subcatchment 4S: EX-WS-4S

Runoff = 5.41 cfs @ 12.26 hrs, Volume= 24,024 cf, Depth> 2.73"
Routed to Reach 1R : EX CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
6,470	98	Roofs, HSG A
59,544	68	<50% Grass cover, Poor, HSG A
39,702	96	Gravel surface, HSG A
105,716	80	Weighted Average
99,246		93.88% Pervious Area
6,470		6.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	100	0.0241	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
3.2	211	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.5	225	0.1221	2.45		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.5	536	Total			

Summary for Subcatchment 5S: EX-WS-5S

Runoff = 2.19 cfs @ 12.94 hrs, Volume= 23,338 cf, Depth> 0.66"
Routed to Link AP4 : AP #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
40,449	39	>75% Grass cover, Good, HSG A
0	46	2 acre lots, 12% imp, HSG A
73,834	30	Woods, Good, HSG A
39,228	61	>75% Grass cover, Good, HSG B
8,398	96	Gravel surface, HSG B
264,300	55	Woods, Good, HSG B
426,209	51	Weighted Average
426,209		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0390	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.93"
9.3	550	0.0390	0.99		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.3	600	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
54.8	1,250	Total			

Summary for Subcatchment 6S: EX-WS-6S

Runoff = 0.44 cfs @ 12.55 hrs, Volume= 3,541 cf, Depth> 0.61"
 Routed to Link AP5 : AP #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
2,990	39	>75% Grass cover, Good, HSG A
17,462	30	Woods, Good, HSG A
1,751	61	>75% Grass cover, Good, HSG B
3,012	96	Gravel surface, HSG B
44,040	55	Woods, Good, HSG B
69,255	50	Weighted Average
69,255		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.93"
5.4	135	0.0070	0.42		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
27.8	235	Total			

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Reach 1R: EX CULVERT

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 105,716 sf, 6.12% Impervious, Inflow Depth > 2.73" for 10 yr event
Inflow = 5.41 cfs @ 12.26 hrs, Volume= 24,024 cf
Outflow = 5.41 cfs @ 12.26 hrs, Volume= 24,021 cf, Atten= 0%, Lag= 0.1 min
Routed to Link AP2 : AP #2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.29 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.62 fps, Avg. Travel Time= 0.4 min

Peak Storage= 52 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.82', Surface Width= 1.18'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 60.0' Slope= 0.0100 '/'
Inlet Invert= 114.25', Outlet Invert= 113.65'



Summary for Link AP1: AP #1

Inflow Area = 6,477,544 sf, 10.86% Impervious, Inflow Depth > 0.68" for 10 yr event
Inflow = 19.93 cfs @ 14.55 hrs, Volume= 364,932 cf
Primary = 19.93 cfs @ 14.55 hrs, Volume= 364,932 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP2: AP #2

Inflow Area = 1,783,854 sf, 0.36% Impervious, Inflow Depth > 0.82" for 10 yr event
Inflow = 8.49 cfs @ 13.29 hrs, Volume= 122,147 cf
Primary = 8.49 cfs @ 13.29 hrs, Volume= 122,147 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP3: AP #3

Inflow Area = 1,505,087 sf, 4.20% Impervious, Inflow Depth > 0.46" for 10 yr event
Inflow = 4.41 cfs @ 13.03 hrs, Volume= 58,073 cf
Primary = 4.41 cfs @ 13.03 hrs, Volume= 58,073 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP4: AP #4

Inflow Area = 426,209 sf, 0.00% Impervious, Inflow Depth > 0.66" for 10 yr event
Inflow = 2.19 cfs @ 12.94 hrs, Volume= 23,338 cf
Primary = 2.19 cfs @ 12.94 hrs, Volume= 23,338 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP5: AP #5

Inflow Area = 69,255 sf, 0.00% Impervious, Inflow Depth > 0.61" for 10 yr event
Inflow = 0.44 cfs @ 12.55 hrs, Volume= 3,541 cf
Primary = 0.44 cfs @ 12.55 hrs, Volume= 3,541 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

21117-EX-DRAINAGE-PHASE-5

Type III 24-hr 25 yr Rainfall=6.16"

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: EX-WS-1S Runoff Area=6,477,544 sf 10.86% Impervious Runoff Depth>1.30"
Flow Length=4,310' Tc=154.2 min CN=52 Runoff=42.51 cfs 699,525 cf

Subcatchment2S: EX-WS-2S Runoff Area=1,678,138 sf 0.00% Impervious Runoff Depth>1.34"
Flow Length=1,350' Tc=79.3 min CN=52 Runoff=17.24 cfs 186,994 cf

Subcatchment3S: EX-WS-3S Runoff Area=1,505,087 sf 4.20% Impervious Runoff Depth>0.98"
Flow Length=1,550' Tc=55.6 min CN=47 Runoff=12.45 cfs 123,351 cf

Subcatchment4S: EX-WS-4S Runoff Area=105,716 sf 6.12% Impervious Runoff Depth>3.91"
Flow Length=536' Tc=18.5 min CN=80 Runoff=7.73 cfs 34,475 cf

Subcatchment5S: EX-WS-5S Runoff Area=426,209 sf 0.00% Impervious Runoff Depth>1.27"
Flow Length=1,250' Tc=54.8 min CN=51 Runoff=5.12 cfs 45,238 cf

Subcatchment6S: EX-WS-6S Runoff Area=69,255 sf 0.00% Impervious Runoff Depth>1.21"
Flow Length=235' Tc=27.8 min CN=50 Runoff=1.08 cfs 6,990 cf

Reach 1R: EX CULVERT Avg. Flow Depth=1.25' Max Vel=6.49 fps Inflow=7.73 cfs 34,475 cf
15.0" Round Pipe n=0.012 L=60.0' S=0.0100 'l' Capacity=7.00 cfs Outflow=7.37 cfs 34,471 cf

Link AP1: AP #1 Inflow=42.51 cfs 699,525 cf
Primary=42.51 cfs 699,525 cf

Link AP2: AP #2 Inflow=18.34 cfs 221,465 cf
Primary=18.34 cfs 221,465 cf

Link AP3: AP #3 Inflow=12.45 cfs 123,351 cf
Primary=12.45 cfs 123,351 cf

Link AP4: AP #4 Inflow=5.12 cfs 45,238 cf
Primary=5.12 cfs 45,238 cf

Link AP5: AP #5 Inflow=1.08 cfs 6,990 cf
Primary=1.08 cfs 6,990 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 1,096,572 cf Average Runoff Depth = 1.28"
92.46% Pervious = 9,488,575 sf 7.54% Impervious = 773,374 sf

21117-EX-DRAINAGE-PHASE-5

Type III 24-hr 50 yr Rainfall=7.41"

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment1S: EX-WS-1S Runoff Area=6,477,544 sf 10.86% Impervious Runoff Depth>1.99"
Flow Length=4,310' Tc=154.2 min CN=52 Runoff=68.97 cfs 1,071,561 cf

Subcatchment2S: EX-WS-2S Runoff Area=1,678,138 sf 0.00% Impervious Runoff Depth>2.04"
Flow Length=1,350' Tc=79.3 min CN=52 Runoff=28.26 cfs 285,551 cf

Subcatchment3S: EX-WS-3S Runoff Area=1,505,087 sf 4.20% Impervious Runoff Depth>1.59"
Flow Length=1,550' Tc=55.6 min CN=47 Runoff=22.64 cfs 199,109 cf

Subcatchment4S: EX-WS-4S Runoff Area=105,716 sf 6.12% Impervious Runoff Depth>5.06"
Flow Length=536' Tc=18.5 min CN=80 Runoff=9.94 cfs 44,564 cf

Subcatchment5S: EX-WS-5S Runoff Area=426,209 sf 0.00% Impervious Runoff Depth>1.96"
Flow Length=1,250' Tc=54.8 min CN=51 Runoff=8.53 cfs 69,707 cf

Subcatchment6S: EX-WS-6S Runoff Area=69,255 sf 0.00% Impervious Runoff Depth>1.88"
Flow Length=235' Tc=27.8 min CN=50 Runoff=1.84 cfs 10,873 cf

Reach 1R: EX CULVERT Avg. Flow Depth=1.25' Max Vel=6.50 fps Inflow=9.94 cfs 44,564 cf
15.0" Round Pipe n=0.012 L=60.0' S=0.0100 ' Capacity=7.00 cfs Outflow=7.00 cfs 44,561 cf

Link AP1: AP #1 Inflow=68.97 cfs 1,071,561 cf
Primary=68.97 cfs 1,071,561 cf

Link AP2: AP #2 Inflow=29.71 cfs 330,112 cf
Primary=29.71 cfs 330,112 cf

Link AP3: AP #3 Inflow=22.64 cfs 199,109 cf
Primary=22.64 cfs 199,109 cf

Link AP4: AP #4 Inflow=8.53 cfs 69,707 cf
Primary=8.53 cfs 69,707 cf

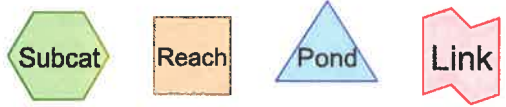
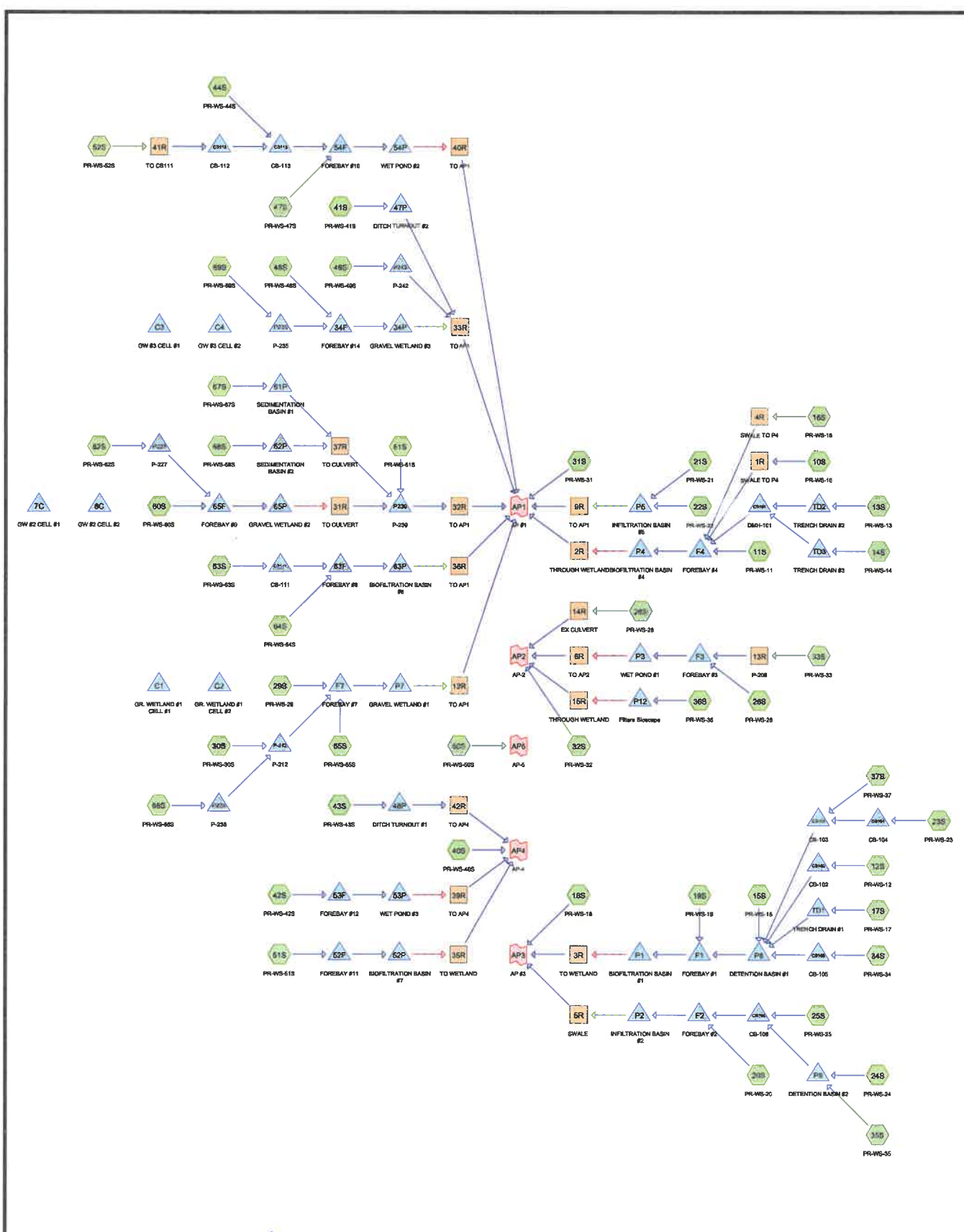
Link AP5: AP #5 Inflow=1.84 cfs 10,873 cf
Primary=1.84 cfs 10,873 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 1,681,366 cf Average Runoff Depth = 1.97"
92.46% Pervious = 9,488,575 sf 7.54% Impervious = 773,374 sf

14.7 APPENDIX II

POST-DEVELOPMENT CONDITIONS ANALYSIS

- 14.7.1 2-Year 24-Hour Summary Analysis
- 14.7.2 10-Year 24-Hour Complete Analysis
- 14.7.3 25-Year 24-Hour Summary Analysis
- 14.7.4 50-Year 24-Hour Summary Analysis



Routing Diagram for 21117-PROP-PHASE-5
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
689,468	46	2 acre lots, 12% imp, HSG A (18S, 49S)
231,497	65	2 acre lots, 12% imp, HSG B (18S, 49S)
967,488	39	>75% Grass cover, Good, HSG A (11S, 12S, 14S, 15S, 18S, 19S, 20S, 22S, 23S, 25S, 26S, 30S, 31S, 32S, 33S, 34S, 35S, 37S, 40S, 42S, 44S, 47S, 48S, 49S, 51S, 52S, 60S, 61S, 62S, 63S, 64S)
386,447	61	>75% Grass cover, Good, HSG B (11S, 12S, 15S, 18S, 19S, 22S, 26S, 29S, 30S, 32S, 40S, 42S, 44S, 47S, 48S, 49S, 50S, 51S, 52S, 60S, 61S, 62S, 63S, 64S, 69S)
2,271	74	>75% Grass cover, Good, HSG C (40S)
373,537	96	Gravel surface, HSG A (18S, 31S, 32S, 61S, 67S, 68S)
27,302	96	Gravel surface, HSG B (31S, 32S)
286,784	98	Paved parking, HSG A (13S, 14S, 15S, 17S, 19S, 20S, 23S, 25S, 26S, 29S, 30S, 33S, 34S, 35S, 36S, 37S, 41S, 42S, 44S, 47S, 49S, 51S, 52S, 60S, 62S, 63S, 64S, 65S, 66S)
109,827	98	Paved parking, HSG B (12S, 15S, 17S, 26S, 29S, 30S, 34S, 35S, 36S, 42S, 43S, 44S, 47S, 48S, 49S, 51S, 52S, 60S, 62S, 63S, 64S, 65S, 66S, 69S)
3,303	98	Paved parking, HSG C (41S, 43S, 48S)
132,189	98	Roofs, HSG A (10S, 16S, 18S, 21S, 24S)
65,334	98	Roofs, HSG B (10S, 16S, 21S)
782,142	81	Urban industrial, 72% imp, HSG A (31S, 49S)
122,277	88	Urban industrial, 72% imp, HSG B (31S, 49S)
1,504,869	30	Woods, Good, HSG A (18S, 28S, 31S, 32S, 40S, 49S, 50S, 61S, 68S)
4,373,420	55	Woods, Good, HSG B (18S, 31S, 32S, 40S, 49S, 50S, 61S)
203,794	77	Woods, Good, HSG D (32S)
10,261,949	57	TOTAL AREA

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
4,736,477	HSG A	10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23S, 24S, 25S, 26S, 28S, 29S, 30S, 31S, 32S, 33S, 34S, 35S, 36S, 37S, 40S, 41S, 42S, 44S, 47S, 48S, 49S, 50S, 51S, 52S, 60S, 61S, 62S, 63S, 64S, 65S, 66S, 67S, 68S
5,316,104	HSG B	10S, 11S, 12S, 15S, 16S, 17S, 18S, 19S, 21S, 22S, 26S, 29S, 30S, 31S, 32S, 34S, 35S, 36S, 40S, 42S, 43S, 44S, 47S, 48S, 49S, 50S, 51S, 52S, 60S, 61S, 62S, 63S, 64S, 65S, 66S, 69S
5,574	HSG C	40S, 41S, 43S, 48S
203,794	HSG D	32S
0	Other	
10,261,949		TOTAL AREA

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment10S: PR-WS-10	Runoff Area=67,500 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=4.51 cfs 16,399 cf
Subcatchment11S: PR-WS-11	Runoff Area=50,483 sf 0.00% Impervious Runoff Depth>0.01" Tc=7.0 min CN=42 Runoff=0.00 cfs 44 cf
Subcatchment12S: PR-WS-12	Runoff Area=30,762 sf 79.68% Impervious Runoff Depth>2.12" Tc=7.0 min CN=90 Runoff=1.66 cfs 5,435 cf
Subcatchment13S: PR-WS-13	Runoff Area=4,028 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=0.27 cfs 979 cf
Subcatchment14S: PR-WS-14	Runoff Area=23,844 sf 91.97% Impervious Runoff Depth>2.40" Tc=7.0 min CN=93 Runoff=1.42 cfs 4,760 cf
Subcatchment15S: PR-WS-15	Runoff Area=86,840 sf 65.65% Impervious Runoff Depth>1.24" Tc=7.0 min CN=78 Runoff=2.70 cfs 8,939 cf
Subcatchment16S: PR-WS-16	Runoff Area=34,500 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=2.31 cfs 8,382 cf
Subcatchment17S: PR-WS-17	Runoff Area=5,786 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=0.39 cfs 1,406 cf
Subcatchment18S: PR-WS-18	Runoff Area=1,315,149 sf 4.81% Impervious Runoff Depth>0.10" Flow Length=1,550' Tc=55.6 min CN=49 Runoff=0.40 cfs 10,441 cf
Subcatchment19S: PR-WS-19	Runoff Area=40,296 sf 8.96% Impervious Runoff Depth>0.10" Tc=7.0 min CN=49 Runoff=0.01 cfs 333 cf
Subcatchment20S: PR-WS-20	Runoff Area=18,390 sf 25.73% Impervious Runoff Depth>0.21" Flow Length=399' Tc=23.6 min CN=54 Runoff=0.03 cfs 318 cf
Subcatchment21S: PR-WS-21	Runoff Area=75,000 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=5.02 cfs 18,221 cf
Subcatchment22S: PR-WS-22	Runoff Area=18,509 sf 0.00% Impervious Runoff Depth>0.39" Tc=7.0 min CN=60 Runoff=0.10 cfs 599 cf
Subcatchment23S: PR-WS-23	Runoff Area=22,108 sf 85.20% Impervious Runoff Depth>2.03" Tc=7.0 min CN=89 Runoff=1.15 cfs 3,747 cf
Subcatchment24S: PR-WS-24	Runoff Area=15,750 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=1.05 cfs 3,827 cf
Subcatchment25S: PR-WS-25	Runoff Area=12,749 sf 78.05% Impervious Runoff Depth>1.71" Tc=7.0 min CN=85 Runoff=0.56 cfs 1,820 cf

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Subcatchment26S: PR-WS-26	Runoff Area=41,227 sf 54.01% Impervious Runoff Depth>0.95" Flow Length=1,050' Tc=20.6 min CN=73 Runoff=0.65 cfs 3,250 cf
Subcatchment28S: PR-WS-28	Runoff Area=105,633 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=536' Tc=18.5 min CN=30 Runoff=0.00 cfs 0 cf
Subcatchment29S: PR-WS-29	Runoff Area=22,082 sf 29.80% Impervious Runoff Depth>0.90" Flow Length=452' Slope=0.0100 ' /' Tc=10.4 min CN=72 Runoff=0.42 cfs 1,650 cf
Subcatchment30S: PR-WS-30S	Runoff Area=30,582 sf 27.97% Impervious Runoff Depth>0.46" Flow Length=738' Tc=16.5 min CN=62 Runoff=0.18 cfs 1,165 cf
Subcatchment31S: PR-WS-31	Runoff Area=4,353,531 sf 13.04% Impervious Runoff Depth>0.26" Flow Length=4,410' Tc=210.5 min CN=57 Runoff=3.95 cfs 93,766 cf
Subcatchment32S: PR-WS-32	Runoff Area=1,498,826 sf 0.00% Impervious Runoff Depth>0.15" Flow Length=1,350' Tc=79.3 min CN=52 Runoff=0.82 cfs 19,146 cf
Subcatchment33S: PR-WS-33	Runoff Area=77,558 sf 24.55% Impervious Runoff Depth>0.18" Flow Length=1,004' Tc=20.2 min CN=53 Runoff=0.09 cfs 1,183 cf
Subcatchment34S: PR-WS-34	Runoff Area=12,060 sf 90.49% Impervious Runoff Depth>2.30" Tc=7.0 min CN=92 Runoff=0.70 cfs 2,313 cf
Subcatchment35S: PR-WS-35	Runoff Area=11,660 sf 39.07% Impervious Runoff Depth>0.46" Tc=7.0 min CN=62 Runoff=0.09 cfs 446 cf
Subcatchment36S: PR-WS-36	Runoff Area=2,928 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=0.20 cfs 711 cf
Subcatchment37S: PR-WS-37	Runoff Area=3,161 sf 64.79% Impervious Runoff Depth>1.17" Tc=7.0 min CN=77 Runoff=0.09 cfs 309 cf
Subcatchment40S: PR-WS-40S	Runoff Area=391,049 sf 0.00% Impervious Runoff Depth>0.13" Flow Length=1,250' Tc=54.8 min CN=51 Runoff=0.18 cfs 4,376 cf
Subcatchment41S: PR-WS-41S	Runoff Area=3,791 sf 100.00% Impervious Runoff Depth>2.92" Tc=7.0 min CN=98 Runoff=0.25 cfs 921 cf
Subcatchment42S: PR-WS-42S	Runoff Area=82,009 sf 45.25% Impervious Runoff Depth>0.85" Tc=7.0 min CN=71 Runoff=1.61 cfs 5,787 cf
Subcatchment43S: PR-WS-43S	Runoff Area=3,799 sf 100.00% Impervious Runoff Depth>2.92" Tc=6.0 min CN=98 Runoff=0.26 cfs 923 cf
Subcatchment44S: PR-WS-44S	Runoff Area=15,872 sf 60.02% Impervious Runoff Depth>1.57" Tc=7.0 min CN=83 Runoff=0.64 cfs 2,072 cf
Subcatchment47S: PR-WS-47S	Runoff Area=30,673 sf 41.30% Impervious Runoff Depth>1.00" Flow Length=724' Slope=0.0050 ' /' Tc=18.8 min CN=74 Runoff=0.54 cfs 2,556 cf

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Subcatchment48S: PR-WS-48S	Runoff Area=23,409 sf 35.68% Impervious Runoff Depth>0.53" Flow Length=537' Slope=0.0050 '/' Tc=7.3 min CN=64 Runoff=0.23 cfs 1,044 cf
Subcatchment49S: PR-WS-49S	Runoff Area=772,411 sf 17.97% Impervious Runoff Depth>0.14" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=51 Runoff=0.54 cfs 8,931 cf
Subcatchment50S: PR-WS-50S	Runoff Area=48,962 sf 0.00% Impervious Runoff Depth>0.16" Flow Length=245' Tc=27.5 min CN=52 Runoff=0.04 cfs 648 cf
Subcatchment51S: PR-WS-51S	Runoff Area=54,749 sf 37.30% Impervious Runoff Depth>0.70" Tc=7.0 min CN=68 Runoff=0.84 cfs 3,214 cf
Subcatchment52S: PR-WS-52S	Runoff Area=26,295 sf 48.57% Impervious Runoff Depth>0.75" Tc=7.0 min CN=69 Runoff=0.44 cfs 1,644 cf
Subcatchment60S: PR-WS-60S	Runoff Area=30,700 sf 36.09% Impervious Runoff Depth>0.53" Flow Length=770' Slope=0.0050 '/' Tc=48.6 min CN=64 Runoff=0.15 cfs 1,347 cf
Subcatchment61S: PR-WS-61S	Runoff Area=481,287 sf 0.00% Impervious Runoff Depth>0.10" Flow Length=1,017' Tc=30.7 min CN=49 Runoff=0.15 cfs 3,901 cf
Subcatchment62S: PR-WS-62S	Runoff Area=14,783 sf 46.13% Impervious Runoff Depth>0.74" Flow Length=560' Slope=0.0050 '/' Tc=33.3 min CN=69 Runoff=0.14 cfs 917 cf
Subcatchment63S: PR-WS-63S	Runoff Area=20,500 sf 42.56% Impervious Runoff Depth>0.79" Flow Length=753' Slope=0.0050 '/' Tc=48.0 min CN=70 Runoff=0.17 cfs 1,345 cf
Subcatchment64S: PR-WS-64S	Runoff Area=22,518 sf 36.79% Impervious Runoff Depth>0.49" Flow Length=767' Slope=0.0050 '/' Tc=48.5 min CN=63 Runoff=0.10 cfs 916 cf
Subcatchment65S: PR-WS-65S	Runoff Area=9,823 sf 100.00% Impervious Runoff Depth>2.91" Flow Length=850' Slope=0.0050 '/' Tc=10.9 min CN=98 Runoff=0.58 cfs 2,385 cf
Subcatchment66S: PR-WS-66S	Runoff Area=10,629 sf 100.00% Impervious Runoff Depth>2.91" Flow Length=880' Slope=0.0050 '/' Tc=11.3 min CN=98 Runoff=0.62 cfs 2,581 cf
Subcatchment67S: PR-WS-67S	Runoff Area=93,025 sf 0.00% Impervious Runoff Depth>2.70" Tc=7.0 min CN=96 Runoff=6.00 cfs 20,912 cf
Subcatchment68S: PR-WS-68S	Runoff Area=136,492 sf 0.00% Impervious Runoff Depth>1.64" Tc=7.0 min CN=84 Runoff=5.74 cfs 18,639 cf
Subcatchment69S: PR-WS-69S	Runoff Area=8,231 sf 69.81% Impervious Runoff Depth>1.87" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=87 Runoff=0.39 cfs 1,282 cf
Reach 1R: SWALE TO P4	Avg. Flow Depth=0.28' Max Vel=3.09 fps Inflow=4.51 cfs 16,399 cf n=0.022 L=550.0' S=0.0145 '/' Capacity=184.11 cfs Outflow=4.21 cfs 16,359 cf
Reach 2R: THROUGH WETLAND	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf n=0.022 L=550.0' S=0.0073 '/' Capacity=539.30 cfs Outflow=0.00 cfs 0 cf

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Reach 3R: TO WETLANDAvg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=208.0' S=0.0385 '/' Capacity=1,240.22 cfs Outflow=0.00 cfs 0 cf**Reach 4R: SWALE TO P4**Avg. Flow Depth=0.18' Max Vel=2.77 fps Inflow=2.31 cfs 8,382 cf
n=0.022 L=300.0' S=0.0200 '/' Capacity=215.89 cfs Outflow=2.24 cfs 8,372 cf**Reach 5R: SWALE**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=779.0' S=0.0128 '/' Capacity=172.96 cfs Outflow=0.00 cfs 0 cf**Reach 6R: TO AP2**Avg. Flow Depth=0.07' Max Vel=0.29 fps Inflow=0.06 cfs 2,030 cf
n=0.022 L=340.0' S=0.0010 '/' Capacity=202.90 cfs Outflow=0.06 cfs 1,970 cf**Reach 9R: TO AP1**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=1,547.0' S=0.0065 '/' Capacity=508.44 cfs Outflow=0.00 cfs 0 cf**Reach 12R: TO AP1**Avg. Flow Depth=0.10' Max Vel=0.42 fps Inflow=0.45 cfs 5,004 cf
n=0.022 L=3,150.0' S=0.0013 '/' Capacity=225.35 cfs Outflow=0.16 cfs 4,357 cf**Reach 13R: P-209**Avg. Flow Depth=0.11' Max Vel=1.88 fps Inflow=0.09 cfs 1,183 cf
12.0" Round Pipe n=0.012 L=60.0' S=0.0083 '/' Capacity=3.52 cfs Outflow=0.09 cfs 1,182 cf**Reach 14R: EX CULVERT**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
15.0" Round Pipe n=0.012 L=60.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=0.00 cfs 0 cf**Reach 15R: THROUGH WETLAND**Avg. Flow Depth=0.07' Max Vel=0.45 fps Inflow=0.16 cfs 711 cf
n=0.025 L=776.0' S=0.0032 '/' Capacity=312.69 cfs Outflow=0.10 cfs 705 cf**Reach 31R: TO CULVERT**Avg. Flow Depth=0.02' Max Vel=0.47 fps Inflow=0.03 cfs 987 cf
n=0.022 L=338.0' S=0.0101 '/' Capacity=326.21 cfs Outflow=0.03 cfs 969 cf**Reach 32R: TO AP1**Avg. Flow Depth=0.03' Max Vel=0.32 fps Inflow=0.05 cfs 410 cf
n=0.022 L=3,355.0' S=0.0034 '/' Capacity=188.06 cfs Outflow=0.03 cfs 138 cf**Reach 33R: TO AP1**Avg. Flow Depth=0.10' Max Vel=0.87 fps Inflow=0.71 cfs 10,947 cf
n=0.022 L=2,585.0' S=0.0062 '/' Capacity=255.51 cfs Outflow=0.38 cfs 10,384 cf**Reach 35R: TO WETLAND**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=75.0' S=0.0180 '/' Capacity=435.72 cfs Outflow=0.00 cfs 0 cf**Reach 36R: TO AP1**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=3,525.0' S=0.0023 '/' Capacity=156.16 cfs Outflow=0.00 cfs 0 cf**Reach 37R: TO CULVERT**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=1,430.0' S=0.0027 '/' Capacity=169.60 cfs Outflow=0.00 cfs 0 cf**Reach 39R: TO AP4**Avg. Flow Depth=0.11' Max Vel=0.74 fps Inflow=0.40 cfs 5,126 cf
n=0.022 L=565.0' S=0.0038 '/' Capacity=201.27 cfs Outflow=0.38 cfs 5,069 cf**Reach 40R: TO AP1**Avg. Flow Depth=0.10' Max Vel=0.64 fps Inflow=0.68 cfs 5,247 cf
n=0.022 L=3,172.0' S=0.0035 '/' Capacity=191.25 cfs Outflow=0.27 cfs 4,890 cf

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Reach 41R: TO CB111Avg. Flow Depth=0.17' Max Vel=1.03 fps Inflow=0.44 cfs 1,644 cf
n=0.017 L=50.0' S=0.0020 ' Capacity=13.91 cfs Outflow=0.43 cfs 1,642 cf**Reach 42R: TO AP4**Inflow=0.26 cfs 923 cf
Outflow=0.26 cfs 923 cf**Pond 7C: GW #2 CELL #1**

Peak Elev=0.00' Storage=0 cf

Pond 8C: GW #2 CELL #2

Peak Elev=0.00' Storage=0 cf

Pond 34F: FOREBAY#14Peak Elev=116.10' Storage=767 cf Inflow=0.62 cfs 2,325 cf
Outflow=0.32 cfs 1,623 cf**Pond 34P: GRAVEL WETLAND #3**Peak Elev=114.47' Storage=752 cf Inflow=0.32 cfs 1,623 cf
Primary=0.03 cfs 1,118 cf Secondary=0.00 cfs 0 cf Outflow=0.03 cfs 1,118 cf**Pond 47P: DITCH TURNOUT #2**Peak Elev=117.08' Storage=9 cf Inflow=0.25 cfs 921 cf
Outflow=0.25 cfs 921 cf**Pond 48P: DITCH TURNOUT #1**Peak Elev=117.08' Storage=9 cf Inflow=0.26 cfs 923 cf
Outflow=0.26 cfs 923 cf**Pond 52F: FOREBAY#11**Peak Elev=120.32' Storage=553 cf Inflow=0.84 cfs 3,214 cf
Outflow=0.76 cfs 2,737 cf**Pond 52P: BIOFILTRATION BASIN #7**Peak Elev=119.06' Storage=482 cf Inflow=0.76 cfs 2,737 cf
Discarded=0.17 cfs 2,720 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.17 cfs 2,720 cf**Pond 53F: FOREBAY#12**Peak Elev=116.69' Storage=644 cf Inflow=1.61 cfs 5,787 cf
Outflow=1.51 cfs 5,361 cf**Pond 53P: WET POND #3**Peak Elev=114.73' Storage=5,951 cf Inflow=1.51 cfs 5,361 cf
Primary=0.40 cfs 5,126 cf Secondary=0.00 cfs 0 cf Outflow=0.40 cfs 5,126 cf**Pond 54F: FOREBAY#10**Peak Elev=116.17' Storage=959 cf Inflow=1.39 cfs 6,268 cf
Outflow=1.50 cfs 5,444 cf**Pond 54P: WET POND #2**Peak Elev=115.64' Storage=8,625 cf Inflow=1.50 cfs 5,444 cf
Primary=0.68 cfs 5,247 cf Secondary=0.00 cfs 0 cf Outflow=0.68 cfs 5,247 cf**Pond 61P: SEDIMENTATION BASIN #1**Peak Elev=121.12' Storage=7,817 cf Inflow=6.00 cfs 20,912 cf
Discarded=0.87 cfs 20,896 cf Primary=0.00 cfs 0 cf Outflow=0.87 cfs 20,896 cf**Pond 62P: SEDIMENTATION BASIN #2**Peak Elev=121.09' Storage=7,093 cf Inflow=5.74 cfs 18,639 cf
Discarded=0.78 cfs 18,618 cf Primary=0.00 cfs 0 cf Outflow=0.78 cfs 18,618 cf**Pond 63F: FOREBAY#8**Peak Elev=119.08' Storage=618 cf Inflow=0.27 cfs 2,261 cf
Outflow=0.20 cfs 1,687 cf

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Pond 63P: BIOFILTRATIONBASIN#6 Peak Elev=116.14' Storage=156 cf Inflow=0.20 cfs 1,687 cf
Discarded=0.11 cfs 1,681 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.11 cfs 1,681 cf

Pond 65F: FOREBAY#9 Peak Elev=119.09' Storage=353 cf Inflow=0.27 cfs 2,247 cf
Outflow=0.26 cfs 1,934 cf

Pond 65P: GRAVEL WETLAND#2 Peak Elev=117.65' Storage=1,050 cf Inflow=0.26 cfs 1,934 cf
Primary=0.03 cfs 987 cf Secondary=0.00 cfs 0 cf Outflow=0.03 cfs 987 cf

Pond C1: GR. WETLAND#1 CELL #1 Peak Elev=0.00' Storage=0 cf

Pond C2: GR. WETLAND#1 CELL #2 Peak Elev=0.00' Storage=0 cf

Pond C3: GW #3 CELL #1 Peak Elev=0.00' Storage=0 cf

Pond C4: GW #3 CELL #2 Peak Elev=0.00' Storage=0 cf

Pond CB101: DMH-101 Peak Elev=111.72' Storage=11 cf Inflow=1.68 cfs 5,737 cf
12.0" Round Culvert n=0.012 L=72.0' S=0.0050 ' Outflow=1.68 cfs 5,736 cf

Pond CB102: CB-102 Peak Elev=113.49' Storage=10 cf Inflow=1.66 cfs 5,435 cf
12.0" Round Culvert n=0.012 L=165.0' S=0.0050 ' Outflow=1.66 cfs 5,434 cf

Pond CB103: CB-103 Peak Elev=113.01' Storage=9 cf Inflow=1.24 cfs 4,056 cf
12.0" Round Culvert n=0.012 L=180.0' S=0.0050 ' Outflow=1.24 cfs 4,055 cf

Pond CB104: CB-104 Peak Elev=114.02' Storage=8 cf Inflow=1.15 cfs 3,747 cf
12.0" Round Culvert n=0.012 L=189.0' S=0.0050 ' Outflow=1.15 cfs 3,746 cf

Pond CB105: CB-105 Peak Elev=112.52' Storage=6 cf Inflow=0.70 cfs 2,313 cf
12.0" Round Culvert n=0.012 L=218.0' S=0.0050 ' Outflow=0.70 cfs 2,312 cf

Pond CB106: CB-106 Peak Elev=114.01' Storage=7 cf Inflow=1.07 cfs 5,259 cf
18.0" Round Culvert n=0.012 L=86.0' S=0.0058 ' Outflow=1.07 cfs 5,258 cf

Pond CB111: CB-111 Peak Elev=117.49' Storage=3 cf Inflow=0.17 cfs 1,345 cf
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 ' Outflow=0.17 cfs 1,345 cf

Pond CB112: CB-112 Peak Elev=115.42' Storage=5 cf Inflow=0.43 cfs 1,642 cf
12.0" Round Culvert n=0.012 L=88.0' S=0.0051 ' Outflow=0.43 cfs 1,641 cf

Pond CB113: CB-113 Peak Elev=115.08' Storage=8 cf Inflow=1.06 cfs 3,713 cf
12.0" Round Culvert n=0.012 L=72.0' S=0.0069 ' Outflow=1.06 cfs 3,712 cf

Pond F1: FOREBAY#1 Peak Elev=113.14' Storage=3,653 cf Inflow=2.38 cfs 18,420 cf
Outflow=2.09 cfs 15,045 cf

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Pond F2: FOREBAY#2	Peak Elev=116.09' Storage=2,154 cf Inflow=1.07 cfs 5,576 cf Outflow=0.56 cfs 3,543 cf
Pond F3: FOREBAY#3	Peak Elev=114.04' Storage=1,858 cf Inflow=0.67 cfs 4,431 cf Outflow=0.16 cfs 2,624 cf
Pond F4: FOREBAY#4	Peak Elev=112.69' Storage=3,434 cf Inflow=8.09 cfs 30,511 cf Outflow=7.97 cfs 27,814 cf
Pond F7: FOREBAY#7	Peak Elev=111.30' Storage=529 cf Inflow=1.70 cfs 7,776 cf Outflow=1.67 cfs 7,415 cf
Pond P-212: P-212	Peak Elev=110.35' Storage=56 cf Inflow=0.74 cfs 3,741 cf 12.0" Round Culvert n=0.012 L=61.0' S=0.0049 ' /' Outflow=0.73 cfs 3,741 cf
Pond P1: BIOFILTRATIONBASIN#1	Peak Elev=111.02' Storage=320 cf Inflow=2.09 cfs 15,045 cf Discarded=1.98 cfs 15,029 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=1.98 cfs 15,029 cf
Pond P12: Filtera Bioscape	Peak Elev=115.47' Storage=19 cf Inflow=0.20 cfs 711 cf Outflow=0.16 cfs 711 cf
Pond P2: INFILTRATIONBASIN#2	Peak Elev=114.29' Storage=773 cf Inflow=0.56 cfs 3,543 cf Discarded=0.15 cfs 3,523 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.15 cfs 3,523 cf
Pond P227: P-227	Peak Elev=120.20' Storage=72 cf Inflow=0.14 cfs 917 cf 12.0" Round Culvert n=0.011 L=80.0' S=0.0050 ' /' Outflow=0.14 cfs 900 cf
Pond P235: P-235	Peak Elev=114.61' Storage=5 cf Inflow=0.39 cfs 1,282 cf 12.0" Round Culvert n=0.012 L=50.0' S=0.0050 ' /' Outflow=0.39 cfs 1,281 cf
Pond P238: P-238	Peak Elev=110.77' Storage=10 cf Inflow=0.62 cfs 2,581 cf 12.0" Round Culvert n=0.012 L=62.0' S=0.0050 ' /' Outflow=0.62 cfs 2,576 cf
Pond P239: P-239	Peak Elev=115.64' Storage=4,457 cf Inflow=0.17 cfs 4,870 cf 36.0" x 18.0" Box Culvert n=0.022 L=65.0' S=0.0077 ' /' Outflow=0.05 cfs 410 cf
Pond P242: P-242	Peak Elev=112.83' Storage=24 cf Inflow=0.54 cfs 8,931 cf 24.0" x 24.0" Box Culvert n=0.012 L=41.0' S=0.0195 ' /' Outflow=0.62 cfs 8,909 cf
Pond P3: WET POND #1	Peak Elev=111.40' Storage=6,482 cf Inflow=0.16 cfs 2,624 cf Primary=0.06 cfs 2,030 cf Secondary=0.00 cfs 0 cf Outflow=0.06 cfs 2,030 cf
Pond P4: BIOFILTRATIONBASIN#4	Peak Elev=110.89' Storage=7,374 cf Inflow=7.97 cfs 27,814 cf Discarded=1.86 cfs 27,790 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=1.86 cfs 27,790 cf
Pond P5: INFILTRATIONBASIN#5	Peak Elev=116.41' Storage=4,648 cf Inflow=5.10 cfs 18,820 cf Discarded=1.09 cfs 18,802 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=1.09 cfs 18,802 cf
Pond P7: GRAVELWETLAND#1	Peak Elev=111.66' Storage=3,195 cf Inflow=1.67 cfs 7,415 cf Primary=0.45 cfs 5,004 cf Secondary=0.00 cfs 0 cf Outflow=0.45 cfs 5,004 cf

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Pond P8: DETENTION BASIN #1 Peak Elev=112.30' Storage=8,727 cf Inflow=6.66 cfs 22,143 cf
18.0" Round Culvert n=0.012 L=125.0' S=0.0050 ' Outflow=2.38 cfs 18,087 cf

Pond P9: DETENTION BASIN #2 Peak Elev=115.63' Storage=1,595 cf Inflow=1.14 cfs 4,272 cf
18.0" Round Culvert n=0.012 L=186.0' S=0.0089 ' Outflow=0.64 cfs 3,439 cf

Pond TD1: TRENCH DRAIN #1 Peak Elev=112.49' Storage=32 cf Inflow=0.39 cfs 1,406 cf
6.0" Round Culvert n=0.012 L=115.0' S=0.0050 ' Outflow=0.38 cfs 1,403 cf

Pond TD2: TRENCH DRAIN #2 Peak Elev=112.19' Storage=19 cf Inflow=0.27 cfs 979 cf
6.0" Round Culvert n=0.012 L=161.0' S=0.0050 ' Outflow=0.27 cfs 977 cf

Pond TD3: TRENCH DRAIN #3 Peak Elev=113.03' Storage=24 cf Inflow=1.42 cfs 4,760 cf
10.0" Round Culvert n=0.012 L=76.0' S=0.0164 ' Outflow=1.42 cfs 4,760 cf

Link AP1: AP #1 Inflow=4.59 cfs 113,535 cf
Primary=4.59 cfs 113,535 cf

Link AP2: AP-2 Inflow=0.86 cfs 21,821 cf
Primary=0.86 cfs 21,821 cf

Link AP3: AP #3 Inflow=0.40 cfs 10,441 cf
Primary=0.40 cfs 10,441 cf

Link AP4: AP-4 Inflow=0.54 cfs 10,367 cf
Primary=0.54 cfs 10,367 cf

Link AP5: AP-5 Inflow=0.04 cfs 648 cf
Primary=0.04 cfs 648 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 295,928 cf Average Runoff Depth = 0.35"
86.76% Pervious = 8,902,815 sf 13.24% Impervious = 1,359,134 sf

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment10S: PR-WS-10	Runoff Area=67,500 sf 100.00% Impervious Runoff Depth>4.58" Tc=7.0 min CN=98 Runoff=6.96 cfs 25,763 cf
Subcatchment11S: PR-WS-11	Runoff Area=50,483 sf 0.00% Impervious Runoff Depth>0.27" Tc=7.0 min CN=42 Runoff=0.09 cfs 1,120 cf
Subcatchment12S: PR-WS-12	Runoff Area=30,762 sf 79.68% Impervious Runoff Depth>3.70" Tc=7.0 min CN=90 Runoff=2.83 cfs 9,484 cf
Subcatchment13S: PR-WS-13	Runoff Area=4,028 sf 100.00% Impervious Runoff Depth>4.58" Tc=7.0 min CN=98 Runoff=0.42 cfs 1,537 cf
Subcatchment14S: PR-WS-14	Runoff Area=23,844 sf 91.97% Impervious Runoff Depth>4.02" Tc=7.0 min CN=93 Runoff=2.32 cfs 7,984 cf
Subcatchment15S: PR-WS-15	Runoff Area=86,840 sf 65.65% Impervious Runoff Depth>2.56" Tc=7.0 min CN=78 Runoff=5.70 cfs 18,502 cf
Subcatchment16S: PR-WS-16	Runoff Area=34,500 sf 100.00% Impervious Runoff Depth>4.58" Tc=7.0 min CN=98 Runoff=3.56 cfs 13,168 cf
Subcatchment17S: PR-WS-17	Runoff Area=5,786 sf 100.00% Impervious Runoff Depth>4.58" Tc=7.0 min CN=98 Runoff=0.60 cfs 2,208 cf
Subcatchment18S: PR-WS-18	Runoff Area=1,315,149 sf 4.81% Impervious Runoff Depth>0.56" Flow Length=1,550' Tc=55.6 min CN=49 Runoff=5.19 cfs 61,027 cf
Subcatchment19S: PR-WS-19	Runoff Area=40,296 sf 8.96% Impervious Runoff Depth>0.57" Tc=7.0 min CN=49 Runoff=0.31 cfs 1,911 cf
Subcatchment20S: PR-WS-20	Runoff Area=18,390 sf 25.73% Impervious Runoff Depth>0.83" Flow Length=399' Tc=23.6 min CN=54 Runoff=0.20 cfs 1,269 cf
Subcatchment21S: PR-WS-21	Runoff Area=75,000 sf 100.00% Impervious Runoff Depth>4.58" Tc=7.0 min CN=98 Runoff=7.74 cfs 28,625 cf
Subcatchment22S: PR-WS-22	Runoff Area=18,509 sf 0.00% Impervious Runoff Depth>1.20" Tc=7.0 min CN=60 Runoff=0.50 cfs 1,844 cf
Subcatchment23S: PR-WS-23	Runoff Area=22,108 sf 85.20% Impervious Runoff Depth>3.60" Tc=7.0 min CN=89 Runoff=1.99 cfs 6,626 cf
Subcatchment24S: PR-WS-24	Runoff Area=15,750 sf 100.00% Impervious Runoff Depth>4.58" Tc=7.0 min CN=98 Runoff=1.62 cfs 6,011 cf
Subcatchment25S: PR-WS-25	Runoff Area=12,749 sf 78.05% Impervious Runoff Depth>3.20" Tc=7.0 min CN=85 Runoff=1.04 cfs 3,399 cf

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Subcatchment26S: PR-WS-26	Runoff Area=41,227 sf 54.01% Impervious Flow Length=1,050' Tc=20.6 min CN=73	Runoff Depth>2.13" Runoff=1.56 cfs 7,320 cf
Subcatchment28S: PR-WS-28	Runoff Area=105,633 sf 0.00% Impervious Flow Length=536' Tc=18.5 min CN=30	Runoff Depth>0.00" Runoff=0.00 cfs 8 cf
Subcatchment29S: PR-WS-29	Runoff Area=22,082 sf 29.80% Impervious Flow Length=452' Slope=0.0100 '/ Tc=10.4 min CN=72	Runoff Depth>2.06" Runoff=1.03 cfs 3,783 cf
Subcatchment30S: PR-WS-30S	Runoff Area=30,582 sf 27.97% Impervious Flow Length=738' Tc=16.5 min CN=62	Runoff Depth>1.32" Runoff=0.72 cfs 3,371 cf
Subcatchment31S: PR-WS-31	Runoff Area=4,353,531 sf 13.04% Impervious Flow Length=4,410' Tc=210.5 min CN=57	Runoff Depth>0.92" Runoff=16.77 cfs 335,253 cf
Subcatchment32S: PR-WS-32	Runoff Area=1,498,826 sf 0.00% Impervious Flow Length=1,350' Tc=79.3 min CN=52	Runoff Depth>0.70" Runoff=6.93 cfs 87,641 cf
Subcatchment33S: PR-WS-33	Runoff Area=77,558 sf 24.55% Impervious Flow Length=1,004' Tc=20.2 min CN=53	Runoff Depth>0.77" Runoff=0.79 cfs 5,000 cf
Subcatchment34S: PR-WS-34	Runoff Area=12,060 sf 90.49% Impervious Tc=7.0 min CN=92	Runoff Depth>3.91" Runoff=1.15 cfs 3,930 cf
Subcatchment35S: PR-WS-35	Runoff Area=11,660 sf 39.07% Impervious Tc=7.0 min CN=62	Runoff Depth>1.33" Runoff=0.36 cfs 1,289 cf
Subcatchment36S: PR-WS-36	Runoff Area=2,928 sf 100.00% Impervious Tc=7.0 min CN=98	Runoff Depth>4.58" Runoff=0.30 cfs 1,118 cf
Subcatchment37S: PR-WS-37	Runoff Area=3,161 sf 64.79% Impervious Tc=7.0 min CN=77	Runoff Depth>2.47" Runoff=0.20 cfs 651 cf
Subcatchment40S: PR-WS-40S	Runoff Area=391,049 sf 0.00% Impervious Flow Length=1,250' Tc=54.8 min CN=51	Runoff Depth>0.66" Runoff=2.01 cfs 21,413 cf
Subcatchment41S: PR-WS-41S	Runoff Area=3,791 sf 100.00% Impervious Tc=7.0 min CN=98	Runoff Depth>4.58" Runoff=0.39 cfs 1,447 cf
Subcatchment42S: PR-WS-42S	Runoff Area=82,009 sf 45.25% Impervious Tc=7.0 min CN=71	Runoff Depth>1.98" Runoff=4.10 cfs 13,524 cf
Subcatchment43S: PR-WS-43S	Runoff Area=3,799 sf 100.00% Impervious Tc=6.0 min CN=98	Runoff Depth>4.58" Runoff=0.40 cfs 1,450 cf
Subcatchment44S: PR-WS-44S	Runoff Area=15,872 sf 60.02% Impervious Tc=7.0 min CN=83	Runoff Depth>3.01" Runoff=1.22 cfs 3,979 cf
Subcatchment47S: PR-WS-47S	Runoff Area=30,673 sf 41.30% Impervious Flow Length=724' Slope=0.0050 '/ Tc=18.8 min CN=74	Runoff Depth>2.21" Runoff=1.25 cfs 5,656 cf

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Subcatchment48S: PR-WS-48S	Runoff Area=23,409 sf 35.68% Impervious Runoff Depth>1.46" Flow Length=537' Slope=0.0050 '/' Tc=7.3 min CN=64 Runoff=0.81 cfs 2,853 cf
Subcatchment49S: PR-WS-49S	Runoff Area=772,411 sf 17.97% Impervious Runoff Depth>0.67" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=51 Runoff=8.20 cfs 43,141 cf
Subcatchment50S: PR-WS-50S	Runoff Area=48,962 sf 0.00% Impervious Runoff Depth>0.72" Flow Length=245' Tc=27.5 min CN=52 Runoff=0.40 cfs 2,927 cf
Subcatchment51S: PR-WS-51S	Runoff Area=54,749 sf 37.30% Impervious Runoff Depth>1.75" Tc=7.0 min CN=68 Runoff=2.38 cfs 7,985 cf
Subcatchment52S: PR-WS-52S	Runoff Area=26,295 sf 48.57% Impervious Runoff Depth>1.83" Tc=7.0 min CN=69 Runoff=1.20 cfs 3,999 cf
Subcatchment60S: PR-WS-60S	Runoff Area=30,700 sf 36.09% Impervious Runoff Depth>1.44" Flow Length=770' Slope=0.0050 '/' Tc=48.6 min CN=64 Runoff=0.50 cfs 3,697 cf
Subcatchment61S: PR-WS-61S	Runoff Area=481,287 sf 0.00% Impervious Runoff Depth>0.56" Flow Length=1,017' Tc=30.7 min CN=49 Runoff=2.55 cfs 22,592 cf
Subcatchment62S: PR-WS-62S	Runoff Area=14,783 sf 46.13% Impervious Runoff Depth>1.81" Flow Length=560' Slope=0.0050 '/' Tc=33.3 min CN=69 Runoff=0.38 cfs 2,233 cf
Subcatchment63S: PR-WS-63S	Runoff Area=20,500 sf 42.56% Impervious Runoff Depth>1.88" Flow Length=753' Slope=0.0050 '/' Tc=48.0 min CN=70 Runoff=0.46 cfs 3,214 cf
Subcatchment64S: PR-WS-64S	Runoff Area=22,518 sf 36.79% Impervious Runoff Depth>1.38" Flow Length=767' Slope=0.0050 '/' Tc=48.5 min CN=63 Runoff=0.35 cfs 2,583 cf
Subcatchment65S: PR-WS-65S	Runoff Area=9,823 sf 100.00% Impervious Runoff Depth>4.58" Flow Length=850' Slope=0.0050 '/' Tc=10.9 min CN=98 Runoff=0.90 cfs 3,747 cf
Subcatchment66S: PR-WS-66S	Runoff Area=10,629 sf 100.00% Impervious Runoff Depth>4.58" Flow Length=880' Slope=0.0050 '/' Tc=11.3 min CN=98 Runoff=0.96 cfs 4,054 cf
Subcatchment67S: PR-WS-67S	Runoff Area=93,025 sf 0.00% Impervious Runoff Depth>4.35" Tc=7.0 min CN=96 Runoff=9.43 cfs 33,724 cf
Subcatchment68S: PR-WS-68S	Runoff Area=136,492 sf 0.00% Impervious Runoff Depth>3.10" Tc=7.0 min CN=84 Runoff=10.82 cfs 35,295 cf
Subcatchment69S: PR-WS-69S	Runoff Area=8,231 sf 69.81% Impervious Runoff Depth>3.39" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=87 Runoff=0.70 cfs 2,328 cf
Reach 1R: SWALE TO P4	Avg. Flow Depth=0.36' Max Vel=3.56 fps Inflow=6.96 cfs 25,763 cf n=0.022 L=550.0' S=0.0145 '/' Capacity=184.11 cfs Outflow=6.55 cfs 25,710 cf
Reach 2R: THROUGH WETLAND	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf n=0.022 L=550.0' S=0.0073 '/' Capacity=539.30 cfs Outflow=0.00 cfs 0 cf

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Reach 3R: TO WETLANDAvg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=208.0' S=0.0385 ' Capacity=1,240.22 cfs Outflow=0.00 cfs 0 cf**Reach 4R: SWALE TO P4**Avg. Flow Depth=0.23' Max Vel=3.22 fps Inflow=3.56 cfs 13,168 cf
n=0.022 L=300.0' S=0.0200 ' Capacity=215.89 cfs Outflow=3.48 cfs 13,153 cf**Reach 5R: SWALE**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=779.0' S=0.0128 ' Capacity=172.96 cfs Outflow=0.00 cfs 0 cf**Reach 6R: TO AP2**Avg. Flow Depth=0.14' Max Vel=0.45 fps Inflow=0.28 cfs 9,237 cf
n=0.022 L=340.0' S=0.0010 ' Capacity=202.90 cfs Outflow=0.28 cfs 9,121 cf**Reach 9R: TO AP1**Avg. Flow Depth=0.15' Max Vel=1.16 fps Inflow=1.25 cfs 2,292 cf
n=0.022 L=1,547.0' S=0.0065 ' Capacity=508.44 cfs Outflow=0.76 cfs 2,292 cf**Reach 12R: TO AP1**Avg. Flow Depth=0.22' Max Vel=0.66 fps Inflow=2.67 cfs 11,702 cf
n=0.022 L=3,150.0' S=0.0013 ' Capacity=225.35 cfs Outflow=0.78 cfs 10,993 cf**Reach 13R: P-209**Avg. Flow Depth=0.32' Max Vel=3.61 fps Inflow=0.79 cfs 5,000 cf
12.0" Round Pipe n=0.012 L=60.0' S=0.0083 ' Capacity=3.52 cfs Outflow=0.79 cfs 4,998 cf**Reach 14R: EX CULVERT**Avg. Flow Depth=0.01' Max Vel=0.55 fps Inflow=0.00 cfs 8 cf
15.0" Round Pipe n=0.012 L=60.0' S=0.0100 ' Capacity=7.00 cfs Outflow=0.00 cfs 7 cf**Reach 15R: THROUGH WETLAND**Avg. Flow Depth=0.09' Max Vel=0.51 fps Inflow=0.30 cfs 1,118 cf
n=0.025 L=776.0' S=0.0032 ' Capacity=312.69 cfs Outflow=0.15 cfs 1,108 cf**Reach 31R: TO CULVERT**Avg. Flow Depth=0.07' Max Vel=0.92 fps Inflow=0.26 cfs 3,957 cf
n=0.022 L=338.0' S=0.0101 ' Capacity=326.21 cfs Outflow=0.26 cfs 3,933 cf**Reach 32R: TO AP1**Avg. Flow Depth=0.17' Max Vel=0.92 fps Inflow=0.99 cfs 23,805 cf
n=0.022 L=3,355.0' S=0.0034 ' Capacity=188.06 cfs Outflow=0.90 cfs 22,233 cf**Reach 33R: TO AP1**Avg. Flow Depth=0.32' Max Vel=1.88 fps Inflow=8.44 cfs 46,326 cf
n=0.022 L=2,585.0' S=0.0062 ' Capacity=255.51 cfs Outflow=4.77 cfs 45,217 cf**Reach 35R: TO WETLAND**Avg. Flow Depth=0.03' Max Vel=0.66 fps Inflow=0.04 cfs 425 cf
n=0.022 L=75.0' S=0.0180 ' Capacity=435.72 cfs Outflow=0.04 cfs 425 cf**Reach 36R: TO AP1**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=3,525.0' S=0.0023 ' Capacity=156.16 cfs Outflow=0.00 cfs 0 cf**Reach 37R: TO CULVERT**Avg. Flow Depth=0.21' Max Vel=0.96 fps Inflow=2.59 cfs 4,212 cf
n=0.022 L=1,430.0' S=0.0027 ' Capacity=169.60 cfs Outflow=1.35 cfs 4,210 cf**Reach 39R: TO AP4**Avg. Flow Depth=0.15' Max Vel=0.92 fps Inflow=0.79 cfs 12,736 cf
n=0.022 L=565.0' S=0.0038 ' Capacity=201.27 cfs Outflow=0.78 cfs 12,650 cf**Reach 40R: TO AP1**Avg. Flow Depth=0.18' Max Vel=0.97 fps Inflow=2.14 cfs 12,521 cf
n=0.022 L=3,172.0' S=0.0035 ' Capacity=191.25 cfs Outflow=1.07 cfs 11,992 cf

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Reach 41R: TO CB111Avg. Flow Depth=0.29' Max Vel=1.41 fps Inflow=1.20 cfs 3,999 cf
n=0.017 L=50.0' S=0.0020 ' /' Capacity=13.91 cfs Outflow=1.19 cfs 3,997 cf**Reach 42R: TO AP4**Inflow=0.40 cfs 1,450 cf
Outflow=0.40 cfs 1,450 cf**Pond 7C: GW #2 CELL #1**

Peak Elev=0.00' Storage=0 cf

Pond 8C: GW #2 CELL #2

Peak Elev=0.00' Storage=0 cf

Pond 34F: FOREBAY#14Peak Elev=116.28' Storage=896 cf Inflow=1.51 cfs 5,181 cf
Outflow=1.44 cfs 4,476 cf**Pond 34P: GRAVEL WETLAND#3**Peak Elev=115.46' Storage=2,958 cf Inflow=1.44 cfs 4,476 cf
Primary=0.04 cfs 1,762 cf Secondary=0.00 cfs 0 cf Outflow=0.04 cfs 1,762 cf**Pond 47P: DITCH TURNOUT #2**Peak Elev=117.11' Storage=12 cf Inflow=0.39 cfs 1,447 cf
Outflow=0.39 cfs 1,447 cf**Pond 48P: DITCH TURNOUT #1**Peak Elev=117.11' Storage=13 cf Inflow=0.40 cfs 1,450 cf
Outflow=0.40 cfs 1,450 cf**Pond 52F: FOREBAY#11**Peak Elev=120.44' Storage=648 cf Inflow=2.38 cfs 7,985 cf
Outflow=2.31 cfs 7,504 cf**Pond 52P: BIOFILTRATION BASIN #7**Peak Elev=119.40' Storage=3,054 cf Inflow=2.31 cfs 7,504 cf
Discarded=0.19 cfs 7,045 cf Primary=0.04 cfs 425 cf Secondary=0.00 cfs 0 cf Outflow=0.23 cfs 7,470 cf**Pond 53F: FOREBAY#12**Peak Elev=116.92' Storage=891 cf Inflow=4.10 cfs 13,524 cf
Outflow=3.89 cfs 13,089 cf**Pond 53P: WET POND #3**Peak Elev=115.81' Storage=9,167 cf Inflow=3.89 cfs 13,089 cf
Primary=0.79 cfs 12,736 cf Secondary=0.00 cfs 0 cf Outflow=0.79 cfs 12,736 cf**Pond 54F: FOREBAY#10**Peak Elev=116.30' Storage=1,069 cf Inflow=3.21 cfs 13,629 cf
Outflow=3.22 cfs 12,800 cf**Pond 54P: WET POND #2**Peak Elev=116.05' Storage=9,849 cf Inflow=3.22 cfs 12,800 cf
Primary=2.14 cfs 12,521 cf Secondary=0.00 cfs 0 cf Outflow=2.14 cfs 12,521 cf**Pond 61P: SEDIMENTATION BASIN #1**Peak Elev=121.56' Storage=13,292 cf Inflow=9.43 cfs 33,724 cf
Discarded=1.21 cfs 32,780 cf Primary=0.68 cfs 918 cf Outflow=1.89 cfs 33,698 cf**Pond 62P: SEDIMENTATION BASIN #2**Peak Elev=121.62' Storage=13,458 cf Inflow=10.82 cfs 35,295 cf
Discarded=1.16 cfs 31,968 cf Primary=1.97 cfs 3,293 cf Outflow=3.12 cfs 35,261 cf**Pond 63F: FOREBAY#8**Peak Elev=119.19' Storage=706 cf Inflow=0.80 cfs 5,796 cf
Outflow=0.80 cfs 5,218 cf

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Pond 63P: BIOFILTRATIONBASIN#6 Peak Elev=117.27' Storage=1,779 cf Inflow=0.80 cfs 5,218 cf
Discarded=0.20 cfs 5,204 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.20 cfs 5,204 cf

Pond 65F: FOREBAY#9 Peak Elev=119.20' Storage=417 cf Inflow=0.84 cfs 5,907 cf
Outflow=0.84 cfs 5,589 cf

Pond 65P: GRAVEL WETLAND#2 Peak Elev=118.20' Storage=2,208 cf Inflow=0.84 cfs 5,589 cf
Primary=0.26 cfs 3,957 cf Secondary=0.00 cfs 0 cf Outflow=0.26 cfs 3,957 cf

Pond C1: GR. WETLAND#1 CELL #1 Peak Elev=0.00' Storage=0 cf

Pond C2: GR. WETLAND#1 CELL #2 Peak Elev=0.00' Storage=0 cf

Pond C3: GW #3 CELL #1 Peak Elev=0.00' Storage=0 cf

Pond C4: GW #3 CELL #2 Peak Elev=0.00' Storage=0 cf

Pond CB101: DMH-101 Peak Elev=112.09' Storage=16 cf Inflow=2.70 cfs 9,518 cf
12.0" Round Culvert n=0.012 L=72.0' S=0.0050 ' Outflow=2.70 cfs 9,517 cf

Pond CB102: CB-102 Peak Elev=113.93' Storage=16 cf Inflow=2.83 cfs 9,484 cf
12.0" Round Culvert n=0.012 L=165.0' S=0.0050 ' Outflow=2.82 cfs 9,483 cf

Pond CB103: CB-103 Peak Elev=113.30' Storage=12 cf Inflow=2.19 cfs 7,276 cf
12.0" Round Culvert n=0.012 L=180.0' S=0.0050 ' Outflow=2.19 cfs 7,275 cf

Pond CB104: CB-104 Peak Elev=114.28' Storage=11 cf Inflow=1.99 cfs 6,626 cf
12.0" Round Culvert n=0.012 L=189.0' S=0.0050 ' Outflow=1.99 cfs 6,625 cf

Pond CB105: CB-105 Peak Elev=112.67' Storage=8 cf Inflow=1.15 cfs 3,930 cf
12.0" Round Culvert n=0.012 L=218.0' S=0.0050 ' Outflow=1.15 cfs 3,929 cf

Pond CB106: CB-106 Peak Elev=114.22' Storage=9 cf Inflow=2.04 cfs 9,835 cf
18.0" Round Culvert n=0.012 L=86.0' S=0.0058 ' Outflow=2.04 cfs 9,834 cf

Pond CB111: CB-111 Peak Elev=117.64' Storage=5 cf Inflow=0.46 cfs 3,214 cf
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 ' Outflow=0.46 cfs 3,213 cf

Pond CB112: CB-112 Peak Elev=115.71' Storage=9 cf Inflow=1.19 cfs 3,997 cf
12.0" Round Culvert n=0.012 L=88.0' S=0.0051 ' Outflow=1.19 cfs 3,995 cf

Pond CB113: CB-113 Peak Elev=115.52' Storage=13 cf Inflow=2.41 cfs 7,974 cf
12.0" Round Culvert n=0.012 L=72.0' S=0.0069 ' Outflow=2.40 cfs 7,973 cf

Pond F1: FOREBAY#1 Peak Elev=113.29' Storage=3,978 cf Inflow=6.06 cfs 38,972 cf
Outflow=6.05 cfs 35,580 cf

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Type III 24-hr 10 yr Rainfall=4.82"

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Pond F2: FOREBAY#2	Peak Elev=116.22' Storage=2,343 cf Inflow=2.10 cfs 11,103 cf Outflow=2.05 cfs 9,063 cf
Pond F3: FOREBAY#3	Peak Elev=114.23' Storage=2,228 cf Inflow=2.31 cfs 12,319 cf Outflow=2.18 cfs 10,497 cf
Pond F4: FOREBAY#4	Peak Elev=112.80' Storage=3,710 cf Inflow=12.71 cfs 49,500 cf Outflow=12.54 cfs 46,784 cf
Pond F7: FOREBAY#7	Peak Elev=111.47' Storage=657 cf Inflow=3.40 cfs 14,950 cf Outflow=3.35 cfs 14,583 cf
Pond P-212: P-212	Peak Elev=110.64' Storage=118 cf Inflow=1.57 cfs 7,421 cf 12.0" Round Culvert n=0.012 L=61.0' S=0.0049 ' / ' Outflow=1.56 cfs 7,420 cf
Pond P1: BIOFILTRATIONBASIN#1	Peak Elev=111.34' Storage=5,384 cf Inflow=6.05 cfs 35,580 cf Discarded=3.18 cfs 35,552 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=3.18 cfs 35,552 cf
Pond P12: Filtera Bioscape	Peak Elev=115.82' Storage=39 cf Inflow=0.30 cfs 1,118 cf Outflow=0.30 cfs 1,118 cf
Pond P2: INFILTRATIONBASIN#2	Peak Elev=115.36' Storage=4,090 cf Inflow=2.05 cfs 9,063 cf Discarded=0.23 cfs 8,463 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.23 cfs 8,463 cf
Pond P227: P-227	Peak Elev=120.33' Storage=114 cf Inflow=0.38 cfs 2,233 cf 12.0" Round Culvert n=0.011 L=80.0' S=0.0050 ' / ' Outflow=0.38 cfs 2,211 cf
Pond P235: P-235	Peak Elev=114.74' Storage=6 cf Inflow=0.70 cfs 2,328 cf 12.0" Round Culvert n=0.012 L=50.0' S=0.0050 ' / ' Outflow=0.70 cfs 2,328 cf
Pond P238: P-238	Peak Elev=110.90' Storage=12 cf Inflow=0.96 cfs 4,054 cf 12.0" Round Culvert n=0.012 L=62.0' S=0.0050 ' / ' Outflow=0.96 cfs 4,050 cf
Pond P239: P-239	Peak Elev=115.85' Storage=11,504 cf Inflow=3.82 cfs 30,735 cf 36.0" x 18.0" Box Culvert n=0.022 L=65.0' S=0.0077 ' / ' Outflow=0.99 cfs 23,805 cf
Pond P242: P-242	Peak Elev=113.87' Storage=37 cf Inflow=8.20 cfs 43,141 cf 24.0" x 24.0" Box Culvert n=0.012 L=41.0' S=0.0195 ' / ' Outflow=8.08 cfs 43,118 cf
Pond P3: WET POND #1	Peak Elev=112.39' Storage=9,708 cf Inflow=2.18 cfs 10,497 cf Primary=0.28 cfs 9,237 cf Secondary=0.00 cfs 0 cf Outflow=0.28 cfs 9,237 cf
Pond P4: BIOFILTRATIONBASIN#4	Peak Elev=111.26' Storage=14,369 cf Inflow=12.54 cfs 46,784 cf Discarded=2.07 cfs 46,745 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=2.07 cfs 46,745 cf
Pond P5: INFILTRATIONBASIN#5	Peak Elev=116.70' Storage=8,031 cf Inflow=8.23 cfs 30,469 cf Discarded=1.20 cfs 28,149 cf Primary=1.25 cfs 2,292 cf Secondary=0.00 cfs 0 cf Outflow=2.45 cfs 30,440 cf
Pond P7: GRAVEL WETLAND#1	Peak Elev=111.82' Storage=3,945 cf Inflow=3.35 cfs 14,583 cf Primary=2.67 cfs 11,702 cf Secondary=0.00 cfs 0 cf Outflow=2.67 cfs 11,702 cf

21117-PROP-PHASE-5*Type III 24-hr 10 yr Rainfall=4.82"*

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Pond P8: DETENTION BASIN #1 Peak Elev=112.90' Storage=13,665 cf Inflow=12.36 cfs 41,393 cf
18.0" Round Culvert n=0.012 L=125.0' S=0.0050 ' Outflow=5.78 cfs 37,061 cf

Pond P9: DETENTION BASIN #2 Peak Elev=115.78' Storage=2,054 cf Inflow=1.98 cfs 7,300 cf
18.0" Round Culvert n=0.012 L=186.0' S=0.0089 ' Outflow=1.22 cfs 6,436 cf

Pond TD1: TRENCH DRAIN #1 Peak Elev=112.96' Storage=63 cf Inflow=0.60 cfs 2,208 cf
6.0" Round Culvert n=0.012 L=115.0' S=0.0050 ' Outflow=0.52 cfs 2,205 cf

Pond TD2: TRENCH DRAIN #2 Peak Elev=112.33' Storage=26 cf Inflow=0.42 cfs 1,537 cf
6.0" Round Culvert n=0.012 L=161.0' S=0.0050 ' Outflow=0.41 cfs 1,535 cf

Pond TD3: TRENCH DRAIN #3 Peak Elev=113.65' Storage=49 cf Inflow=2.32 cfs 7,984 cf
10.0" Round Culvert n=0.012 L=76.0' S=0.0164 ' Outflow=2.29 cfs 7,983 cf

Link AP1: AP #1 Inflow=19.60 cfs 427,979 cf
Primary=19.60 cfs 427,979 cf

Link AP2: AP-2 Inflow=7.23 cfs 97,877 cf
Primary=7.23 cfs 97,877 cf

Link AP3: AP #3 Inflow=5.19 cfs 61,027 cf
Primary=5.19 cfs 61,027 cf

Link AP4: AP-4 Inflow=2.86 cfs 35,938 cf
Primary=2.86 cfs 35,938 cf

Link AP5: AP-5 Inflow=0.40 cfs 2,927 cf
Primary=0.40 cfs 2,927 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 861,681 cf Average Runoff Depth = 1.01"
86.76% Pervious = 8,902,815 sf 13.24% Impervious = 1,359,134 sf

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 10S: PR-WS-10

Runoff = 6.96 cfs @ 12.10 hrs, Volume= 25,763 cf, Depth> 4.58"

Routed to Reach 1R : SWALE TO P4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
56,440	98	Roofs, HSG A
11,060	98	Roofs, HSG B
67,500	98	Weighted Average
67,500		100.00% Impervious Area

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

Summary for Subcatchment 11S: PR-WS-11

Runoff = 0.09 cfs @ 12.42 hrs, Volume= 1,120 cf, Depth> 0.27"

Routed to Pond F4 : FOREBAY #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
44,141	39	>75% Grass cover, Good, HSG A
6,342	61	>75% Grass cover, Good, HSG B
50,483	42	Weighted Average
50,483		100.00% Pervious Area

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

Summary for Subcatchment 12S: PR-WS-12

Runoff = 2.83 cfs @ 12.10 hrs, Volume= 9,484 cf, Depth> 3.70"

Routed to Pond CB102 : CB-102

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
184	39	>75% Grass cover, Good, HSG A
24,511	98	Paved parking, HSG B
6,067	61	>75% Grass cover, Good, HSG B
30,762	90	Weighted Average
6,251		20.32% Pervious Area
24,511		79.68% Impervious Area

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

Summary for Subcatchment 13S: PR-WS-13

Runoff = 0.42 cfs @ 12.10 hrs, Volume= 1,537 cf, Depth> 4.58"
 Routed to Pond TD2 : TRENCH DRAIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
4,028	98	Paved parking, HSG A
4,028		100.00% Impervious Area

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

Summary for Subcatchment 14S: PR-WS-14

Runoff = 2.32 cfs @ 12.10 hrs, Volume= 7,984 cf, Depth> 4.02"
 Routed to Pond TD3 : TRENCH DRAIN #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
21,930	98	Paved parking, HSG A
1,914	39	>75% Grass cover, Good, HSG A
23,844	93	Weighted Average
1,914		8.03% Pervious Area
21,930		91.97% Impervious Area

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

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 15S: PR-WS-15

Runoff = 5.70 cfs @ 12.10 hrs, Volume= 18,502 cf, Depth> 2.56"

Routed to Pond P8 : DETENTION BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
52,070	98	Paved parking, HSG A
29,061	39	>75% Grass cover, Good, HSG A
4,942	98	Paved parking, HSG B
767	61	>75% Grass cover, Good, HSG B
86,840	78	Weighted Average
29,828		34.35% Pervious Area
57,012		65.65% Impervious Area

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

Summary for Subcatchment 16S: PR-WS-16

Runoff = 3.56 cfs @ 12.10 hrs, Volume= 13,168 cf, Depth> 4.58"

Routed to Reach 4R : SWALE TO P4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
22,256	98	Roofs, HSG A
12,244	98	Roofs, HSG B
34,500	98	Weighted Average
34,500		100.00% Impervious Area

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

Summary for Subcatchment 17S: PR-WS-17

Runoff = 0.60 cfs @ 12.10 hrs, Volume= 2,208 cf, Depth> 4.58"

Routed to Pond TD1 : TRENCH DRAIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
1,124	98	Paved parking, HSG A
4,662	98	Paved parking, HSG B
5,786	98	Weighted Average
5,786		100.00% Impervious Area

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

Summary for Subcatchment 18S: PR-WS-18

Runoff = 5.19 cfs @ 12.99 hrs, Volume= 61,027 cf, Depth> 0.56"
 Routed to Link AP3 : AP #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
4,773	98	Roofs, HSG A
162,723	39	>75% Grass cover, Good, HSG A
70,502	96	Gravel surface, HSG A
279,406	46	2 acre lots, 12% imp, HSG A
327,390	30	Woods, Good, HSG A
87,742	61	>75% Grass cover, Good, HSG B
207,560	65	2 acre lots, 12% imp, HSG B
175,053	55	Woods, Good, HSG B
1,315,149	49	Weighted Average
1,251,940		95.19% Pervious Area
63,209		4.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0177	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
22.7	1,000	0.0110	0.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.2	450	0.0076	0.44		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
55.6	1,550	Total			

Summary for Subcatchment 19S: PR-WS-19

Runoff = 0.31 cfs @ 12.17 hrs, Volume= 1,911 cf, Depth> 0.57"
 Routed to Pond F1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
3,610	98	Paved parking, HSG A
27,247	39	>75% Grass cover, Good, HSG A
9,439	61	>75% Grass cover, Good, HSG B
40,296	49	Weighted Average
36,686		91.04% Pervious Area
3,610		8.96% Impervious Area

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

Summary for Subcatchment 20S: PR-WS-20

Runoff = 0.20 cfs @ 12.42 hrs, Volume= 1,269 cf, Depth> 0.83"
 Routed to Pond F2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
4,732	98	Paved parking, HSG A
13,658	39	>75% Grass cover, Good, HSG A
18,390	54	Weighted Average
13,658		74.27% Pervious Area
4,732		25.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	21	0.0200	0.96		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
16.1	78	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
7.1	300	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.6	399	Total			

Summary for Subcatchment 21S: PR-WS-21

Runoff = 7.74 cfs @ 12.10 hrs, Volume= 28,625 cf, Depth> 4.58"
 Routed to Pond P5 : INFILTRATION BASIN #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
32,970	98	Roofs, HSG A
42,030	98	Roofs, HSG B
75,000	98	Weighted Average
75,000		100.00% Impervious Area

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

Summary for Subcatchment 22S: PR-WS-22

Runoff = 0.50 cfs @ 12.12 hrs, Volume= 1,844 cf, Depth> 1.20"
 Routed to Pond P5 : INFILTRATION BASIN #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
1,228	39	>75% Grass cover, Good, HSG A
17,281	61	>75% Grass cover, Good, HSG B
18,509	60	Weighted Average
18,509		100.00% Pervious Area

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

Summary for Subcatchment 23S: PR-WS-23

Runoff = 1.99 cfs @ 12.10 hrs, Volume= 6,626 cf, Depth> 3.60"
 Routed to Pond CB104 : CB-104

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
18,837	98	Paved parking, HSG A
3,271	39	>75% Grass cover, Good, HSG A
22,108	89	Weighted Average
3,271		14.80% Pervious Area
18,837		85.20% Impervious Area

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

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 24S: PR-WS-24

Runoff = 1.62 cfs @ 12.10 hrs, Volume= 6,011 cf, Depth> 4.58"
 Routed to Pond P9 : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
15,750	98	Roofs, HSG A
15,750		100.00% Impervious Area

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

Summary for Subcatchment 25S: PR-WS-25

Runoff = 1.04 cfs @ 12.10 hrs, Volume= 3,399 cf, Depth> 3.20"
 Routed to Pond CB106 : CB-106

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
9,950	98	Paved parking, HSG A
2,799	39	>75% Grass cover, Good, HSG A
12,749	85	Weighted Average
2,799		21.95% Pervious Area
9,950		78.05% Impervious Area

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

Summary for Subcatchment 26S: PR-WS-26

Runoff = 1.56 cfs @ 12.30 hrs, Volume= 7,320 cf, Depth> 2.13"
 Routed to Pond F3 : FOREBAY #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
20,869	98	Paved parking, HSG A
14,440	39	>75% Grass cover, Good, HSG A
1,398	98	Paved parking, HSG B
4,520	61	>75% Grass cover, Good, HSG B
41,227	73	Weighted Average
18,960		45.99% Pervious Area
22,267		54.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	21	0.0200	0.96		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
12.2	78	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
8.0	951	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.6	1,050	Total			

Summary for Subcatchment 28S: PR-WS-28

[73] Warning: Peak may fall outside time span

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 8 cf, Depth> 0.00"
 Routed to Reach 14R : EX CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
105,633	30	Woods, Good, HSG A
105,633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	100	0.0241	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
3.2	211	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.5	225	0.1221	2.45		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.5	536	Total			

Summary for Subcatchment 29S: PR-WS-29

Runoff = 1.03 cfs @ 12.15 hrs, Volume= 3,783 cf, Depth> 2.06"
 Routed to Pond F7 : FOREBAY #7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
1,194	98	Paved parking, HSG A
0	39	>75% Grass cover, Good, HSG A
5,387	98	Paved parking, HSG B
15,501	61	>75% Grass cover, Good, HSG B
22,082	72	Weighted Average
15,501		70.20% Pervious Area
6,581		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	70	0.0100	0.93		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
9.1	382	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.4	452	Total			

Summary for Subcatchment 30S: PR-WS-30S

Runoff = 0.72 cfs @ 12.26 hrs, Volume= 3,371 cf, Depth> 1.32"
Routed to Pond P-212 : P-212

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
3,718	98	Paved parking, HSG A
13,598	39	>75% Grass cover, Good, HSG A
4,836	98	Paved parking, HSG B
8,430	61	>75% Grass cover, Good, HSG B
30,582	62	Weighted Average
22,028		72.03% Pervious Area
8,554		27.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0200	1.32		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
15.2	638	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.5	738	Total			

Summary for Subcatchment 31S: PR-WS-31

Runoff = 16.77 cfs @ 15.22 hrs, Volume= 335,253 cf, Depth> 0.92"
Routed to Link AP1 : AP #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
169,960	39	>75% Grass cover, Good, HSG A
32,494	96	Gravel surface, HSG A
691,168	81	Urban industrial, 72% imp, HSG A
484,359	30	Woods, Good, HSG A
0	61	>75% Grass cover, Good, HSG B
22,919	96	Gravel surface, HSG B
97,040	88	Urban industrial, 72% imp, HSG B
2,855,591	55	Woods, Good, HSG B
4,353,531	57	Weighted Average
3,786,021		86.96% Pervious Area
567,510		13.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0730	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.93"
3.9	210	0.0330	0.91		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
80.1	1,700	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
113.1	2,400	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
210.5	4,410	Total			

Summary for Subcatchment 32S: PR-WS-32

Runoff = 6.93 cfs @ 13.30 hrs, Volume= 87,641 cf, Depth> 0.70"
Routed to Link AP2 : AP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
123,645	39	>75% Grass cover, Good, HSG A
21,442	96	Gravel surface, HSG A
312,954	30	Woods, Good, HSG A
75,291	61	>75% Grass cover, Good, HSG B
4,383	96	Gravel surface, HSG B
757,317	55	Woods, Good, HSG B
203,794	77	Woods, Good, HSG D
1,498,826	52	Weighted Average
1,498,826		100.00% Pervious Area

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Type III 24-hr 10 yr Rainfall=4.82"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	100	0.0067	0.07		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
6.5	225	0.0067	0.57		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.3	400	0.0067	0.41		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
33.4	625	0.0039	0.31		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
79.3	1,350	Total			

Summary for Subcatchment 33S: PR-WS-33

Runoff = 0.79 cfs @ 12.37 hrs, Volume= 5,000 cf, Depth> 0.77"
 Routed to Reach 13R : P-209

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
19,038	98	Paved parking, HSG A
58,520	39	>75% Grass cover, Good, HSG A
77,558	53	Weighted Average
58,520		75.45% Pervious Area
19,038		24.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	21	0.0200	0.96		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
12.2	78	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
7.6	905	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.2	1,004	Total			

Summary for Subcatchment 34S: PR-WS-34

Runoff = 1.15 cfs @ 12.10 hrs, Volume= 3,930 cf, Depth> 3.91"
 Routed to Pond CB105 : CB-105

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
10,402	98	Paved parking, HSG A
1,147	39	>75% Grass cover, Good, HSG A
511	98	Paved parking, HSG B
12,060	92	Weighted Average
1,147		9.51% Pervious Area
10,913		90.49% Impervious Area

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

Summary for Subcatchment 35S: PR-WS-35

Runoff = 0.36 cfs @ 12.11 hrs, Volume= 1,289 cf, Depth> 1.33"
 Routed to Pond P9 : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
4,254	98	Paved parking, HSG A
7,105	39	>75% Grass cover, Good, HSG A
301	98	Paved parking, HSG B
11,660	62	Weighted Average
7,105		60.93% Pervious Area
4,555		39.07% Impervious Area

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

Summary for Subcatchment 36S: PR-WS-36

Runoff = 0.30 cfs @ 12.10 hrs, Volume= 1,118 cf, Depth> 4.58"
 Routed to Pond P12 : Filtera Bioscape

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
2,488	98	Paved parking, HSG A
440	98	Paved parking, HSG B
2,928	98	Weighted Average
2,928		100.00% Impervious Area

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Type III 24-hr 10 yr Rainfall=4.82"

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

Summary for Subcatchment 37S: PR-WS-37

Runoff = 0.20 cfs @ 12.11 hrs, Volume= 651 cf, Depth> 2.47"
 Routed to Pond CB103 : CB-103

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
2,048	98	Paved parking, HSG A
1,113	39	>75% Grass cover, Good, HSG A
3,161	77	Weighted Average
1,113		35.21% Pervious Area
2,048		64.79% Impervious Area

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

Summary for Subcatchment 40S: PR-WS-40S

Runoff = 2.01 cfs @ 12.94 hrs, Volume= 21,413 cf, Depth> 0.66"
 Routed to Link AP4 : AP-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
46,815	39	>75% Grass cover, Good, HSG A
0	65	2 acre lots, 12% imp, HSG B
40,097	30	Woods, Good, HSG A
56,052	61	>75% Grass cover, Good, HSG B
245,814	55	Woods, Good, HSG B
2,271	74	>75% Grass cover, Good, HSG C
391,049	51	Weighted Average
391,049		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0390	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.93"
9.3	550	0.0390	0.99		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.3	600	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
54.8	1,250	Total			

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 41S: PR-WS-41S

Runoff = 0.39 cfs @ 12.10 hrs, Volume= 1,447 cf, Depth> 4.58"
 Routed to Pond 47P : DITCH TURNOUT #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
3,434	98	Paved parking, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Paved parking, HSG B
0	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
357	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
3,791	98	Weighted Average
3,791		100.00% Impervious Area

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

Summary for Subcatchment 42S: PR-WS-42S

Runoff = 4.10 cfs @ 12.11 hrs, Volume= 13,524 cf, Depth> 1.98"
 Routed to Pond 53F : FOREBAY #12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
35,413	98	Paved parking, HSG A
24,193	39	>75% Grass cover, Good, HSG A
0	30	Woods, Good, HSG A
1,693	98	Paved parking, HSG B
20,710	61	>75% Grass cover, Good, HSG B
82,009	71	Weighted Average
44,903		54.75% Pervious Area
37,106		45.25% Impervious Area

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

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 43S: PR-WS-43S

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 1,450 cf, Depth> 4.58"
 Routed to Pond 48P : DITCH TURNOUT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
0	98	Paved parking, HSG A
0	39	>75% Grass cover, Good, HSG A
0	30	Woods, Good, HSG A
1,551	98	Paved parking, HSG B
0	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
2,248	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
3,799	98	Weighted Average
3,799		100.00% Impervious Area

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

Summary for Subcatchment 44S: PR-WS-44S

Runoff = 1.22 cfs @ 12.10 hrs, Volume= 3,979 cf, Depth> 3.01"
 Routed to Pond CB113 : CB-113

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
766	98	Paved parking, HSG A
233	39	>75% Grass cover, Good, HSG A
0	30	Woods, Good, HSG A
8,761	98	Paved parking, HSG B
6,112	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
0	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
15,872	83	Weighted Average
6,345		39.98% Pervious Area
9,527		60.02% Impervious Area

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

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 47S: PR-WS-47S

Runoff = 1.25 cfs @ 12.27 hrs, Volume= 5,656 cf, Depth> 2.21"
 Routed to Pond 54F : FOREBAY #10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
3,193	98	Paved parking, HSG A
3,725	39	>75% Grass cover, Good, HSG A
9,475	98	Paved parking, HSG B
14,280	61	>75% Grass cover, Good, HSG B
30,673	74	Weighted Average
18,005		58.70% Pervious Area
12,668		41.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
2.3	200	0.0050	1.44		Shallow Concentrated Flow, Paved Kv= 20.3 fps
14.3	424	0.0050	0.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.8	724	Total			

Summary for Subcatchment 48S: PR-WS-48S

Runoff = 0.81 cfs @ 12.12 hrs, Volume= 2,853 cf, Depth> 1.46"
 Routed to Pond 34F : FOREBAY #14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
10,576	39	>75% Grass cover, Good, HSG A
7,655	98	Paved parking, HSG B
4,480	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
698	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
23,409	64	Weighted Average
15,056		64.32% Pervious Area
8,353		35.68% Impervious Area

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
5.1	437	0.0050	1.44		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.3	537	Total			

Summary for Subcatchment 49S: PR-WS-49S

Runoff = 8.20 cfs @ 12.16 hrs, Volume= 43,141 cf, Depth> 0.67"
 Routed to Pond P242 : P-242

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
419	98	Paved parking, HSG A
2,668	98	Paved parking, HSG B
0	98	Paved parking, HSG C
21,595	39	>75% Grass cover, Good, HSG A
5,510	61	>75% Grass cover, Good, HSG B
410,062	46	2 acre lots, 12% imp, HSG A
23,937	65	2 acre lots, 12% imp, HSG B
90,974	81	Urban industrial, 72% imp, HSG A
25,237	88	Urban industrial, 72% imp, HSG B
95,271	30	Woods, Good, HSG A
96,738	55	Woods, Good, HSG B
772,411	51	Weighted Average
633,572		82.03% Pervious Area
138,839		17.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
5.2	450	0.0050	1.44		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	550	Total			

Summary for Subcatchment 50S: PR-WS-50S

Runoff = 0.40 cfs @ 12.51 hrs, Volume= 2,927 cf, Depth> 0.72"
 Routed to Link AP5 : AP-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
0	39	>75% Grass cover, Good, HSG A
1,133	61	>75% Grass cover, Good, HSG B
5,614	30	Woods, Good, HSG A
42,215	55	Woods, Good, HSG B
48,962	52	Weighted Average
48,962		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7	100	0.0078	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
5.8	145	0.0070	0.42		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
27.5	245	Total			

Summary for Subcatchment 51S: PR-WS-51S

Runoff = 2.38 cfs @ 12.11 hrs, Volume= 7,985 cf, Depth> 1.75"
Routed to Pond 52F : FOREBAY #11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
19,887	98	Paved parking, HSG A
17,203	39	>75% Grass cover, Good, HSG A
0	30	Woods, Good, HSG A
537	98	Paved parking, HSG B
17,122	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
54,749	68	Weighted Average
34,325		62.70% Pervious Area
20,424		37.30% Impervious Area

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

Summary for Subcatchment 52S: PR-WS-52S

Runoff = 1.20 cfs @ 12.11 hrs, Volume= 3,999 cf, Depth> 1.83"
Routed to Reach 41R : TO CB111

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
10,074	98	Paved parking, HSG A
11,614	39	>75% Grass cover, Good, HSG A
2,698	98	Paved parking, HSG B
1,909	61	>75% Grass cover, Good, HSG B
26,295	69	Weighted Average
13,523		51.43% Pervious Area
12,772		48.57% Impervious Area

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

Summary for Subcatchment 60S: PR-WS-60S

Runoff = 0.50 cfs @ 12.72 hrs, Volume= 3,697 cf, Depth> 1.44"
 Routed to Pond 65F : FOREBAY #9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
8,038	98	Paved parking, HSG A
14,104	39	>75% Grass cover, Good, HSG A
0	30	Woods, Good, HSG A
3,043	98	Paved parking, HSG B
5,515	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
30,700	64	Weighted Average
19,619		63.91% Pervious Area
11,081		36.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	100	0.0050	0.06		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
22.6	670	0.0050	0.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
48.6	770	Total			

Summary for Subcatchment 61S: PR-WS-61S

Runoff = 2.55 cfs @ 12.61 hrs, Volume= 22,592 cf, Depth> 0.56"
 Routed to Pond P239 : P-239

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
117,266	39	>75% Grass cover, Good, HSG A
44,996	96	Gravel surface, HSG A
108,137	30	Woods, Good, HSG A
10,196	61	>75% Grass cover, Good, HSG B
200,692	55	Woods, Good, HSG B
481,287	49	Weighted Average
481,287		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0730	0.19		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
21.8	917	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
30.7	1,017	Total			

Summary for Subcatchment 62S: PR-WS-62S

Runoff = 0.38 cfs @ 12.49 hrs, Volume= 2,233 cf, Depth> 1.81"
 Routed to Pond P227 : P-227

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
5,399	98	Paved parking, HSG A
6,086	39	>75% Grass cover, Good, HSG A
1,421	98	Paved parking, HSG B
1,877	61	>75% Grass cover, Good, HSG B
14,783	69	Weighted Average
7,963		53.87% Pervious Area
6,820		46.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.8	100	0.0050	0.09		Sheet Flow, Grass: Short n= 0.150 P2= 2.93"
15.5	460	0.0050	0.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.3	560	Total			

Summary for Subcatchment 63S: PR-WS-63S

Runoff = 0.46 cfs @ 12.69 hrs, Volume= 3,214 cf, Depth> 1.88"
 Routed to Pond CB111 : CB-111

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
6,321	98	Paved parking, HSG A
6,474	39	>75% Grass cover, Good, HSG A
2,403	98	Paved parking, HSG B
5,302	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
20,500	70	Weighted Average
11,776		57.44% Pervious Area
8,724		42.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	100	0.0050	0.06		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
22.0	653	0.0050	0.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
48.0	753	Total			

Summary for Subcatchment 64S: PR-WS-64S

Runoff = 0.35 cfs @ 12.73 hrs, Volume= 2,583 cf, Depth> 1.38"
 Routed to Pond 63F : FOREBAY #8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
6,197	98	Paved parking, HSG A
11,850	39	>75% Grass cover, Good, HSG A
2,087	98	Paved parking, HSG B
2,384	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
22,518	63	Weighted Average
14,234		63.21% Pervious Area
8,284		36.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	100	0.0050	0.06		Sheet Flow, Grass: Dense n= 0.240 P2= 2.93"
22.5	667	0.0050	0.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
48.5	767	Total			

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 65S: PR-WS-65S

Runoff = 0.90 cfs @ 12.15 hrs, Volume= 3,747 cf, Depth> 4.58"
 Routed to Pond F7 : FOREBAY #7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
2,999	98	Paved parking, HSG A
0	39	>75% Grass cover, Good, HSG A
6,824	98	Paved parking, HSG B
0	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
9,823	98	Weighted Average
9,823		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
8.7	750	0.0050	1.44		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.9	850	Total			

Summary for Subcatchment 66S: PR-WS-66S

Runoff = 0.96 cfs @ 12.15 hrs, Volume= 4,054 cf, Depth> 4.58"
 Routed to Pond P238 : P-238

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
4,352	98	Paved parking, HSG A
0	39	>75% Grass cover, Good, HSG A
6,277	98	Paved parking, HSG B
0	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
10,629	98	Weighted Average
10,629		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
9.1	780	0.0050	1.44		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.3	880	Total			

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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Subcatchment 67S: PR-WS-67S

Runoff = 9.43 cfs @ 12.10 hrs, Volume= 33,724 cf, Depth> 4.35"
 Routed to Pond 61P : SEDIMENTATION BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
93,025	96	Gravel surface, HSG A
0	96	Gravel surface, HSG B
0	98	Paved parking, HSG B
0	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
93,025	96	Weighted Average
93,025		100.00% Pervious Area

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

Summary for Subcatchment 68S: PR-WS-68S

Runoff = 10.82 cfs @ 12.10 hrs, Volume= 35,295 cf, Depth> 3.10"
 Routed to Pond 62P : SEDIMENTATION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

Area (sf)	CN	Description
111,078	96	Gravel surface, HSG A
0	96	Gravel surface, HSG B
0	98	Paved parking, HSG B
0	61	>75% Grass cover, Good, HSG B
25,414	30	Woods, Good, HSG A
136,492	84	Weighted Average
136,492		100.00% Pervious Area

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

Summary for Subcatchment 69S: PR-WS-69S

Runoff = 0.70 cfs @ 12.11 hrs, Volume= 2,328 cf, Depth> 3.39"
 Routed to Pond P235 : P-235

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 yr Rainfall=4.82"

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Type III 24-hr 10 yr Rainfall=4.82"

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Area (sf)	CN	Description
0	98	Paved parking, HSG A
5,746	98	Paved parking, HSG B
0	98	Paved parking, HSG C
0	39	>75% Grass cover, Good, HSG A
2,485	61	>75% Grass cover, Good, HSG B
0	46	2 acre lots, 12% imp, HSG A
0	65	2 acre lots, 12% imp, HSG B
0	81	Urban industrial, 72% imp, HSG A
0	88	Urban industrial, 72% imp, HSG B
0	30	Woods, Good, HSG A
0	55	Woods, Good, HSG B
8,231	87	Weighted Average
2,485		30.19% Pervious Area
5,746		69.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.93"
5.2	450	0.0050	1.44		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	550	Total			

Summary for Reach 1R: SWALE TO P4

Inflow Area = 67,500 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
 Inflow = 6.96 cfs @ 12.10 hrs, Volume= 25,763 cf
 Outflow = 6.55 cfs @ 12.13 hrs, Volume= 25,710 cf, Atten= 6%, Lag= 1.8 min
 Routed to Pond F4 : FOREBAY #4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.56 fps, Min. Travel Time= 2.6 min
 Avg. Velocity = 1.03 fps, Avg. Travel Time= 8.9 min

Peak Storage= 1,007 cf @ 12.13 hrs
 Average Depth at Peak Storage= 0.36' , Surface Width= 6.16'
 Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 184.11 cfs

4.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 ' / ' Top Width= 16.00'
 Length= 550.0' Slope= 0.0145 ' / '
 Inlet Invert= 118.00', Outlet Invert= 110.00'



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Type III 24-hr 10 yr Rainfall=4.82"

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Summary for Reach 2R: THROUGH WETLAND

[79] Warning: Submerged Pond P4 Primary device # 4 OUTLET by 2.00'

Inflow Area = 180,355 sf, 70.95% Impervious, Inflow Depth = 0.00" for 10 yr event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link AP1 : AP #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00' Flow Area= 60.0 sf, Capacity= 539.30 cfs

30.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 550.0' Slope= 0.0073 '/
Inlet Invert= 110.00', Outlet Invert= 106.00'



Summary for Reach 3R: TO WETLAND

Inflow Area = 201,013 sf, 61.05% Impervious, Inflow Depth = 0.00" for 10 yr event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link AP3 : AP #3

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00' Flow Area= 60.0 sf, Capacity= 1,240.22 cfs

30.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 208.0' Slope= 0.0385 '/
Inlet Invert= 110.00', Outlet Invert= 102.00'



Summary for Reach 4R: SWALE TO P4

Inflow Area = 34,500 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
 Inflow = 3.56 cfs @ 12.10 hrs, Volume= 13,168 cf
 Outflow = 3.48 cfs @ 12.12 hrs, Volume= 13,153 cf, Atten= 2%, Lag= 1.0 min
 Routed to Pond F4 : FOREBAY #4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.22 fps, Min. Travel Time= 1.6 min
 Avg. Velocity= 0.92 fps, Avg. Travel Time= 5.4 min

Peak Storage= 322 cf @ 12.12 hrs
 Average Depth at Peak Storage= 0.23' , Surface Width= 5.38'
 Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 215.89 cfs

4.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 ' / ' Top Width= 16.00'
 Length= 300.0' Slope= 0.0200 ' / '
 Inlet Invert= 116.00', Outlet Invert= 110.00'



Summary for Reach 5R: SWALE

[79] Warning: Submerged Pond P2 Primary device # 4 INLET by 1.00'

Inflow Area = 58,549 sf, 59.76% Impervious, Inflow Depth = 0.00" for 10 yr event
 Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
 Routed to Link AP3 : AP #3

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 172.96 cfs

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4.00' x 2.00' deep channel, $n=0.022$ Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 779.0' Slope= 0.0128 '/'
Inlet Invert= 114.00', Outlet Invert= 104.00'

**Summary for Reach 6R: TO AP2**

Inflow Area = 118,785 sf, 34.77% Impervious, Inflow Depth > 0.93" for 10 yr event
Inflow = 0.28 cfs @ 14.90 hrs, Volume= 9,237 cf
Outflow = 0.28 cfs @ 15.05 hrs, Volume= 9,121 cf, Atten= 0%, Lag= 9.3 min
Routed to Link AP2 : AP-2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.45 fps, Min. Travel Time= 12.5 min
Avg. Velocity = 0.41 fps, Avg. Travel Time= 13.7 min

Peak Storage= 209 cf @ 15.05 hrs
Average Depth at Peak Storage= 0.14', Surface Width= 6.51'
Bank-Full Depth= 3.00' Flow Area= 60.0 sf, Capacity= 202.90 cfs

30.00' x 3.00' deep Parabolic Channel, $n=0.022$ Earth, clean & straight
Length= 340.0' Slope= 0.0010 '/'
Inlet Invert= 110.35', Outlet Invert= 110.00'

**Summary for Reach 9R: TO AP1**

[79] Warning: Submerged Pond P5 Primary device # 1 INLET by 0.15'

Inflow Area = 93,509 sf, 80.21% Impervious, Inflow Depth = 0.29" for 10 yr event
Inflow = 1.25 cfs @ 12.44 hrs, Volume= 2,292 cf
Outflow = 0.76 cfs @ 12.68 hrs, Volume= 2,292 cf, Atten= 39%, Lag= 14.1 min
Routed to Link AP1 : AP #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.16 fps, Min. Travel Time= 22.3 min
Avg. Velocity = 0.49 fps, Avg. Travel Time= 52.6 min

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Peak Storage= 1,014 cf @ 12.68 hrs

Average Depth at Peak Storage= 0.15' , Surface Width= 6.65'

Bank-Full Depth= 3.00' Flow Area= 60.0 sf, Capacity= 508.44 cfs

30.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight

Length= 1,547.0' Slope= 0.0065 '/'

Inlet Invert= 116.00', Outlet Invert= 106.00'



Summary for Reach 12R: TO AP1

Inflow Area = 73,116 sf, 48.67% Impervious, Inflow Depth > 1.92" for 10 yr event

Inflow = 2.67 cfs @ 12.32 hrs, Volume= 11,702 cf

Outflow = 0.78 cfs @ 12.88 hrs, Volume= 10,993 cf, Atten= 71%, Lag= 33.8 min

Routed to Link AP1 : AP #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.66 fps, Min. Travel Time= 79.0 min

Avg. Velocity= 0.37 fps, Avg. Travel Time= 141.7 min

Peak Storage= 3,682 cf @ 12.88 hrs

Average Depth at Peak Storage= 0.22' , Surface Width= 8.07'

Bank-Full Depth= 3.00' Flow Area= 60.0 sf, Capacity= 225.35 cfs

30.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight

Length= 3,150.0' Slope= 0.0013 '/'

Inlet Invert= 110.00', Outlet Invert= 106.00'



Summary for Reach 13R: P-209

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 77,558 sf, 24.55% Impervious, Inflow Depth > 0.77" for 10 yr event

Inflow = 0.79 cfs @ 12.37 hrs, Volume= 5,000 cf

Outflow = 0.79 cfs @ 12.37 hrs, Volume= 4,998 cf, Atten= 0%, Lag= 0.2 min

Routed to Pond F3 : FOREBAY #3

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Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 3.61 fps, Min. Travel Time= 0.3 min

Avg. Velocity = 1.88 fps, Avg. Travel Time= 0.5 min

Peak Storage= 13 cf @ 12.37 hrs

Average Depth at Peak Storage= 0.32' , Surface Width= 0.93'

Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.52 cfs

12.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

Length= 60.0' Slope= 0.0083 '/

Inlet Invert= 112.50', Outlet Invert= 112.00'



Summary for Reach 14R: EX CULVERT

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 105,633 sf, 0.00% Impervious, Inflow Depth > 0.00" for 10 yr event

Inflow = 0.00 cfs @ 24.00 hrs, Volume= 8 cf

Outflow = 0.00 cfs @ 24.00 hrs, Volume= 7 cf, Atten= 0%, Lag= 0.0 min

Routed to Link AP2 : AP-2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.55 fps, Min. Travel Time= 1.8 min

Avg. Velocity = 0.51 fps, Avg. Travel Time= 1.9 min

Peak Storage= 0 cf @ 24.00 hrs

Average Depth at Peak Storage= 0.01' , Surface Width= 0.26'

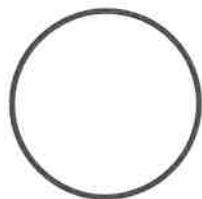
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe

n= 0.012 Concrete pipe, finished

Length= 60.0' Slope= 0.0100 '/

Inlet Invert= 114.25', Outlet Invert= 113.65'



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Summary for Reach 15R: THROUGH WETLAND

[79] Warning: Submerged Pond P12 Primary device # 1 OUTLET by 0.08'

Inflow Area = 2,928 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
Inflow = 0.30 cfs @ 12.14 hrs, Volume= 1,118 cf
Outflow = 0.15 cfs @ 12.35 hrs, Volume= 1,108 cf, Atten= 49%, Lag= 12.6 min
Routed to Link AP2 : AP-2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.51 fps, Min. Travel Time= 25.5 min
Avg. Velocity = 0.26 fps, Avg. Travel Time= 49.0 min

Peak Storage= 235 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.09', Surface Width= 5.14'
Bank-Full Depth= 3.00' Flow Area= 60.0 sf, Capacity= 312.69 cfs

30.00' x 3.00' deep Parabolic Channel, n= 0.025 Earth, clean & winding
Length= 776.0' Slope= 0.0032 '/'
Inlet Invert= 112.45', Outlet Invert= 110.00'

‡

Summary for Reach 31R: TO CULVERT

[81] Warning: Exceeded Pond 65P by 1.76' @ 0.50 hrs

Inflow Area = 45,483 sf, 39.36% Impervious, Inflow Depth > 1.04" for 10 yr event
Inflow = 0.26 cfs @ 13.68 hrs, Volume= 3,957 cf
Outflow = 0.26 cfs @ 13.76 hrs, Volume= 3,933 cf, Atten= 1%, Lag= 5.2 min
Routed to Pond P239 : P-239

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.92 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.65 fps, Avg. Travel Time= 8.7 min

Peak Storage= 96 cf @ 13.76 hrs
Average Depth at Peak Storage= 0.07', Surface Width= 5.76'
Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 326.21 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 338.0' Slope= 0.0101 '/'
Inlet Invert= 118.76', Outlet Invert= 115.35'



Summary for Reach 32R: TO AP1

[79] Warning: Submerged Pond P239 Primary device # 1 OUTLET by 0.32'

Inflow Area = 756,287 sf, 2.37% Impervious, Inflow Depth > 0.38" for 10 yr event
 Inflow = 0.99 cfs @ 14.57 hrs, Volume= 23,805 cf
 Outflow = 0.90 cfs @ 15.75 hrs, Volume= 22,233 cf, Atten= 9%, Lag= 70.7 min
 Routed to Link AP1 : AP #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.92 fps, Min. Travel Time= 61.1 min
 Avg. Velocity = 0.76 fps, Avg. Travel Time= 74.0 min

Peak Storage= 3,311 cf @ 15.75 hrs
 Average Depth at Peak Storage= 0.17' , Surface Width= 8.73'
 Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 188.06 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 3,355.0' Slope= 0.0034 ' '
 Inlet Invert= 115.25', Outlet Invert= 104.00'



Summary for Reach 33R: TO AP1

[81] Warning: Exceeded Pond 34P by 6.03' @ 11.90 hrs
 [81] Warning: Exceeded Pond 34P by 6.03' @ 11.90 hrs
 [81] Warning: Exceeded Pond 47P by 3.28' @ 12.55 hrs
 [81] Warning: Exceeded Pond P242 by 9.03' @ 11.85 hrs

Inflow Area = 807,842 sf, 19.40% Impervious, Inflow Depth > 0.69" for 10 yr event
 Inflow = 8.44 cfs @ 12.16 hrs, Volume= 46,326 cf
 Outflow = 4.77 cfs @ 12.48 hrs, Volume= 45,217 cf, Atten= 43%, Lag= 19.5 min
 Routed to Link AP1 : AP #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.88 fps, Min. Travel Time= 22.9 min
 Avg. Velocity = 0.74 fps, Avg. Travel Time= 58.6 min

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Peak Storage= 6,540 cf @ 12.48 hrs

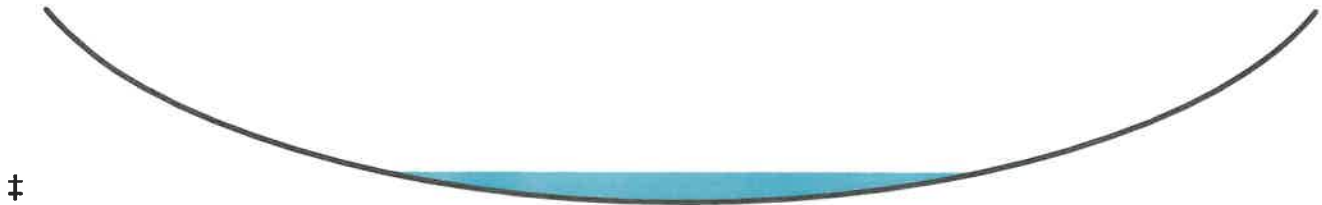
Average Depth at Peak Storage= 0.32' , Surface Width= 11.95'

Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 255.51 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight

Length= 2,585.0' Slope= 0.0062 '/'

Inlet Invert= 120.00', Outlet Invert= 104.00'



Summary for Reach 35R: TO WETLAND

Inflow Area = 54,749 sf, 37.30% Impervious, Inflow Depth = 0.09" for 10 yr event

Inflow = 0.04 cfs @ 13.55 hrs, Volume= 425 cf

Outflow = 0.04 cfs @ 13.57 hrs, Volume= 425 cf, Atten= 0%, Lag= 1.3 min

Routed to Link AP4 : AP-4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.66 fps, Min. Travel Time= 1.9 min

Avg. Velocity = 0.57 fps, Avg. Travel Time= 2.2 min

Peak Storage= 4 cf @ 13.57 hrs

Average Depth at Peak Storage= 0.03' , Surface Width= 3.38'

Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 435.72 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight

Length= 75.0' Slope= 0.0180 '/'

Inlet Invert= 116.90', Outlet Invert= 115.55'



Summary for Reach 36R: TO AP1

Inflow Area = 43,018 sf, 39.54% Impervious, Inflow Depth = 0.00" for 10 yr event

Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routed to Link AP1 : AP #1

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Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs

Average Depth at Peak Storage= 0.00'

Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 156.16 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight

Length= 3,525.0' Slope= 0.0023 '/'

Inlet Invert= 114.05', Outlet Invert= 105.90'



Summary for Reach 37R: TO CULVERT

Inflow Area = 229,517 sf, 0.00% Impervious, Inflow Depth = 0.22" for 10 yr event

Inflow = 2.59 cfs @ 12.50 hrs, Volume= 4,212 cf

Outflow = 1.35 cfs @ 12.73 hrs, Volume= 4,210 cf, Atten= 48%, Lag= 14.2 min

Routed to Pond P239 : P-239

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.96 fps, Min. Travel Time= 24.7 min

Avg. Velocity = 0.30 fps, Avg. Travel Time= 80.6 min

Peak Storage= 2,003 cf @ 12.73 hrs

Average Depth at Peak Storage= 0.21', Surface Width= 9.81'

Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 169.60 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight

Length= 1,430.0' Slope= 0.0027 '/'

Inlet Invert= 119.25', Outlet Invert= 115.35'



Summary for Reach 39R: TO AP4

[81] Warning: Exceeded Pond 53P by 1.35' @ 0.50 hrs

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Inflow Area = 82,009 sf, 45.25% Impervious, Inflow Depth > 1.86" for 10 yr event
Inflow = 0.79 cfs @ 12.65 hrs, Volume= 12,736 cf
Outflow = 0.78 cfs @ 12.85 hrs, Volume= 12,650 cf, Atten= 1%, Lag= 12.1 min
Routed to Link AP4 : AP-4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.92 fps, Min. Travel Time= 10.2 min
Avg. Velocity= 0.61 fps, Avg. Travel Time= 15.3 min

Peak Storage= 482 cf @ 12.85 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 8.32'
Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 201.27 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 565.0' Slope= 0.0038 '/
Inlet Invert= 115.50', Outlet Invert= 113.33'



Summary for Reach 40R: TO AP1

[79] Warning: Submerged Pond 54P Primary device # 2 OUTLET by 0.18'

Inflow Area = 72,840 sf, 48.01% Impervious, Inflow Depth > 2.06" for 10 yr event
Inflow = 2.14 cfs @ 12.39 hrs, Volume= 12,521 cf
Outflow = 1.07 cfs @ 12.88 hrs, Volume= 11,992 cf, Atten= 50%, Lag= 29.8 min
Routed to Link AP1 : AP #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.97 fps, Min. Travel Time= 54.3 min
Avg. Velocity= 0.59 fps, Avg. Travel Time= 90.1 min

Peak Storage= 3,480 cf @ 12.88 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 9.05'
Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 191.25 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 3,172.0' Slope= 0.0035 '/
Inlet Invert= 115.00', Outlet Invert= 104.00'



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Summary for Reach 41R: TO CB111

Inflow Area = 26,295 sf, 48.57% Impervious, Inflow Depth > 1.83" for 10 yr event
 Inflow = 1.20 cfs @ 12.11 hrs, Volume= 3,999 cf
 Outflow = 1.19 cfs @ 12.12 hrs, Volume= 3,997 cf, Atten= 0%, Lag= 0.4 min
 Routed to Pond CB112 : CB-112

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.41 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 0.49 fps, Avg. Travel Time= 1.7 min

Peak Storage= 42 cf @ 12.12 hrs
 Average Depth at Peak Storage= 0.29' , Surface Width= 3.76'
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 13.91 cfs

2.00' x 1.00' deep channel, n= 0.017 Concrete, unfinished
 Side Slope Z-value= 3.0 ' / ' Top Width= 8.00'
 Length= 50.0' Slope= 0.0020 ' / '
 Inlet Invert= 120.90', Outlet Invert= 120.80'

**Summary for Reach 42R: TO AP4**

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

Inflow Area = 3,799 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
 Inflow = 0.40 cfs @ 12.09 hrs, Volume= 1,450 cf
 Outflow = 0.40 cfs @ 12.09 hrs, Volume= 1,450 cf, Atten= 0%, Lag= 0.0 min
 Routed to Link AP4 : AP-4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Pond 7C: GW #2 CELL #1

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description		
#1	117.00'	870 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.00	690	106.6	0	0	690
118.00	1,063	131.1	870	870	1,168

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Summary for Pond 8C: GW #2 CELL #2

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description		
#1	117.00'	870 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.00	690	106.6	0	0	690
118.00	1,063	131.1	870	870	1,168

Summary for Pond 34F: FOREBAY #14

[81] Warning: Exceeded Pond P235 by 1.72' @ 23.95 hrs

Inflow Area = 31,640 sf, 44.56% Impervious, Inflow Depth > 1.96" for 10 yr event
 Inflow = 1.51 cfs @ 12.11 hrs, Volume= 5,181 cf
 Outflow = 1.44 cfs @ 12.15 hrs, Volume= 4,476 cf, Atten= 5%, Lag= 2.0 min
 Primary = 1.44 cfs @ 12.15 hrs, Volume= 4,476 cf
 Routed to Pond 34P : GRAVEL WETLAND #3

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 116.28' @ 12.15 hrs Surf.Area= 778 sf Storage= 896 cf

Plug-Flow detention time= 91.8 min calculated for 4,476 cf (86% of inflow)
 Center-of-Mass det. time= 30.3 min (868.4 - 838.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	1,572 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.00	108	39.5	0	0	108
116.00	666	111.8	695	695	992
117.00	1,108	148.0	878	1,572	1,751

Device	Routing	Invert	Outlet Devices											
#1	Primary	116.00'	4.0' long x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66		
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Primary OutFlow Max=1.42 cfs @ 12.15 hrs HW=116.28' (Free Discharge)

↑1=Broad-Crested Rectangular Weir(Weir Controls 1.42 cfs @ 1.29 fps)

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Summary for Pond 34P: GRAVEL WETLAND #3

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 31,640 sf, 44.56% Impervious, Inflow Depth > 1.70" for 10 yr event
 Inflow = 1.44 cfs @ 12.15 hrs, Volume= 4,476 cf
 Outflow = 0.04 cfs @ 17.94 hrs, Volume= 1,762 cf, Atten= 97%, Lag= 348.0 min
 Primary = 0.04 cfs @ 17.94 hrs, Volume= 1,762 cf
 Routed to Reach 33R : TO AP1
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 33R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 115.46' @ 17.94 hrs Surf.Area= 4,892 sf Storage= 2,958 cf

Plug-Flow detention time= 354.7 min calculated for 1,762 cf (39% of inflow)
 Center-of-Mass det. time= 219.5 min (1,087.9 - 868.4)

Volume	Invert	Avail.Storage	Storage Description
#1	114.00'	905 cf	CELL #1 (Irregular) Listed below (Recalc)
#2	114.00'	905 cf	CELL #2 (Irregular) Listed below (Recalc)
#3	115.00'	6,252 cf	PONDING AREA (Irregular) Listed below (Recalc)
		8,062 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.00	717	120.0	0	0	717
115.00	1,106	138.8	905	905	1,125

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.00	718	120.0	0	0	718
115.00	1,106	138.8	905	905	1,126

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
115.00	2,332	253.5	0	0	2,332
116.00	3,121	272.3	2,717	2,717	3,161
117.00	3,966	291.1	3,535	6,252	4,050

Device	Routing	Invert	Outlet Devices
#1	Primary	113.65'	12.0" Round Culvert L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.65' / 113.50' S= 0.0050 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	113.66'	1.1" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	116.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

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#4 Primary 115.60' **4.0' long TOP OF WEIR PLATE** 2 End Contraction(s)**Primary OutFlow** Max=0.04 cfs @ 17.94 hrs HW=115.46' (Free Discharge)↑ **1=Culvert** (Passes 0.04 cfs of 3.82 cfs potential flow)↑ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.37 fps)↑ **4=TOP OF WEIR PLATE** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=114.00' (Free Discharge)↑ **3=EMERGENCY OVERFLOW** (Controls 0.00 cfs)**Summary for Pond 47P: DITCH TURNOUT #2**

Inflow Area = 3,791 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event

Inflow = 0.39 cfs @ 12.10 hrs, Volume= 1,447 cf

Outflow = 0.39 cfs @ 12.11 hrs, Volume= 1,447 cf, Atten= 0%, Lag= 0.4 min

Primary = 0.39 cfs @ 12.11 hrs, Volume= 1,447 cf

Routed to Reach 33R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 117.11' @ 12.11 hrs Surf.Area= 133 sf Storage= 12 cf

Plug-Flow detention time= 1.0 min calculated for 1,447 cf (100% of inflow)

Center-of-Mass det. time= 0.8 min (749.9 - 749.0)

Volume	Invert	Avail.Storage	Storage Description
#1	117.00'	358 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.00	95	170.3	0	0	95
118.00	719	238.0	358	358	2,304

Device	Routing	Invert	Outlet Devices
#1	Primary	117.00'	50.00' long x 2.00' breadth x 1.00' high LEVEL SPREADER Rock Diam.= 4.000", S.D.= 2.000", Voids= 40.0%

Primary OutFlow Max=0.38 cfs @ 12.11 hrs HW=117.10' (Free Discharge)↑ **1=LEVEL SPREADER** (Rockfill Controls 0.38 cfs @ 0.15 fps)**Summary for Pond 48P: DITCH TURNOUT #1**

Inflow Area = 3,799 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event

Inflow = 0.40 cfs @ 12.09 hrs, Volume= 1,450 cf

Outflow = 0.40 cfs @ 12.09 hrs, Volume= 1,450 cf, Atten= 0%, Lag= 0.5 min

Primary = 0.40 cfs @ 12.09 hrs, Volume= 1,450 cf

Routed to Reach 42R : TO AP4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 117.11' @ 12.09 hrs Surf.Area= 139 sf Storage= 13 cf

Plug-Flow detention time= 1.1 min calculated for 1,447 cf (100% of inflow)

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Center-of-Mass det. time= 0.9 min (749.1 - 748.2)

Volume	Invert	Avail.Storage	Storage Description
#1	117.00'	344 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.00	102	172.0	0	0	102
118.00	670	202.0	344	344	1,014

Device	Routing	Invert	Outlet Devices
#1	Primary	117.00'	50.00' long x 2.00' breadth x 1.00' high LEVEL SPREADER Rock Diam.= 4.000", S.D.= 2.000", Voids= 40.0%

Primary OutFlow Max=0.40 cfs @ 12.09 hrs HW=117.11' (Free Discharge)↑**1=LEVEL SPREADER** (Rockfill Controls 0.40 cfs @ 0.15 fps)**Summary for Pond 52F: FOREBAY #11**

Inflow Area = 54,749 sf, 37.30% Impervious, Inflow Depth > 1.75" for 10 yr event
 Inflow = 2.38 cfs @ 12.11 hrs, Volume= 7,985 cf
 Outflow = 2.31 cfs @ 12.13 hrs, Volume= 7,504 cf, Atten= 3%, Lag= 1.1 min
 Primary = 2.31 cfs @ 12.13 hrs, Volume= 7,504 cf
 Routed to Pond 52P : BIOFILTRATION BASIN #7

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 120.44' @ 12.13 hrs Surf.Area= 820 sf Storage= 648 cf

Plug-Flow detention time= 43.0 min calculated for 7,488 cf (94% of inflow)
 Center-of-Mass det. time= 12.0 min (867.1 - 855.1)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	1,249 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
119.00	249	66.2	0	0	249
120.00	487	92.7	361	361	593
121.00	1,362	395.6	888	1,249	12,366

Device	Routing	Invert	Outlet Devices
#1	Primary	120.20'	8.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=2.26 cfs @ 12.13 hrs HW=120.44' (Free Discharge)↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.26 cfs @ 1.18 fps)

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Summary for Pond 52P: BIOFILTRATION BASIN #7

Inflow Area = 54,749 sf, 37.30% Impervious, Inflow Depth > 1.64" for 10 yr event
 Inflow = 2.31 cfs @ 12.13 hrs, Volume= 7,504 cf
 Outflow = 0.23 cfs @ 13.55 hrs, Volume= 7,470 cf, Atten= 90%, Lag= 85.5 min
 Discarded = 0.19 cfs @ 13.55 hrs, Volume= 7,045 cf
 Primary = 0.04 cfs @ 13.55 hrs, Volume= 425 cf
 Routed to Reach 35R : TO WETLAND
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 35R : TO WETLAND

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 119.40' @ 13.55 hrs Surf.Area= 7,904 sf Storage= 3,054 cf

Plug-Flow detention time= 154.5 min calculated for 7,454 cf (99% of inflow)
 Center-of-Mass det. time= 151.6 min (1,018.7 - 867.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	119.00'	17,202 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
119.00	7,465	366.6	0	0	7,465
120.00	8,593	385.5	8,022	8,022	8,657
121.00	9,778	404.3	9,179	17,202	9,903

Device	Routing	Invert	Outlet Devices
#1	Discarded	119.00'	0.970 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 115.00'
#2	Secondary	120.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Primary	119.00'	12.0" Round Culvert L= 28.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 119.00' / 117.70' S= 0.0464 ' S Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#4	Device 3	119.25'	3.0" Vert. WQV C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.19 cfs @ 13.55 hrs HW=119.40' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.19 cfs)

Primary OutFlow Max=0.04 cfs @ 13.55 hrs HW=119.40' (Free Discharge)
 ↑ **3=Culvert** (Passes 0.04 cfs of 0.55 cfs potential flow)
 ↑ **4=WQV** (Orifice Controls 0.04 cfs @ 1.31 fps)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=119.00' (Free Discharge)
 ↑ **2=EMERGENCY OVERFLOW** (Controls 0.00 cfs)

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Summary for Pond 53F: FOREBAY #12

Inflow Area = 82,009 sf, 45.25% Impervious, Inflow Depth > 1.98" for 10 yr event
 Inflow = 4.10 cfs @ 12.11 hrs, Volume= 13,524 cf
 Outflow = 3.89 cfs @ 12.14 hrs, Volume= 13,089 cf, Atten= 5%, Lag= 1.9 min
 Primary = 3.89 cfs @ 12.14 hrs, Volume= 13,089 cf
 Routed to Pond 53P : WET POND #3

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 116.92' @ 12.14 hrs Surf.Area= 1,223 sf Storage= 891 cf

Plug-Flow detention time= 26.0 min calculated for 13,061 cf (97% of inflow)
 Center-of-Mass det. time= 8.5 min (855.7 - 847.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	115.00'	3,701 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
115.00	111	40.1	0	0	111
116.00	342	77.8	216	216	470
117.00	1,332	411.0	783	999	13,433
118.00	4,363	1,028.0	2,702	3,701	84,090

Device	Routing	Invert	Outlet Devices											
#1	Primary	116.40'	4.0' long x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66		
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Primary OutFlow Max=3.83 cfs @ 12.14 hrs HW=116.91' (Free Discharge)
 1=Broad-Crested Rectangular Weir(Weir Controls 3.83 cfs @ 1.87 fps)

Summary for Pond 53P: WET POND #3

Inflow Area = 82,009 sf, 45.25% Impervious, Inflow Depth > 1.92" for 10 yr event
 Inflow = 3.89 cfs @ 12.14 hrs, Volume= 13,089 cf
 Outflow = 0.79 cfs @ 12.65 hrs, Volume= 12,736 cf, Atten= 80%, Lag= 30.5 min
 Primary = 0.79 cfs @ 12.65 hrs, Volume= 12,736 cf
 Routed to Reach 39R : TO AP4
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 39R : TO AP4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Automatic Starting Elev= 114.15' Surf.Area= 2,191 sf Storage= 4,575 cf
 Peak Elev= 115.81' @ 12.65 hrs Surf.Area= 3,369 sf Storage= 9,167 cf (4,592 cf above start)

Plug-Flow detention time= 254.0 min calculated for 8,161 cf (62% of inflow)
 Center-of-Mass det. time= 60.1 min (915.7 - 855.7)

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Volume	Invert	Avail.Storage	Storage Description		
#1	108.00'	18,663 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
108.00	14	32.5	0	0	14
110.00	320	69.8	267	267	334
112.00	852	107.5	1,129	1,397	895
114.00	2,097	193.3	2,857	4,254	2,971
116.00	3,516	256.2	5,552	9,806	5,265
118.00	5,409	336.9	8,857	18,663	9,120

Device	Routing	Invert	Outlet Devices											
#1	Secondary	117.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW											
			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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66											
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32											
#2	Primary	114.15'	18.0" Round Culvert											
			L= 30.0' CPP, mitered to conform to fill, Ke= 0.700											
			Inlet / Outlet Invert= 114.15' / 114.00' S= 0.0050 ' S Cc= 0.900											
			n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf											
#3	Device 2	116.65'	4.0' long TOP OF WEIR PLATE Cv= 2.62 (C= 3.28)											
#4	Device 2	114.15'	5.0" Vert. Orifice/Grate (WQV) C= 0.600											
			Limited to weir flow at low heads											

Primary OutFlow Max=0.79 cfs @ 12.65 hrs HW=115.81' (Free Discharge)↑ **2=Culvert** (Passes 0.79 cfs of 6.61 cfs potential flow)↑ **3=TOP OF WEIR PLATE** (Controls 0.00 cfs)↑ **4=Orifice/Grate (WQV)** (Orifice Controls 0.79 cfs @ 5.81 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=114.15' (Free Discharge)↑ **1=EMERGENCY OVERFLOW** (Controls 0.00 cfs)**Summary for Pond 54F: FOREBAY #10**

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

[81] Warning: Exceeded Pond CB113 by 1.42' @ 23.95 hrs

Inflow Area = 72,840 sf, 48.01% Impervious, Inflow Depth > 2.25" for 10 yr event
 Inflow = 3.21 cfs @ 12.13 hrs, Volume= 13,629 cf
 Outflow = 3.22 cfs @ 12.15 hrs, Volume= 12,800 cf, Atten= 0%, Lag= 1.2 min
 Primary = 3.22 cfs @ 12.15 hrs, Volume= 12,800 cf
 Routed to Pond 54P : WET POND #2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 116.30' @ 12.15 hrs Surf.Area= 917 sf Storage= 1,069 cf

Plug-Flow detention time= 45.5 min calculated for 12,773 cf (94% of inflow)
 Center-of-Mass det. time= 14.2 min (854.7 - 840.4)

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Volume	Invert	Avail.Storage	Storage Description
#1	114.00'	3,520 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.00	139	45.5	0	0	139
115.00	386	82.8	252	252	525
116.00	767	125.2	566	818	1,235
117.00	1,322	178.5	1,032	1,850	2,532
118.00	2,044	232.0	1,670	3,520	4,291

Device	Routing	Invert	Outlet Devices
#1	Primary	116.00'	8.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=3.20 cfs @ 12.15 hrs HW=116.30' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir**(Weir Controls 3.20 cfs @ 1.34 fps)

Summary for Pond 54P: WET POND #2

[79] Warning: Submerged Pond 54F Primary device # 1 by 0.05'

Inflow Area = 72,840 sf, 48.01% Impervious, Inflow Depth > 2.11" for 10 yr event
 Inflow = 3.22 cfs @ 12.15 hrs, Volume= 12,800 cf
 Outflow = 2.14 cfs @ 12.39 hrs, Volume= 12,521 cf, Atten= 33%, Lag= 14.1 min
 Primary = 2.14 cfs @ 12.39 hrs, Volume= 12,521 cf
 Routed to Reach 40R : TO AP1
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 40R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Automatic Starting Elev= 115.25' Surf.Area= 2,633 sf Storage= 7,539 cf
 Peak Elev= 116.05' @ 12.39 hrs Surf.Area= 3,135 sf Storage= 9,849 cf (2,310 cf above start)

Plug-Flow detention time= 320.4 min calculated for 4,982 cf (39% of inflow)
 Center-of-Mass det. time= 21.4 min (876.0 - 854.7)

Volume	Invert	Avail.Storage	Storage Description
#1	108.00'	17,277 cf	Custom Stage Data (Irregular) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
108.00	42	32.9	0	0	42
109.00	177	54.1	102	102	195
110.00	400	80.1	281	383	481
111.00	684	102.3	536	918	816
112.00	1,034	124.5	853	1,771	1,232
113.00	1,451	146.7	1,237	3,008	1,730
114.00	1,935	168.9	1,687	4,695	2,309
115.00	2,485	191.0	2,204	6,900	2,967
116.00	3,101	213.2	2,787	9,687	3,710
117.00	3,784	235.4	3,437	13,124	4,533
118.00	4,533	257.5	4,153	17,277	5,434

Device	Routing	Invert	Outlet Devices
#1	Device 2	116.75'	4.0' long TOP OF WEIR 2 End Contraction(s)
#2	Primary	115.25'	18.0" Round Culvert L= 32.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 115.25' / 115.00' S= 0.0078 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#3	Device 2	115.25'	12.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	117.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=2.14 cfs @ 12.39 hrs HW=116.05' (Free Discharge)↑ **2=Culvert** (Passes 2.14 cfs of 2.34 cfs potential flow)↑ **1=TOP OF WEIR** (Controls 0.00 cfs)↑ **3=Orifice/Grate** (Orifice Controls 2.14 cfs @ 3.21 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=115.25' (Free Discharge)↑ **4=EMERGENCY OVERFLOW** (Controls 0.00 cfs)**Summary for Pond 61P: SEDIMENTATION BASIN #1**

Inflow Area = 93,025 sf, 0.00% Impervious, Inflow Depth > 4.35" for 10 yr event

Inflow = 9.43 cfs @ 12.10 hrs, Volume= 33,724 cf

Outflow = 1.89 cfs @ 12.54 hrs, Volume= 33,698 cf, Atten= 80%, Lag= 26.4 min

Discarded = 1.21 cfs @ 12.54 hrs, Volume= 32,780 cf

Primary = 0.68 cfs @ 12.54 hrs, Volume= 918 cf

Routed to Reach 37R : TO CULVERT

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 121.56' @ 12.54 hrs Surf.Area= 14,296 sf Storage= 13,292 cf

Plug-Flow detention time= 109.4 min calculated for 33,698 cf (100% of inflow)

Center-of-Mass det. time= 108.9 min (872.6 - 763.7)

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Volume	Invert	Avail.Storage	Storage Description			
#1	120.00'	20,492 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
120.00	3,856	324.2	0	0	3,856	
122.00	18,448	621.6	20,492	20,492	26,260	
Device	Routing	Invert	Outlet Devices			
#1	Primary	121.50'	20.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32			
#2	Discarded	120.00'	3.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 116.00'			

Discarded OutFlow Max=1.21 cfs @ 12.54 hrs HW=121.56' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.21 cfs)

Primary OutFlow Max=0.68 cfs @ 12.54 hrs HW=121.56' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.68 cfs @ 0.58 fps)

Summary for Pond 62P: SEDIMENTATION BASIN #2

Inflow Area = 136,492 sf, 0.00% Impervious, Inflow Depth > 3.10" for 10 yr event
 Inflow = 10.82 cfs @ 12.10 hrs, Volume= 35,295 cf
 Outflow = 3.12 cfs @ 12.47 hrs, Volume= 35,261 cf, Atten= 71%, Lag= 22.0 min
 Discarded = 1.16 cfs @ 12.47 hrs, Volume= 31,968 cf
 Primary = 1.97 cfs @ 12.47 hrs, Volume= 3,293 cf
 Routed to Reach 37R : TO CULVERT

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 121.62' @ 12.47 hrs Surf.Area= 14,147 sf Storage= 13,458 cf

Plug-Flow detention time= 118.0 min calculated for 35,261 cf (100% of inflow)
 Center-of-Mass det. time= 117.4 min (929.7 - 812.3)

Volume	Invert	Avail.Storage	Storage Description			
#1	120.00'	19,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
120.00	3,623	367.8	0	0	3,623	
122.00	17,622	663.8	19,490	19,490	27,944	
Device	Routing	Invert	Outlet Devices			
#1	Primary	121.50'	20.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66			

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#2 Discarded 120.00' 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
3.000 in/hr Exfiltration over Surface area
 Conductivity to Groundwater Elevation = 115.00'

Discarded OutFlow Max=1.16 cfs @ 12.47 hrs HW=121.62' (Free Discharge)↑**2=Exfiltration** (Controls 1.16 cfs)**Primary OutFlow** Max=1.94 cfs @ 12.47 hrs HW=121.62' (Free Discharge)↑**1=Broad-Crested Rectangular Weir**(Weir Controls 1.94 cfs @ 0.82 fps)**Summary for Pond 63F: FOREBAY #8**

[81] Warning: Exceeded Pond CB111 by 1.70' @ 23.95 hrs

Inflow Area = 43,018 sf, 39.54% Impervious, Inflow Depth > 1.62" for 10 yr event
 Inflow = 0.80 cfs @ 12.71 hrs, Volume= 5,796 cf
 Outflow = 0.80 cfs @ 12.74 hrs, Volume= 5,218 cf, Atten= 0%, Lag= 2.2 min
 Primary = 0.80 cfs @ 12.74 hrs, Volume= 5,218 cf
 Routed to Pond 63P : BIOFILTRATION BASIN #6

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 119.19' @ 12.74 hrs Surf.Area= 793 sf Storage= 706 cf

Plug-Flow detention time= 65.8 min calculated for 5,207 cf (90% of inflow)
 Center-of-Mass det. time= 20.5 min (910.7 - 890.1)

Volume	Invert	Avail.Storage	Storage Description
#1	117.00'	1,576 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.00	71	32.0	0	0	71
118.00	219	56.1	138	138	246
120.00	1,386	318.0	1,437	1,576	8,051

Device	Routing	Invert	Outlet Devices
#1	Primary	119.00'	4.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.80 cfs @ 12.74 hrs HW=119.19' (Free Discharge)↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.80 cfs @ 1.04 fps)

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Summary for Pond 63P: BIOFILTRATION BASIN #6

Inflow Area = 43,018 sf, 39.54% Impervious, Inflow Depth > 1.46" for 10 yr event
 Inflow = 0.80 cfs @ 12.74 hrs, Volume= 5,218 cf
 Outflow = 0.20 cfs @ 14.12 hrs, Volume= 5,204 cf, Atten= 75%, Lag= 82.7 min
 Discarded = 0.20 cfs @ 14.12 hrs, Volume= 5,204 cf
 Primary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 36R : TO AP1
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 36R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 117.27' @ 14.12 hrs Surf.Area= 1,770 sf Storage= 1,779 cf

Plug-Flow detention time= 100.5 min calculated for 5,193 cf (100% of inflow)
 Center-of-Mass det. time= 98.9 min (1,009.6 - 910.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	116.00'	9,123 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
116.00	1,064	180.0	0	0	1,064
118.00	2,257	217.7	3,247	3,247	2,322
120.00	3,676	255.4	5,876	9,123	3,818

Device	Routing	Invert	Outlet Devices
#1	Secondary	119.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Device 3	118.80'	4.0' long TOP OF WIER PLATE Cv= 2.62 (C= 3.28)
#3	Primary	116.65'	12.0" Round Culvert L= 38.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 116.65' / 116.46' S= 0.0050 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#4	Discarded	116.00'	3.910 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 112.00'

Discarded OutFlow Max=0.20 cfs @ 14.12 hrs HW=117.27' (Free Discharge)
 ↳ **4=Exfiltration** (Controls 0.20 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=116.00' (Free Discharge)
 ↳ **3=Culvert** (Controls 0.00 cfs)
 ↳ **2=TOP OF WIER PLATE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=116.00' (Free Discharge)
 ↳ **1=EMERGENCY OVERFLOW** (Controls 0.00 cfs)

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Summary for Pond 65F: FOREBAY #9

Inflow Area = 45,483 sf, 39.36% Impervious, Inflow Depth > 1.56" for 10 yr event
 Inflow = 0.84 cfs @ 12.63 hrs, Volume= 5,907 cf
 Outflow = 0.84 cfs @ 12.66 hrs, Volume= 5,589 cf, Atten= 0%, Lag= 2.0 min
 Primary = 0.84 cfs @ 12.66 hrs, Volume= 5,589 cf
 Routed to Pond 65P : GRAVEL WETLAND #2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 119.20' @ 12.66 hrs Surf.Area= 647 sf Storage= 417 cf

Plug-Flow detention time= 37.9 min calculated for 5,577 cf (94% of inflow)
 Center-of-Mass det. time= 11.3 min (902.6 - 891.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	118.00'	1,339 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
118.00	179	83.0	0	0	179
119.00	458	102.0	308	308	474
120.00	1,742	610.0	1,031	1,339	29,259

Device	Routing	Invert	Outlet Devices											
#1	Primary	119.00'	4.0' long x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66		
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Primary OutFlow Max=0.84 cfs @ 12.66 hrs HW=119.20' (Free Discharge)
 1=Broad-Crested Rectangular Weir(Weir Controls 0.84 cfs @ 1.06 fps)

Summary for Pond 65P: GRAVEL WETLAND #2

[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 45,483 sf, 39.36% Impervious, Inflow Depth > 1.47" for 10 yr event
 Inflow = 0.84 cfs @ 12.66 hrs, Volume= 5,589 cf
 Outflow = 0.26 cfs @ 13.68 hrs, Volume= 3,957 cf, Atten= 68%, Lag= 61.0 min
 Primary = 0.26 cfs @ 13.68 hrs, Volume= 3,957 cf
 Routed to Reach 31R : TO CULVERT
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 31R : TO CULVERT

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 118.20' @ 13.68 hrs Surf.Area= 4,509 sf Storage= 2,208 cf

Plug-Flow detention time= 190.2 min calculated for 3,957 cf (71% of inflow)
 Center-of-Mass det. time= 91.9 min (994.5 - 902.6)

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Volume	Invert	Avail.Storage	Storage Description
#1	117.00'	870 cf	CELL 1 (Irregular) Listed below (Recalc)
#2	117.00'	870 cf	CELL 2 (Irregular) Listed below (Recalc)
#3	118.00'	5,956 cf	PONDING AREA (Irregular) Listed below (Recalc)
		7,696 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.00	690	106.6	0	0	690
118.00	1,063	131.1	870	870	1,168

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.00	690	106.6	0	0	690
118.00	1,063	131.1	870	870	1,168

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
118.00	2,245	230.7	0	0	2,245
119.00	2,966	249.5	2,597	2,597	3,002
120.00	3,768	274.0	3,359	5,956	4,056

Device	Routing	Invert	Outlet Devices
#1	Secondary	119.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Primary	117.90'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 4	116.67'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Primary	116.60'	12.0" Round Culvert L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 116.60' / 116.44' S= 0.0050 ' / ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 13.68 hrs HW=118.20' (Free Discharge)

↑ **2=Orifice/Grate** (Orifice Controls 0.23 cfs @ 1.87 fps)
 ↑ **4=Culvert** (Passes 0.03 cfs of 3.59 cfs potential flow)
 ↑ **3=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.88 fps)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=117.00' (Free Discharge)

↑ **1=EMERGENCY OVERFLOW** (Controls 0.00 cfs)

Summary for Pond C1: GR. WETLAND #1 CELL #1

[43] Hint: Has no inflow (Outflow=Zero)

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Volume	Invert	Avail.Storage	Storage Description		
#1	110.90'	1,457 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.90	1,906	186.8	0	0	1,906
111.00	1,962	188.7	193	193	1,966
111.60	2,255	198.6	1,264	1,457	2,292

Summary for Pond C2: GR. WETLAND #1 CELL #2

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description		
#1	110.90'	1,457 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.90	1,906	186.8	0	0	1,906
111.00	1,962	188.7	193	193	1,966
111.60	2,255	198.6	1,264	1,457	2,292

Summary for Pond C3: GW #3 CELL #1

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	904 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.00	717	120.0	0	0	717
115.00	1,105	138.8	904	904	1,125

Summary for Pond C4: GW #3 CELL #2

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	904 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.00	717	120.0	0	0	717
115.00	1,105	138.8	904	904	1,125

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Summary for Pond CB101: DMH-101

[79] Warning: Submerged Pond TD2 Primary device # 1 INLET by 0.29'

[79] Warning: Submerged Pond TD3 Primary device # 1 OUTLET by 1.09'

Inflow Area = 27,872 sf, 93.13% Impervious, Inflow Depth > 4.10" for 10 yr event
 Inflow = 2.70 cfs @ 12.11 hrs, Volume= 9,518 cf
 Outflow = 2.70 cfs @ 12.11 hrs, Volume= 9,517 cf, Atten= 0%, Lag= 0.1 min
 Primary = 2.70 cfs @ 12.11 hrs, Volume= 9,517 cf
 Routed to Pond F4 : FOREBAY #4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.09' @ 12.11 hrs Surf.Area= 13 sf Storage= 16 cf

Plug-Flow detention time= 0.3 min calculated for 9,517 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (775.6 - 775.4)

Volume	Invert	Avail.Storage	Storage Description
#1	110.90'	83 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.90	13	12.5	0	0	13
117.25	13	12.5	83	83	92

Device	Routing	Invert	Outlet Devices
#1	Primary	110.90'	12.0" Round P-202 L= 72.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 110.90' / 110.54' S= 0.0050 ' / ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.65 cfs @ 12.11 hrs HW=112.07' (Free Discharge)

↑**1=P-202** (Barrel Controls 2.65 cfs @ 3.62 fps)

Summary for Pond CB102: CB-102

Inflow Area = 30,762 sf, 79.68% Impervious, Inflow Depth > 3.70" for 10 yr event
 Inflow = 2.83 cfs @ 12.10 hrs, Volume= 9,484 cf
 Outflow = 2.82 cfs @ 12.10 hrs, Volume= 9,483 cf, Atten= 0%, Lag= 0.1 min
 Primary = 2.82 cfs @ 12.10 hrs, Volume= 9,483 cf
 Routed to Pond P8 : DETENTION BASIN #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 113.93' @ 12.10 hrs Surf.Area= 13 sf Storage= 16 cf

Plug-Flow detention time= 0.3 min calculated for 9,483 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (792.5 - 792.3)

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Volume	Invert	Avail.Storage	Storage Description		
#1	112.70'	39 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
112.70	13	12.5	0	0	13
115.70	13	12.5	39	39	51
Device	Routing	Invert	Outlet Devices		
#1	Primary	112.70'	12.0" Round P-204 L= 165.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 112.70' / 111.88' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf		

Primary OutFlow Max=2.81 cfs @ 12.10 hrs HW=113.93' (Free Discharge)↑**1=P-204** (Barrel Controls 2.81 cfs @ 3.72 fps)**Summary for Pond CB103: CB-103**

[79] Warning: Submerged Pond CB104 Primary device # 1 OUTLET by 0.85'

Inflow Area = 25,269 sf, 82.65% Impervious, Inflow Depth > 3.46" for 10 yr event
 Inflow = 2.19 cfs @ 12.10 hrs, Volume= 7,276 cf
 Outflow = 2.19 cfs @ 12.10 hrs, Volume= 7,275 cf, Atten= 0%, Lag= 0.1 min
 Primary = 2.19 cfs @ 12.10 hrs, Volume= 7,275 cf
 Routed to Pond P8 : DETENTION BASIN #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 113.30' @ 12.10 hrs Surf.Area= 13 sf Storage= 12 cf

Plug-Flow detention time= 0.3 min calculated for 7,259 cf (100% of inflow)

Center-of-Mass det. time= 0.2 min (799.6 - 799.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	112.35'	73 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
112.35	13	12.5	0	0	13
118.00	13	12.5	73	73	84
Device	Routing	Invert	Outlet Devices		
#1	Primary	112.35'	12.0" Round P-207 L= 180.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 112.35' / 111.45' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf		

Primary OutFlow Max=2.17 cfs @ 12.10 hrs HW=113.30' (Free Discharge)↑**1=P-207** (Barrel Controls 2.17 cfs @ 3.64 fps)

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Summary for Pond CB104: CB-104

Inflow Area = 22,108 sf, 85.20% Impervious, Inflow Depth > 3.60" for 10 yr event
 Inflow = 1.99 cfs @ 12.10 hrs, Volume= 6,626 cf
 Outflow = 1.99 cfs @ 12.10 hrs, Volume= 6,625 cf, Atten= 0%, Lag= 0.1 min
 Primary = 1.99 cfs @ 12.10 hrs, Volume= 6,625 cf
 Routed to Pond CB103 : CB-103

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 114.28' @ 12.10 hrs Surf.Area= 13 sf Storage= 11 cf

Plug-Flow detention time= 0.3 min calculated for 6,625 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (796.2 - 796.0)

Volume	Invert	Avail.Storage	Storage Description
#1	113.40'	39 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
113.40	13	12.5	0	0	13
116.40	13	12.5	39	39	51

Device	Routing	Invert	Outlet Devices
#1	Primary	113.40'	12.0" Round P-208 L= 189.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.40' / 112.45' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.98 cfs @ 12.10 hrs HW=114.28' (Free Discharge)
 1=P-208 (Barrel Controls 1.98 cfs @ 3.59 fps)

Summary for Pond CB105: CB-105

Inflow Area = 12,060 sf, 90.49% Impervious, Inflow Depth > 3.91" for 10 yr event
 Inflow = 1.15 cfs @ 12.10 hrs, Volume= 3,930 cf
 Outflow = 1.15 cfs @ 12.10 hrs, Volume= 3,929 cf, Atten= 0%, Lag= 0.1 min
 Primary = 1.15 cfs @ 12.10 hrs, Volume= 3,929 cf
 Routed to Pond P8 : DETENTION BASIN #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.67' @ 12.10 hrs Surf.Area= 13 sf Storage= 8 cf

Plug-Flow detention time= 0.4 min calculated for 3,929 cf (100% of inflow)
 Center-of-Mass det. time= 0.3 min (784.5 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1	112.05'	52 cf	Custom Stage Data (Irregular) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
112.05	13	12.5	0	0	13
116.05	13	12.5	52	52	63

Device	Routing	Invert	Outlet Devices
#1	Primary	112.05'	12.0" Round P-213 L= 218.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 112.05' / 110.96' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.10 hrs HW=112.67' (Free Discharge)↑**1=P-213** (Barrel Controls 1.15 cfs @ 3.19 fps)**Summary for Pond CB106: CB-106**

[79] Warning: Submerged Pond P9 Primary device # 1 OUTLET by 0.62'

Inflow Area = 40,159 sf, 75.34% Impervious, Inflow Depth > 2.94" for 10 yr event
 Inflow = 2.04 cfs @ 12.14 hrs, Volume= 9,835 cf
 Outflow = 2.04 cfs @ 12.14 hrs, Volume= 9,834 cf, Atten= 0%, Lag= 0.1 min
 Primary = 2.04 cfs @ 12.14 hrs, Volume= 9,834 cf
 Routed to Pond F2 : FOREBAY #2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 114.22' @ 12.14 hrs Surf.Area= 13 sf Storage= 9 cf

Plug-Flow detention time= 0.2 min calculated for 9,834 cf (100% of inflow)

Center-of-Mass det. time= 0.1 min (827.1 - 826.9)

Volume	Invert	Avail.Storage	Storage Description
#1	113.50'	33 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
113.50	13	12.5	0	0	13
116.00	13	12.5	33	33	44

Device	Routing	Invert	Outlet Devices
#1	Primary	113.50'	18.0" Round P-218 L= 86.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.50' / 113.00' S= 0.0058 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.03 cfs @ 12.14 hrs HW=114.22' (Free Discharge)↑**1=P-218** (Barrel Controls 2.03 cfs @ 3.53 fps)

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Summary for Pond CB111: CB-111

Inflow Area = 20,500 sf, 42.56% Impervious, Inflow Depth > 1.88" for 10 yr event
 Inflow = 0.46 cfs @ 12.69 hrs, Volume= 3,214 cf
 Outflow = 0.46 cfs @ 12.69 hrs, Volume= 3,213 cf, Atten= 0%, Lag= 0.2 min
 Primary = 0.46 cfs @ 12.69 hrs, Volume= 3,213 cf
 Routed to Pond 63F : FOREBAY #8

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 117.64' @ 12.69 hrs Surf.Area= 13 sf Storage= 5 cf

Plug-Flow detention time= 0.4 min calculated for 3,206 cf (100% of inflow)
 Center-of-Mass det. time= 0.3 min (881.9 - 881.6)

Volume	Invert	Avail.Storage	Storage Description
#1	117.25'	20 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
117.25	13	12.6	0	0	13
118.75	13	12.6	20	20	32

Device	Routing	Invert	Outlet Devices
#1	Primary	117.25'	12.0" Round P-225 L= 49.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 117.25' / 117.00' S= 0.0051 ' / ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.46 cfs @ 12.69 hrs HW=117.64' (Free Discharge)
 1=P-225 (Barrel Controls 0.46 cfs @ 2.38 fps)

Summary for Pond CB112: CB-112

Inflow Area = 26,295 sf, 48.57% Impervious, Inflow Depth > 1.82" for 10 yr event
 Inflow = 1.19 cfs @ 12.12 hrs, Volume= 3,997 cf
 Outflow = 1.19 cfs @ 12.12 hrs, Volume= 3,995 cf, Atten= 0%, Lag= 0.1 min
 Primary = 1.19 cfs @ 12.12 hrs, Volume= 3,995 cf
 Routed to Pond CB113 : CB-113

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 115.71' @ 12.12 hrs Surf.Area= 13 sf Storage= 9 cf

Plug-Flow detention time= 0.5 min calculated for 3,987 cf (100% of inflow)
 Center-of-Mass det. time= 0.3 min (853.5 - 853.3)

Volume	Invert	Avail.Storage	Storage Description
#1	115.00'	39 cf	Custom Stage Data (Irregular) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
115.00	13	12.6	0	0	13
118.00	13	12.6	39	39	51

Device	Routing	Invert	Outlet Devices
#1	Primary	115.05'	12.0" Round Culvert L= 88.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 115.05' / 114.60' S= 0.0051 ' S= 0.0051 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.12 hrs HW=115.69' (Free Discharge)↑**1=Culvert** (Barrel Controls 1.16 cfs @ 3.09 fps)**Summary for Pond CB113: CB-113**

[79] Warning: Submerged Pond CB112 Primary device # 1 INLET by 0.46'

Inflow Area = 42,167 sf, 52.88% Impervious, Inflow Depth > 2.27" for 10 yr event
 Inflow = 2.41 cfs @ 12.11 hrs, Volume= 7,974 cf
 Outflow = 2.40 cfs @ 12.11 hrs, Volume= 7,973 cf, Atten= 0%, Lag= 0.1 min
 Primary = 2.40 cfs @ 12.11 hrs, Volume= 7,973 cf
 Routed to Pond 54F : FOREBAY #10

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 115.52' @ 12.11 hrs Surf.Area= 13 sf Storage= 13 cf

Plug-Flow detention time= 0.3 min calculated for 7,973 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (834.6 - 834.4)

Volume	Invert	Avail.Storage	Storage Description
#1	114.50'	46 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.50	13	12.6	0	0	13
118.00	13	12.6	46	46	57

Device	Routing	Invert	Outlet Devices
#1	Primary	114.50'	12.0" Round Culvert L= 72.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 114.50' / 114.00' S= 0.0069 ' S= 0.0069 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.35 cfs @ 12.11 hrs HW=115.49' (Free Discharge)↑**1=Culvert** (Inlet Controls 2.35 cfs @ 2.99 fps)

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Summary for Pond F1: FOREBAY #1

[81] Warning: Exceeded Pond P8 by 1.33' @ 23.95 hrs

Inflow Area = 201,013 sf, 61.05% Impervious, Inflow Depth > 2.33" for 10 yr event
 Inflow = 6.06 cfs @ 12.30 hrs, Volume= 38,972 cf
 Outflow = 6.05 cfs @ 12.32 hrs, Volume= 35,580 cf, Atten= 0%, Lag= 1.1 min
 Primary = 6.05 cfs @ 12.32 hrs, Volume= 35,580 cf
 Routed to Pond P1 : BIOFILTRATION BASIN #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 113.29' @ 12.32 hrs Surf.Area= 2,304 sf Storage= 3,978 cf

Plug-Flow detention time= 57.8 min calculated for 35,580 cf (91% of inflow)
 Center-of-Mass det. time= 16.3 min (881.6 - 865.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	111.00'	5,760 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
111.00	1,224	136.1	0	0	1,224
112.00	1,661	155.0	1,437	1,437	1,685
114.00	2,704	192.7	4,323	5,760	2,785

Device	Routing	Invert	Outlet Devices											
#1	Primary	113.00'	16.0' long x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66		
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Primary OutFlow Max=6.03 cfs @ 12.32 hrs HW=113.29' (Free Discharge)
 —1=Broad-Crested Rectangular Weir(Weir Controls 6.03 cfs @ 1.31 fps)

Summary for Pond F2: FOREBAY #2

[81] Warning: Exceeded Pond CB106 by 2.42' @ 23.95 hrs

Inflow Area = 58,549 sf, 59.76% Impervious, Inflow Depth > 2.28" for 10 yr event
 Inflow = 2.10 cfs @ 12.15 hrs, Volume= 11,103 cf
 Outflow = 2.05 cfs @ 12.21 hrs, Volume= 9,063 cf, Atten= 3%, Lag= 3.3 min
 Primary = 2.05 cfs @ 12.21 hrs, Volume= 9,063 cf
 Routed to Pond P2 : INFILTRATION BASIN #2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 116.22' @ 12.21 hrs Surf.Area= 1,505 sf Storage= 2,343 cf

Plug-Flow detention time= 110.6 min calculated for 9,044 cf (81% of inflow)
 Center-of-Mass det. time= 38.2 min (875.0 - 836.8)

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Volume	Invert	Avail.Storage	Storage Description
#1	113.00'	6,461 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
113.00	105	52.0	0	0	105
114.00	489	114.0	274	274	928
116.00	1,332	169.7	1,752	2,026	2,217
118.00	3,243	516.0	4,436	6,461	21,126

Device	Routing	Invert	Outlet Devices
#1	Primary	116.00'	8.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=2.03 cfs @ 12.21 hrs HW=116.22' (Free Discharge)

↑1=Broad-Crested Rectangular Weir(Weir Controls 2.03 cfs @ 1.13 fps)

Summary for Pond F3: FOREBAY #3

[63] Warning: Exceeded Reach 13R INLET depth by 1.45' @ 23.95 hrs

Inflow Area = 118,785 sf, 34.77% Impervious, Inflow Depth > 1.24" for 10 yr event
 Inflow = 2.31 cfs @ 12.32 hrs, Volume= 12,319 cf
 Outflow = 2.18 cfs @ 12.41 hrs, Volume= 10,497 cf, Atten= 5%, Lag= 5.5 min
 Primary = 2.18 cfs @ 12.41 hrs, Volume= 10,497 cf
 Routed to Pond P3 : WET POND #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 114.23' @ 12.41 hrs Surf.Area= 2,100 sf Storage= 2,228 cf

Plug-Flow detention time= 96.1 min calculated for 10,475 cf (85% of inflow)
 Center-of-Mass det. time= 31.5 min (909.3 - 877.8)

Volume	Invert	Avail.Storage	Storage Description
#1	112.00'	4,450 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
112.00	293	105.4	0	0	293
114.00	1,684	524.8	1,786	1,786	21,335
115.00	3,782	815.1	2,663	4,450	52,296

Device	Routing	Invert	Outlet Devices
#1	Primary	114.00'	8.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

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Primary OutFlow Max=2.16 cfs @ 12.41 hrs HW=114.23' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.16 cfs @ 1.16 fps)**Summary for Pond F4: FOREBAY #4**

[62] Hint: Exceeded Reach 1R OUTLET depth by 2.44' @ 12.15 hrs

[64] Warning: Exceeded Reach 1R outlet bank by 0.80' @ 12.14 hrs

[62] Hint: Exceeded Reach 4R OUTLET depth by 2.58' @ 12.15 hrs

[64] Warning: Exceeded Reach 4R outlet bank by 0.80' @ 12.14 hrs

[81] Warning: Exceeded Pond CB101 by 1.39' @ 23.95 hrs

Inflow Area = 180,355 sf, 70.95% Impervious, Inflow Depth > 3.29" for 10 yr event
 Inflow = 12.71 cfs @ 12.12 hrs, Volume= 49,500 cf
 Outflow = 12.54 cfs @ 12.14 hrs, Volume= 46,784 cf, Atten= 1%, Lag= 1.2 min
 Primary = 12.54 cfs @ 12.14 hrs, Volume= 46,784 cf
 Routed to Pond P4 : BIOFILTRATION BASIN #4

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.80' @ 12.14 hrs Surf.Area= 2,559 sf Storage= 3,710 cf

Plug-Flow detention time= 58.3 min calculated for 46,784 cf (95% of inflow)
 Center-of-Mass det. time= 27.3 min (790.0 - 762.7)

Volume	Invert	Avail.Storage	Storage Description			
#1	110.50'	4,240 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
110.50	999	143.0	0	0	999	
111.00	1,221	152.4	554	554	1,232	
112.00	1,706	171.3	1,457	2,011	1,745	
113.00	2,796	441.6	2,229	4,240	14,932	

Device	Routing	Invert	Outlet Devices											
#1	Primary	112.35'	16.0' long x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66		
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Primary OutFlow Max=12.34 cfs @ 12.14 hrs HW=112.80' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 12.34 cfs @ 1.72 fps)**Summary for Pond F7: FOREBAY #7**

[81] Warning: Exceeded Pond P-212 by 1.05' @ 11.25 hrs

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Inflow Area = 73,116 sf, 48.67% Impervious, Inflow Depth > 2.45" for 10 yr event
 Inflow = 3.40 cfs @ 12.17 hrs, Volume= 14,950 cf
 Outflow = 3.35 cfs @ 12.20 hrs, Volume= 14,583 cf, Atten= 1%, Lag= 1.6 min
 Primary = 3.35 cfs @ 12.20 hrs, Volume= 14,583 cf
 Routed to Pond P7 : GRAVEL WETLAND #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 111.47' @ 12.20 hrs Surf.Area= 798 sf Storage= 657 cf

Plug-Flow detention time= 28.9 min calculated for 14,552 cf (97% of inflow)
 Center-of-Mass det. time= 14.7 min (820.4 - 805.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	110.00'	1,927 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.00	210	70.7	0	0	210
111.00	515	120.2	351	351	968
112.00	1,194	303.8	831	1,182	7,166
112.50	1,804	392.7	744	1,927	12,097

Device	Routing	Invert	Outlet Devices											
#1	Primary	111.00'	4.0' long x 2.0' 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											
			Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88											
			2.85 3.07 3.20 3.32											

Primary OutFlow Max=3.34 cfs @ 12.20 hrs HW=111.47' (Free Discharge)
 1=Broad-Crested Rectangular Weir (Weir Controls 3.34 cfs @ 1.79 fps)

Summary for Pond P-212: P-212

[44] Hint: Outlet device #1 is below defined storage

[79] Warning: Submerged Pond P238 Primary device # 1 INLET by 0.33'

Inflow Area = 41,211 sf, 46.55% Impervious, Inflow Depth > 2.16" for 10 yr event
 Inflow = 1.57 cfs @ 12.19 hrs, Volume= 7,421 cf
 Outflow = 1.56 cfs @ 12.21 hrs, Volume= 7,420 cf, Atten= 1%, Lag= 1.4 min
 Primary = 1.56 cfs @ 12.21 hrs, Volume= 7,420 cf
 Routed to Pond F7 : FOREBAY #7

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 110.64' @ 12.21 hrs Surf.Area= 240 sf Storage= 118 cf

Plug-Flow detention time= 1.0 min calculated for 7,404 cf (100% of inflow)
 Center-of-Mass det. time= 0.9 min (811.5 - 810.6)

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Volume	Invert	Avail.Storage	Storage Description
#1	110.00'	793 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.00	132	50.8	0	0	132
111.00	313	70.0	216	216	326
112.00	890	331.0	577	793	8,657

Device	Routing	Invert	Outlet Devices
#1	Primary	109.85'	12.0" Round P-212 L= 61.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 109.85' / 109.55' S= 0.0049 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.54 cfs @ 12.21 hrs HW=110.64' (Free Discharge)↑**1=P-212** (Barrel Controls 1.54 cfs @ 3.20 fps)**Summary for Pond P1: BIOFILTRATION BASIN #1**

Inflow Area = 201,013 sf, 61.05% Impervious, Inflow Depth > 2.12" for 10 yr event
 Inflow = 6.05 cfs @ 12.32 hrs, Volume= 35,580 cf
 Outflow = 3.18 cfs @ 12.91 hrs, Volume= 35,552 cf, Atten= 47%, Lag= 35.5 min
 Discarded = 3.18 cfs @ 12.91 hrs, Volume= 35,552 cf
 Primary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 3R : TO WETLAND
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 3R : TO WETLAND

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 111.34' @ 12.91 hrs Surf.Area= 15,935 sf Storage= 5,384 cf

Plug-Flow detention time= 12.2 min calculated for 35,552 cf (100% of inflow)

Center-of-Mass det. time= 11.8 min (893.4 - 881.6)

Volume	Invert	Avail.Storage	Storage Description
#1	111.00'	54,128 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
111.00	15,331	585.7	0	0	15,331
112.00	17,117	604.5	16,216	16,216	17,208
114.00	20,857	642.2	37,912	54,128	21,151

Device	Routing	Invert	Outlet Devices
#1	Secondary	113.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Device 3	112.50'	4.0' long TOP OF WEIR Cv= 2.62 (C= 3.28)

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#3 Primary 111.00' **12.0" Round P-213**
 L= 36.0' CPP, mitered to conform to fill, Ke= 0.700
 Inlet / Outlet Invert= 111.00' / 110.00' S= 0.0278 '/' Cc= 0.900
 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

#4 Discarded 111.00' **7.950 in/hr Exfiltration over Surface area**
 Conductivity to Groundwater Elevation = 107.00'

Discarded OutFlow Max=3.18 cfs @ 12.91 hrs HW=111.34' (Free Discharge)↑**4=Exfiltration** (Controls 3.18 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=111.00' (Free Discharge)↑**3=P-213** (Controls 0.00 cfs)↑**2=TOP OF WEIR** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=111.00' (Free Discharge)↑**1=EMERGENCY OVERFLOW** (Controls 0.00 cfs)**Summary for Pond P12: Filtera Bioscape**

Inflow Area = 2,928 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
 Inflow = 0.30 cfs @ 12.10 hrs, Volume= 1,118 cf
 Outflow = 0.30 cfs @ 12.14 hrs, Volume= 1,118 cf, Atten= 0%, Lag= 2.8 min
 Primary = 0.30 cfs @ 12.14 hrs, Volume= 1,118 cf
 Routed to Reach 15R : THROUGH WETLAND

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 115.82' @ 12.14 hrs Surf.Area= 65 sf Storage= 39 cf

Plug-Flow detention time= 0.7 min calculated for 1,118 cf (100% of inflow)

Center-of-Mass det. time= 0.7 min (749.7 - 749.0)

Volume	Invert	Avail.Storage	Storage Description			
#1	115.00'	52 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
115.00	33	28.0	0	0	33	
116.00	73	41.0	52	52	112	
Device	Routing	Invert	Outlet Devices			
#1	Primary	112.58'	6.0" Round P-216 L= 12.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 112.58' / 112.46' S= 0.0100 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf			
#2	Device 1	115.00'	140.000 in/hr Exfiltration over Surface area			
#3	Device 1	115.75'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads			

Primary OutFlow Max=0.29 cfs @ 12.14 hrs HW=115.81' (Free Discharge)↑**1=P-216** (Passes 0.29 cfs of 1.44 cfs potential flow)↑**2=Exfiltration** (Exfiltration Controls 0.21 cfs)↑**3=Orifice/Grate** (Weir Controls 0.08 cfs @ 0.83 fps)

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Summary for Pond P2: INFILTRATION BASIN #2

Inflow Area = 58,549 sf, 59.76% Impervious, Inflow Depth > 1.86" for 10 yr event
 Inflow = 2.05 cfs @ 12.21 hrs, Volume= 9,063 cf
 Outflow = 0.23 cfs @ 14.36 hrs, Volume= 8,463 cf, Atten= 89%, Lag= 129.1 min
 Discarded = 0.23 cfs @ 14.36 hrs, Volume= 8,463 cf
 Primary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 5R : SWALE
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 5R : SWALE

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 115.36' @ 14.36 hrs Surf.Area= 3,498 sf Storage= 4,090 cf

Plug-Flow detention time= 218.5 min calculated for 8,463 cf (93% of inflow)
 Center-of-Mass det. time= 185.5 min (1,060.5 - 875.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	16,125 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.00	2,538	224.9	0	0	2,538
116.00	4,001	262.6	6,484	6,484	4,080
118.00	5,690	300.3	9,642	16,125	5,860

Device	Routing	Invert	Outlet Devices
#1	Secondary	117.50'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	114.00'	2.220 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 110.00'
#3	Device 4	117.00'	4.0' long TOP OF WEIR 2 End Contraction(s)
#4	Primary	113.00'	12.0" Round P-217 L= 32.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.00' / 112.84' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.23 cfs @ 14.36 hrs HW=115.36' (Free Discharge)
 ↳ **2=Exfiltration** (Controls 0.23 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=114.00' (Free Discharge)
 ↳ **4=P-217** (Passes 0.00 cfs of 2.11 cfs potential flow)
 ↳ **3=TOP OF WEIR** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=114.00' (Free Discharge)
 ↳ **1=EMERGENCY OVERFLOW** (Controls 0.00 cfs)

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Summary for Pond P227: P-227

Inflow Area = 14,783 sf, 46.13% Impervious, Inflow Depth > 1.81" for 10 yr event
 Inflow = 0.38 cfs @ 12.49 hrs, Volume= 2,233 cf
 Outflow = 0.38 cfs @ 12.53 hrs, Volume= 2,211 cf, Atten= 1%, Lag= 2.5 min
 Primary = 0.38 cfs @ 12.53 hrs, Volume= 2,211 cf
 Routed to Pond 65F : FOREBAY #9

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 120.33' @ 12.53 hrs Surf.Area= 298 sf Storage= 114 cf

Plug-Flow detention time= 13.1 min calculated for 2,211 cf (99% of inflow)
 Center-of-Mass det. time= 7.5 min (880.3 - 872.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	120.00'	338 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
120.00	390	135.9	0	0	390
122.00	23	23.4	338	338	1,825

Device	Routing	Invert	Outlet Devices
#1	Primary	120.00'	12.0" Round Culvert L= 80.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 120.00' / 119.60' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.53 hrs HW=120.33' (Free Discharge)
 1=Culvert (Barrel Controls 0.37 cfs @ 2.45 fps)

Summary for Pond P235: P-235

Inflow Area = 8,231 sf, 69.81% Impervious, Inflow Depth > 3.39" for 10 yr event
 Inflow = 0.70 cfs @ 12.11 hrs, Volume= 2,328 cf
 Outflow = 0.70 cfs @ 12.11 hrs, Volume= 2,328 cf, Atten= 0%, Lag= 0.1 min
 Primary = 0.70 cfs @ 12.11 hrs, Volume= 2,328 cf
 Routed to Pond 34F : FOREBAY #14

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 114.74' @ 12.11 hrs Surf.Area= 13 sf Storage= 6 cf

Plug-Flow detention time= 0.5 min calculated for 2,328 cf (100% of inflow)
 Center-of-Mass det. time= 0.4 min (803.6 - 803.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.25'	418 cf	Custom Stage Data (Irregular) Listed below (Recalc)		

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.25	13	12.6	0	0	13
116.00	13	12.6	23	23	35
117.00	1,056	340.1	395	418	9,229

Device	Routing	Invert	Outlet Devices
#1	Primary	114.25'	12.0" Round P-235 L= 50.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 114.25' / 114.00' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.69 cfs @ 12.11 hrs HW=114.74' (Free Discharge)↑**1=P-235** (Barrel Controls 0.69 cfs @ 2.62 fps)**Summary for Pond P238: P-238**

Inflow Area = 10,629 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
 Inflow = 0.96 cfs @ 12.15 hrs, Volume= 4,054 cf
 Outflow = 0.96 cfs @ 12.15 hrs, Volume= 4,050 cf, Atten= 0%, Lag= 0.1 min
 Primary = 0.96 cfs @ 12.15 hrs, Volume= 4,050 cf
 Routed to Pond P-212 : P-212

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 110.90' @ 12.15 hrs Surf.Area= 13 sf Storage= 12 cf

Plug-Flow detention time= 1.8 min calculated for 4,041 cf (100% of inflow)

Center-of-Mass det. time= 1.0 min (753.6 - 752.6)

Volume	Invert	Avail.Storage	Storage Description
#1	110.00'	102 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.00	13	12.6	0	0	13
112.00	13	12.6	26	26	38
113.00	168	56.5	76	102	282

Device	Routing	Invert	Outlet Devices
#1	Primary	110.31'	12.0" Round Culvert L= 62.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 110.31' / 110.00' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.15 hrs HW=110.90' (Free Discharge)↑**1=Culvert** (Barrel Controls 0.96 cfs @ 2.88 fps)

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Summary for Pond P239: P-239

[62] Hint: Exceeded Reach 31R OUTLET depth by 0.43' @ 14.95 hrs

[62] Hint: Exceeded Reach 37R OUTLET depth by 0.46' @ 15.40 hrs

Inflow Area = 756,287 sf, 2.37% Impervious, Inflow Depth > 0.49" for 10 yr event
 Inflow = 3.82 cfs @ 12.67 hrs, Volume= 30,735 cf
 Outflow = 0.99 cfs @ 14.57 hrs, Volume= 23,805 cf, Atten= 74%, Lag= 114.3 min
 Primary = 0.99 cfs @ 14.57 hrs, Volume= 23,805 cf
 Routed to Reach 32R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 115.85' @ 14.57 hrs Surf.Area= 34,103 sf Storage= 11,504 cf

Plug-Flow detention time= 197.0 min calculated for 23,755 cf (77% of inflow)
 Center-of-Mass det. time= 110.0 min (1,038.6 - 928.6)

Volume	Invert	Avail.Storage	Storage Description
#1	115.50'	35,106 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
115.50	31,903	1,051.0	0	0	31,903
116.50	38,409	1,115.7	35,106	35,106	43,111

Device	Routing	Invert	Outlet Devices
#1	Primary	115.60'	36.0" W x 18.0" H Box Culvert L= 65.0' Ke= 0.500 Inlet / Outlet Invert= 115.60' / 115.10' S= 0.0077 ' S Cc= 0.900 n= 0.022 Earth, clean & straight, Flow Area= 4.50 sf

Primary OutFlow Max=0.99 cfs @ 14.57 hrs HW=115.85' (Free Discharge)
 1=Culvert (Barrel Controls 0.99 cfs @ 1.77 fps)

Summary for Pond P242: P-242

[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=8)

Inflow Area = 772,411 sf, 17.97% Impervious, Inflow Depth > 0.67" for 10 yr event
 Inflow = 8.20 cfs @ 12.16 hrs, Volume= 43,141 cf
 Outflow = 8.08 cfs @ 12.16 hrs, Volume= 43,118 cf, Atten= 2%, Lag= 0.2 min
 Primary = 8.08 cfs @ 12.16 hrs, Volume= 43,118 cf
 Routed to Reach 33R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 113.87' @ 12.16 hrs Surf.Area= 13 sf Storage= 37 cf

Plug-Flow detention time= 0.4 min calculated for 43,026 cf (100% of inflow)
 Center-of-Mass det. time= 0.1 min (914.7 - 914.6)

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Volume	Invert	Avail.Storage	Storage Description
#1	111.00'	271 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
111.00	13	12.6	0	0	13
115.00	13	12.6	52	52	63
116.00	559	131.1	219	271	1,420

Device	Routing	Invert	Outlet Devices
#1	Primary	112.60'	24.0" W x 24.0" H Box Culvert L= 41.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 112.60' / 111.80' S= 0.0195 ' S= 0.0195 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 4.00 sf

Primary OutFlow Max=7.98 cfs @ 12.16 hrs HW=113.86' (Free Discharge)

1=Culvert (Inlet Controls 7.98 cfs @ 3.18 fps)

Summary for Pond P3: WET POND #1

Inflow Area = 118,785 sf, 34.77% Impervious, Inflow Depth > 1.06" for 10 yr event
 Inflow = 2.18 cfs @ 12.41 hrs, Volume= 10,497 cf
 Outflow = 0.28 cfs @ 14.90 hrs, Volume= 9,237 cf, Atten= 87%, Lag= 149.2 min
 Primary = 0.28 cfs @ 14.90 hrs, Volume= 9,237 cf
 Routed to Reach 6R : TO AP2
 Secondary= 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 6R : TO AP2

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Starting Elev= 111.00' Surf.Area= 1,993 sf Storage= 5,573 cf

Peak Elev= 112.39' @ 14.90 hrs Surf.Area= 3,787 sf Storage= 9,708 cf (4,135 cf above start)

Plug-Flow detention time= 498.2 min calculated for 3,663 cf (35% of inflow)

Center-of-Mass det. time= 145.1 min (1,054.4 - 909.3)

Volume	Invert	Avail.Storage	Storage Description
#1	103.00'	22,236 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
103.00	4	7.4	0	0	4
105.00	162	45.1	128	128	170
107.00	546	82.8	670	798	574
109.00	1,156	120.5	1,664	2,462	1,217
111.00	1,993	158.2	3,111	5,573	2,099
112.00	3,512	232.4	2,717	8,290	4,413
113.00	4,240	253.1	3,870	12,161	5,249
115.00	5,880	292.6	10,075	22,236	7,049

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Device	Routing	Invert	Outlet Devices
#1	Secondary	114.00'	4.0' long x 2.0' breadth EMERGENCY OVERFLOW 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Device 5	113.75'	4.0' long TOP OF WEIR 2 End Contraction(s)
#3	Device 5	111.00'	2.0" Vert. Orifice/Grate (WQV) C= 0.600 Limited to weir flow at low heads
#4	Device 5	111.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	111.00'	12.0" Round P-210 L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 111.00' / 110.70' S= 0.0100 ' ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.28 cfs @ 14.90 hrs HW=112.39' (Free Discharge)

5=P-210 (Passes 0.28 cfs of 3.15 cfs potential flow)

2=TOP OF WEIR (Controls 0.00 cfs)

3=Orifice/Grate (WQV) (Orifice Controls 0.12 cfs @ 5.50 fps)

4=Orifice/Grate (Orifice Controls 0.16 cfs @ 4.65 fps)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=111.00' (Free Discharge)

1=EMERGENCY OVERFLOW (Controls 0.00 cfs)

Summary for Pond P4: BIOFILTRATION BASIN #4

Inflow Area = 180,355 sf, 70.95% Impervious, Inflow Depth > 3.11" for 10 yr event
 Inflow = 12.54 cfs @ 12.14 hrs, Volume= 46,784 cf
 Outflow = 2.07 cfs @ 12.68 hrs, Volume= 46,745 cf, Atten= 83%, Lag= 32.1 min
 Discarded = 2.07 cfs @ 12.68 hrs, Volume= 46,745 cf
 Primary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 2R : THROUGH WETLAND
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 2R : THROUGH WETLAND

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 111.26' @ 12.68 hrs Surf.Area= 19,641 sf Storage= 14,369 cf

Plug-Flow detention time= 48.6 min calculated for 46,646 cf (100% of inflow)

Center-of-Mass det. time= 48.0 min (838.0 - 790.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	110.50'	54,199 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.50	18,373	552.5	0	0	18,373
111.00	19,209	550.9	9,395	9,395	18,683
112.00	20,924	558.0	20,060	29,455	19,519
113.00	28,772	1,287.3	24,744	54,199	126,617

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Device	Routing	Invert	Outlet Devices
#1	Secondary	112.50'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Device 4	112.00'	4.0' long TOP OF WEIR 2 End Contraction(s)
#3	Discarded	110.50'	3.860 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 106.50'
#4	Primary	110.50'	12.0" Round Culvert L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 110.50' / 108.00' S= 0.0833 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=2.07 cfs @ 12.68 hrs HW=111.26' (Free Discharge)↑**3=Exfiltration** (Controls 2.07 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=110.50' (Free Discharge)↑**4=Culvert** (Controls 0.00 cfs)↑**2=TOP OF WEIR** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=110.50' (Free Discharge)↑**1=EMERGENCY OVERFLOW** (Controls 0.00 cfs)**Summary for Pond P5: INFILTRATION BASIN #5**

Inflow Area = 93,509 sf, 80.21% Impervious, Inflow Depth > 3.91" for 10 yr event
 Inflow = 8.23 cfs @ 12.10 hrs, Volume= 30,469 cf
 Outflow = 2.45 cfs @ 12.44 hrs, Volume= 30,440 cf, Atten= 70%, Lag= 20.6 min
 Discarded = 1.20 cfs @ 12.44 hrs, Volume= 28,149 cf
 Primary = 1.25 cfs @ 12.44 hrs, Volume= 2,292 cf
 Routed to Reach 9R : TO AP1
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 9R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 116.70' @ 12.44 hrs Surf.Area= 12,038 sf Storage= 8,031 cf

Plug-Flow detention time= 37.3 min calculated for 30,375 cf (100% of inflow)

Center-of-Mass det. time= 36.6 min (793.5 - 756.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	116.00'	25,342 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
116.00	10,957	502.2	0	0	10,957
117.00	12,519	539.8	11,729	11,729	14,118
118.00	14,737	834.3	13,613	25,342	46,328

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Device	Routing	Invert	Outlet Devices
#1	Primary	116.00'	36.0" Round P-211 L= 28.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 116.00' / 115.00' S= 0.0357 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf
#2	Discarded	116.00'	3.690 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 112.00'
#3	Secondary	117.00'	4.0' long x 4.0' breadth EMERGENCY OVERFLOW 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#4	Device 1	116.54'	6.0' long TOP OF WEIR (WQV) Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=1.20 cfs @ 12.44 hrs HW=116.70' (Free Discharge)↑**2=Exfiltration** (Controls 1.20 cfs)**Primary OutFlow** Max=1.24 cfs @ 12.44 hrs HW=116.70' (Free Discharge)↑**1=P-211** (Passes 1.24 cfs of 3.14 cfs potential flow)↑**4=TOP OF WEIR (WQV)** (Weir Controls 1.24 cfs @ 1.30 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.50 hrs HW=116.00' (Free Discharge)↑**3=EMERGENCY OVERFLOW** (Controls 0.00 cfs)**Summary for Pond P7: GRAVEL WETLAND #1**

[44] Hint: Outlet device #3 is below defined storage

[81] Warning: Exceeded Pond F7 by 0.57' @ 18.25 hrs

Inflow Area = 73,116 sf, 48.67% Impervious, Inflow Depth > 2.39" for 10 yr event
 Inflow = 3.35 cfs @ 12.20 hrs, Volume= 14,583 cf
 Outflow = 2.67 cfs @ 12.32 hrs, Volume= 11,702 cf, Atten= 20%, Lag= 7.5 min
 Primary = 2.67 cfs @ 12.32 hrs, Volume= 11,702 cf
 Routed to Reach 12R : TO AP1
 Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf
 Routed to Reach 12R : TO AP1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 111.82' @ 12.32 hrs Surf.Area= 9,406 sf Storage= 3,945 cf

Plug-Flow detention time= 122.2 min calculated for 11,677 cf (80% of inflow)

Center-of-Mass det. time= 44.8 min (865.3 - 820.4)

Volume	Invert	Avail.Storage	Storage Description
#1	110.90'	1,457 cf	CELL 1 (Irregular) Listed below (Recalc)
#2	110.90'	1,457 cf	CELL 2 (Irregular) Listed below (Recalc)
#3	111.60'	5,166 cf	EXTENDED (Irregular) Listed below (Recalc)
		8,081 cf	Total Available Storage

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.90	1,906	186.8	0	0	1,906
111.00	1,962	188.7	193	193	1,966
111.60	2,255	198.6	1,264	1,457	2,292

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
110.90	1,906	186.8	0	0	1,906
111.00	1,962	188.7	193	193	1,966
111.60	2,255	198.6	1,264	1,457	2,292

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
111.60	4,675	339.2	0	0	4,675
112.00	5,090	354.4	1,952	1,952	5,525
112.60	5,628	363.8	3,214	5,166	6,104

Device	Routing	Invert	Outlet Devices
#1	Primary	111.60'	8.0' long TOP OF WEIR 2 End Contraction(s)
#2	Secondary	112.00'	8.0' long x 2.0' breadth EMERGENCY OVERFLOW 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Primary	110.57'	1.6" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.63 cfs @ 12.32 hrs HW=111.81' (Free Discharge)

↑ **1=TOP OF WEIR** (Weir Controls 2.56 cfs @ 1.51 fps)
 ↓ **3=Orifice/Grate** (Orifice Controls 0.07 cfs @ 5.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=110.90' (Free Discharge)

↑ **2=EMERGENCY OVERFLOW** (Controls 0.00 cfs)

Summary for Pond P8: DETENTION BASIN #1

[79] Warning: Submerged Pond CB102 Primary device # 1 INLET by 0.20'

[81] Warning: Exceeded Pond CB103 by 0.04' @ 12.50 hrs

[81] Warning: Exceeded Pond CB105 by 0.48' @ 12.40 hrs

[81] Warning: Exceeded Pond TD1 by 0.54' @ 12.40 hrs

Inflow Area = 160,717 sf, 74.11% Impervious, Inflow Depth > 3.09" for 10 yr event
 Inflow = 12.36 cfs @ 12.10 hrs, Volume= 41,393 cf
 Outflow = 5.78 cfs @ 12.31 hrs, Volume= 37,061 cf, Atten= 53%, Lag= 12.3 min
 Primary = 5.78 cfs @ 12.31 hrs, Volume= 37,061 cf
 Routed to Pond F1 : FOREBAY #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.90' @ 12.31 hrs Surf.Area= 8,762 sf Storage= 13,665 cf

Plug-Flow detention time= 104.4 min calculated for 36,982 cf (89% of inflow)

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Center-of-Mass det. time= 55.1 min (862.3 - 807.1)

Volume	Invert	Avail.Storage	Storage Description
#1	111.00'	24,340 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
111.00	5,681	524.0	0	0	5,681
112.00	7,281	543.0	6,464	6,464	7,380
113.00	8,937	561.5	8,095	14,559	9,097
114.00	10,649	580.3	9,781	24,340	10,899

Device	Routing	Invert	Outlet Devices
#1	Primary	111.50'	18.0" Round P-206 L= 125.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 111.50' / 110.88' S= 0.0050 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.78 cfs @ 12.31 hrs HW=112.90' (Free Discharge)↑**1=P-206** (Barrel Controls 5.78 cfs @ 4.38 fps)**Summary for Pond P9: DETENTION BASIN #2**

Inflow Area = 27,410 sf, 74.08% Impervious, Inflow Depth > 3.20" for 10 yr event
 Inflow = 1.98 cfs @ 12.10 hrs, Volume= 7,300 cf
 Outflow = 1.22 cfs @ 12.22 hrs, Volume= 6,436 cf, Atten= 38%, Lag= 7.2 min
 Primary = 1.22 cfs @ 12.22 hrs, Volume= 6,436 cf
 Routed to Pond CB106 : CB-106

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 115.78' @ 12.22 hrs Surf.Area= 3,166 sf Storage= 2,054 cf

Plug-Flow detention time= 121.5 min calculated for 6,423 cf (88% of inflow)
 Center-of-Mass det. time= 65.5 min (836.3 - 770.7)

Volume	Invert	Avail.Storage	Storage Description
#1	114.75'	2,816 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
114.75	1,101	192.0	0	0	1,101
115.00	1,412	227.8	313	313	2,298
116.00	3,785	518.8	2,503	2,816	19,591

Device	Routing	Invert	Outlet Devices
#1	Primary	115.25'	18.0" Round P-214 L= 186.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 115.25' / 113.60' S= 0.0089 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

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Primary OutFlow Max=1.21 cfs @ 12.22 hrs HW=115.78' (Free Discharge)↑**1=P-214** (Inlet Controls 1.21 cfs @ 2.18 fps)**Summary for Pond TD1: TRENCH DRAIN #1**

Inflow Area = 5,786 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
 Inflow = 0.60 cfs @ 12.10 hrs, Volume= 2,208 cf
 Outflow = 0.52 cfs @ 12.15 hrs, Volume= 2,205 cf, Atten= 12%, Lag= 2.9 min
 Primary = 0.52 cfs @ 12.15 hrs, Volume= 2,205 cf
 Routed to Pond P8 : DETENTION BASIN #1

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 112.96' @ 12.15 hrs Surf.Area= 65 sf Storage= 63 cf

Plug-Flow detention time= 3.7 min calculated for 2,200 cf (100% of inflow)

Center-of-Mass det. time= 2.7 min (751.8 - 749.0)

Volume	Invert	Avail.Storage	Storage Description
#1	112.00'	2,135 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
112.00	65	134.0	0	0	65
115.00	65	134.0	195	195	467
116.50	3,348	233.0	1,940	2,135	3,371

Device	Routing	Invert	Outlet Devices
#1	Primary	112.00'	6.0" Round P-205 L= 115.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 112.00' / 111.42' S= 0.0050 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.52 cfs @ 12.15 hrs HW=112.96' (Free Discharge)↑**1=P-205** (Barrel Controls 0.52 cfs @ 2.66 fps)**Summary for Pond TD2: TRENCH DRAIN #2**

Inflow Area = 4,028 sf, 100.00% Impervious, Inflow Depth > 4.58" for 10 yr event
 Inflow = 0.42 cfs @ 12.10 hrs, Volume= 1,537 cf
 Outflow = 0.41 cfs @ 12.11 hrs, Volume= 1,535 cf, Atten= 2%, Lag= 0.9 min
 Primary = 0.41 cfs @ 12.11 hrs, Volume= 1,535 cf
 Routed to Pond CB101 : DMH-101

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Peak Elev= 112.33' @ 12.11 hrs Surf.Area= 49 sf Storage= 26 cf

Plug-Flow detention time= 3.3 min calculated for 1,532 cf (100% of inflow)

Center-of-Mass det. time= 2.3 min (751.4 - 749.0)

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Type III 24-hr 10 yr Rainfall=4.82"

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Volume	Invert	Avail.Storage	Storage Description
#1	111.80'	1,544 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
111.80	49	100.0	0	0	49
114.80	49	100.0	147	147	349
116.30	2,401	147.0	1,397	1,544	1,291

Device	Routing	Invert	Outlet Devices
#1	Primary	111.80'	6.0" Round P-201 L= 161.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 111.80' / 111.00' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.40 cfs @ 12.11 hrs HW=112.32' (Free Discharge)↑**1=P-201** (Barrel Controls 0.40 cfs @ 2.44 fps)**Summary for Pond TD3: TRENCH DRAIN #3**

Inflow Area = 23,844 sf, 91.97% Impervious, Inflow Depth > 4.02" for 10 yr event
 Inflow = 2.32 cfs @ 12.10 hrs, Volume= 7,984 cf
 Outflow = 2.29 cfs @ 12.11 hrs, Volume= 7,983 cf, Atten= 1%, Lag= 0.6 min
 Primary = 2.29 cfs @ 12.11 hrs, Volume= 7,983 cf
 Routed to Pond CB101 : DMH-101

Routing by Stor-Ind method, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 113.65' @ 12.11 hrs Surf.Area= 42 sf Storage= 49 cf

Plug-Flow detention time= 0.3 min calculated for 7,983 cf (100% of inflow)
 Center-of-Mass det. time= 0.3 min (780.0 - 779.8)

Volume	Invert	Avail.Storage	Storage Description
#1	112.25'	861 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
112.25	4	84.0	0	0	4
112.40	21	84.5	2	2	18
112.65	34	85.0	7	9	41
112.90	42	86.0	9	18	66
113.90	42	86.0	42	60	152
114.00	184	100.0	10	70	359
115.00	1,639	163.3	791	861	1,692

Device	Routing	Invert	Outlet Devices
#1	Primary	112.25'	10.0" Round P-203 L= 76.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 112.25' / 111.00' S= 0.0164 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=2.25 cfs @ 12.11 hrs HW=113.61' (Free Discharge)

↑1=P-203 (Inlet Controls 2.25 cfs @ 4.13 fps)

Summary for Link AP1: AP #1

Inflow Area = 6,380,498 sf, 16.18% Impervious, Inflow Depth > 0.80" for 10 yr event
Inflow = 19.60 cfs @ 15.20 hrs, Volume= 427,979 cf
Primary = 19.60 cfs @ 15.20 hrs, Volume= 427,979 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP2: AP-2

Inflow Area = 1,726,172 sf, 2.56% Impervious, Inflow Depth > 0.68" for 10 yr event
Inflow = 7.23 cfs @ 13.30 hrs, Volume= 97,877 cf
Primary = 7.23 cfs @ 13.30 hrs, Volume= 97,877 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP3: AP #3

Inflow Area = 1,574,711 sf, 14.03% Impervious, Inflow Depth > 0.47" for 10 yr event
Inflow = 5.19 cfs @ 12.99 hrs, Volume= 61,027 cf
Primary = 5.19 cfs @ 12.99 hrs, Volume= 61,027 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP4: AP-4

Inflow Area = 531,606 sf, 11.54% Impervious, Inflow Depth > 0.81" for 10 yr event
Inflow = 2.86 cfs @ 12.93 hrs, Volume= 35,938 cf
Primary = 2.86 cfs @ 12.93 hrs, Volume= 35,938 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

Summary for Link AP5: AP-5

Inflow Area = 48,962 sf, 0.00% Impervious, Inflow Depth > 0.72" for 10 yr event
Inflow = 0.40 cfs @ 12.51 hrs, Volume= 2,927 cf
Primary = 0.40 cfs @ 12.51 hrs, Volume= 2,927 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-24.00 hrs, dt= 0.05 hrs

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Type III 24-hr 25 yr Rainfall=6.16"

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment10S: PR-WS-10	Runoff Area=67,500 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=8.92 cfs 33,285 cf
Subcatchment11S: PR-WS-11	Runoff Area=50,483 sf 0.00% Impervious Runoff Depth>0.67" Tc=7.0 min CN=42 Runoff=0.41 cfs 2,816 cf
Subcatchment12S: PR-WS-12	Runoff Area=30,762 sf 79.68% Impervious Runoff Depth>5.00" Tc=7.0 min CN=90 Runoff=3.76 cfs 12,811 cf
Subcatchment13S: PR-WS-13	Runoff Area=4,028 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=0.53 cfs 1,986 cf
Subcatchment14S: PR-WS-14	Runoff Area=23,844 sf 91.97% Impervious Runoff Depth>5.34" Tc=7.0 min CN=93 Runoff=3.03 cfs 10,603 cf
Subcatchment15S: PR-WS-15	Runoff Area=86,840 sf 65.65% Impervious Runoff Depth>3.72" Tc=7.0 min CN=78 Runoff=8.28 cfs 26,897 cf
Subcatchment16S: PR-WS-16	Runoff Area=34,500 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=4.56 cfs 17,012 cf
Subcatchment17S: PR-WS-17	Runoff Area=5,786 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=0.76 cfs 2,853 cf
Subcatchment18S: PR-WS-18	Runoff Area=1,315,149 sf 4.81% Impervious Runoff Depth>1.13" Flow Length=1,550' Tc=55.6 min CN=49 Runoff=13.21 cfs 123,371 cf
Subcatchment19S: PR-WS-19	Runoff Area=40,296 sf 8.96% Impervious Runoff Depth>1.15" Tc=7.0 min CN=49 Runoff=0.90 cfs 3,848 cf
Subcatchment20S: PR-WS-20	Runoff Area=18,390 sf 25.73% Impervious Runoff Depth>1.52" Flow Length=399' Tc=23.6 min CN=54 Runoff=0.42 cfs 2,330 cf
Subcatchment21S: PR-WS-21	Runoff Area=75,000 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=9.91 cfs 36,983 cf
Subcatchment22S: PR-WS-22	Runoff Area=18,509 sf 0.00% Impervious Runoff Depth>2.02" Tc=7.0 min CN=60 Runoff=0.91 cfs 3,122 cf
Subcatchment23S: PR-WS-23	Runoff Area=22,108 sf 85.20% Impervious Runoff Depth>4.89" Tc=7.0 min CN=89 Runoff=2.66 cfs 9,002 cf
Subcatchment24S: PR-WS-24	Runoff Area=15,750 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=2.08 cfs 7,766 cf
Subcatchment25S: PR-WS-25	Runoff Area=12,749 sf 78.05% Impervious Runoff Depth>4.45" Tc=7.0 min CN=85 Runoff=1.43 cfs 4,727 cf

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Subcatchment26S: PR-WS-26	Runoff Area=41,227 sf 54.01% Impervious Runoff Depth>3.21" Flow Length=1,050' Tc=20.6 min CN=73 Runoff=2.37 cfs 11,024 cf
Subcatchment28S: PR-WS-28	Runoff Area=105,633 sf 0.00% Impervious Runoff Depth>0.09" Flow Length=536' Tc=18.5 min CN=30 Runoff=0.03 cfs 776 cf
Subcatchment29S: PR-WS-29	Runoff Area=22,082 sf 29.80% Impervious Runoff Depth>3.12" Flow Length=452' Slope=0.0100 '/' Tc=10.4 min CN=72 Runoff=1.58 cfs 5,739 cf
Subcatchment30S: PR-WS-30S	Runoff Area=30,582 sf 27.97% Impervious Runoff Depth>2.19" Flow Length=738' Tc=16.5 min CN=62 Runoff=1.26 cfs 5,587 cf
Subcatchment31S: PR-WS-31	Runoff Area=4,353,531 sf 13.04% Impervious Runoff Depth>1.64" Flow Length=4,410' Tc=210.5 min CN=57 Runoff=31.55 cfs 595,741 cf
Subcatchment32S: PR-WS-32	Runoff Area=1,498,826 sf 0.00% Impervious Runoff Depth>1.34" Flow Length=1,350' Tc=79.3 min CN=52 Runoff=15.40 cfs 167,013 cf
Subcatchment33S: PR-WS-33	Runoff Area=77,558 sf 24.55% Impervious Runoff Depth>1.44" Flow Length=1,004' Tc=20.2 min CN=53 Runoff=1.75 cfs 9,327 cf
Subcatchment34S: PR-WS-34	Runoff Area=12,060 sf 90.49% Impervious Runoff Depth>5.22" Tc=7.0 min CN=92 Runoff=1.51 cfs 5,249 cf
Subcatchment35S: PR-WS-35	Runoff Area=11,660 sf 39.07% Impervious Runoff Depth>2.20" Tc=7.0 min CN=62 Runoff=0.63 cfs 2,135 cf
Subcatchment36S: PR-WS-36	Runoff Area=2,928 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=0.39 cfs 1,444 cf
Subcatchment37S: PR-WS-37	Runoff Area=3,161 sf 64.79% Impervious Runoff Depth>3.62" Tc=7.0 min CN=77 Runoff=0.29 cfs 952 cf
Subcatchment40S: PR-WS-40S	Runoff Area=391,049 sf 0.00% Impervious Runoff Depth>1.27" Flow Length=1,250' Tc=54.8 min CN=51 Runoff=4.70 cfs 41,506 cf
Subcatchment41S: PR-WS-41S	Runoff Area=3,791 sf 100.00% Impervious Runoff Depth>5.92" Tc=7.0 min CN=98 Runoff=0.50 cfs 1,869 cf
Subcatchment42S: PR-WS-42S	Runoff Area=82,009 sf 45.25% Impervious Runoff Depth>3.02" Tc=7.0 min CN=71 Runoff=6.36 cfs 20,671 cf
Subcatchment43S: PR-WS-43S	Runoff Area=3,799 sf 100.00% Impervious Runoff Depth>5.92" Tc=6.0 min CN=98 Runoff=0.51 cfs 1,874 cf
Subcatchment44S: PR-WS-44S	Runoff Area=15,872 sf 60.02% Impervious Runoff Depth>4.24" Tc=7.0 min CN=83 Runoff=1.70 cfs 5,603 cf
Subcatchment47S: PR-WS-47S	Runoff Area=30,673 sf 41.30% Impervious Runoff Depth>3.31" Flow Length=724' Slope=0.0050 '/' Tc=18.8 min CN=74 Runoff=1.89 cfs 8,455 cf

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Subcatchment48S: PR-WS-48S	Runoff Area=23,409 sf 35.68% Impervious Runoff Depth>2.37" Flow Length=537' Slope=0.0050 '/' Tc=7.3 min CN=64 Runoff=1.38 cfs 4,633 cf
Subcatchment49S: PR-WS-49S	Runoff Area=772,411 sf 17.97% Impervious Runoff Depth>1.29" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=51 Runoff=20.57 cfs 83,354 cf
Subcatchment50S: PR-WS-50S	Runoff Area=48,962 sf 0.00% Impervious Runoff Depth>1.36" Flow Length=245' Tc=27.5 min CN=52 Runoff=0.91 cfs 5,559 cf
Subcatchment51S: PR-WS-51S	Runoff Area=54,749 sf 37.30% Impervious Runoff Depth>2.74" Tc=7.0 min CN=68 Runoff=3.82 cfs 12,505 cf
Subcatchment52S: PR-WS-52S	Runoff Area=26,295 sf 48.57% Impervious Runoff Depth>2.83" Tc=7.0 min CN=69 Runoff=1.90 cfs 6,211 cf
Subcatchment60S: PR-WS-60S	Runoff Area=30,700 sf 36.09% Impervious Runoff Depth>2.35" Flow Length=770' Slope=0.0050 '/' Tc=48.6 min CN=64 Runoff=0.85 cfs 6,010 cf
Subcatchment61S: PR-WS-61S	Runoff Area=481,287 sf 0.00% Impervious Runoff Depth>1.14" Flow Length=1,017' Tc=30.7 min CN=49 Runoff=6.60 cfs 45,578 cf
Subcatchment62S: PR-WS-62S	Runoff Area=14,783 sf 46.13% Impervious Runoff Depth>2.82" Flow Length=560' Slope=0.0050 '/' Tc=33.3 min CN=69 Runoff=0.60 cfs 3,470 cf
Subcatchment63S: PR-WS-63S	Runoff Area=20,500 sf 42.56% Impervious Runoff Depth>2.90" Flow Length=753' Slope=0.0050 '/' Tc=48.0 min CN=70 Runoff=0.72 cfs 4,956 cf
Subcatchment64S: PR-WS-64S	Runoff Area=22,518 sf 36.79% Impervious Runoff Depth>2.26" Flow Length=767' Slope=0.0050 '/' Tc=48.5 min CN=63 Runoff=0.59 cfs 4,242 cf
Subcatchment65S: PR-WS-65S	Runoff Area=9,823 sf 100.00% Impervious Runoff Depth>5.91" Flow Length=850' Slope=0.0050 '/' Tc=10.9 min CN=98 Runoff=1.15 cfs 4,841 cf
Subcatchment66S: PR-WS-66S	Runoff Area=10,629 sf 100.00% Impervious Runoff Depth>5.91" Flow Length=880' Slope=0.0050 '/' Tc=11.3 min CN=98 Runoff=1.23 cfs 5,238 cf
Subcatchment67S: PR-WS-67S	Runoff Area=93,025 sf 0.00% Impervious Runoff Depth>5.68" Tc=7.0 min CN=96 Runoff=12.15 cfs 44,050 cf
Subcatchment68S: PR-WS-68S	Runoff Area=136,492 sf 0.00% Impervious Runoff Depth>4.34" Tc=7.0 min CN=84 Runoff=14.97 cfs 49,391 cf
Subcatchment69S: PR-WS-69S	Runoff Area=8,231 sf 69.81% Impervious Runoff Depth>4.67" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=87 Runoff=0.95 cfs 3,200 cf
Reach 1R: SWALE TO P4	Avg. Flow Depth=0.41' Max Vel=3.85 fps Inflow=8.92 cfs 33,285 cf n=0.022 L=550.0' S=0.0145 '/' Capacity=184.11 cfs Outflow=8.44 cfs 33,225 cf
Reach 2R: THROUGH WETLAND	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf n=0.022 L=550.0' S=0.0073 '/' Capacity=539.30 cfs Outflow=0.00 cfs 0 cf

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Reach 3R: TO WETLANDAvg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=208.0' S=0.0385 ' Capacity=1,240.22 cfs Outflow=0.00 cfs 0 cf**Reach 4R: SWALE TO P4**Avg. Flow Depth=0.26' Max Vel=3.51 fps Inflow=4.56 cfs 17,012 cf
n=0.022 L=300.0' S=0.0200 ' Capacity=215.89 cfs Outflow=4.47 cfs 16,994 cf**Reach 5R: SWALE**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=779.0' S=0.0128 ' Capacity=172.96 cfs Outflow=0.00 cfs 0 cf**Reach 6R: TO AP2**Avg. Flow Depth=0.17' Max Vel=0.50 fps Inflow=0.40 cfs 14,853 cf
n=0.022 L=340.0' S=0.0010 ' Capacity=202.90 cfs Outflow=0.40 cfs 14,651 cf**Reach 9R: TO AP1**Avg. Flow Depth=0.25' Max Vel=1.63 fps Inflow=3.18 cfs 6,547 cf
n=0.022 L=1,547.0' S=0.0065 ' Capacity=508.44 cfs Outflow=2.30 cfs 6,547 cf**Reach 12R: TO AP1**Avg. Flow Depth=0.30' Max Vel=0.82 fps Inflow=4.41 cfs 18,094 cf
n=0.022 L=3,150.0' S=0.0013 ' Capacity=225.35 cfs Outflow=1.53 cfs 17,237 cf**Reach 13R: P-209**Avg. Flow Depth=0.50' Max Vel=4.47 fps Inflow=1.75 cfs 9,327 cf
12.0" Round Pipe n=0.012 L=60.0' S=0.0083 ' Capacity=3.52 cfs Outflow=1.74 cfs 9,325 cf**Reach 14R: EX CULVERT**Avg. Flow Depth=0.06' Max Vel=1.39 fps Inflow=0.03 cfs 776 cf
15.0" Round Pipe n=0.012 L=60.0' S=0.0100 ' Capacity=7.00 cfs Outflow=0.03 cfs 776 cf**Reach 15R: THROUGH WETLAND**Avg. Flow Depth=0.10' Max Vel=0.56 fps Inflow=0.43 cfs 1,444 cf
n=0.025 L=776.0' S=0.0032 ' Capacity=312.69 cfs Outflow=0.20 cfs 1,431 cf**Reach 31R: TO CULVERT**Avg. Flow Depth=0.11' Max Vel=1.20 fps Inflow=0.63 cfs 7,430 cf
n=0.022 L=338.0' S=0.0101 ' Capacity=326.21 cfs Outflow=0.63 cfs 7,400 cf**Reach 32R: TO AP1**Avg. Flow Depth=0.32' Max Vel=1.40 fps Inflow=4.24 cfs 62,777 cf
n=0.022 L=3,355.0' S=0.0034 ' Capacity=188.06 cfs Outflow=3.58 cfs 60,646 cf**Reach 33R: TO AP1**Avg. Flow Depth=0.49' Max Vel=2.53 fps Inflow=21.12 cfs 89,056 cf
n=0.022 L=2,585.0' S=0.0062 ' Capacity=255.51 cfs Outflow=12.46 cfs 87,557 cf**Reach 35R: TO WETLAND**Avg. Flow Depth=0.05' Max Vel=0.92 fps Inflow=0.13 cfs 2,529 cf
n=0.022 L=75.0' S=0.0180 ' Capacity=435.72 cfs Outflow=0.13 cfs 2,529 cf**Reach 36R: TO AP1**Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.022 L=3,525.0' S=0.0023 ' Capacity=156.16 cfs Outflow=0.00 cfs 0 cf**Reach 37R: TO CULVERT**Avg. Flow Depth=0.45' Max Vel=1.58 fps Inflow=9.94 cfs 17,931 cf
n=0.022 L=1,430.0' S=0.0027 ' Capacity=169.60 cfs Outflow=6.75 cfs 17,929 cf**Reach 39R: TO AP4**Avg. Flow Depth=0.18' Max Vel=1.01 fps Inflow=1.11 cfs 19,809 cf
n=0.022 L=565.0' S=0.0038 ' Capacity=201.27 cfs Outflow=1.07 cfs 19,700 cf**Reach 40R: TO AP1**Avg. Flow Depth=0.24' Max Vel=1.16 fps Inflow=2.97 cfs 19,085 cf
n=0.022 L=3,172.0' S=0.0035 ' Capacity=191.25 cfs Outflow=1.91 cfs 18,432 cf

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Reach 41R: TO CB111Avg. Flow Depth=0.37' Max Vel=1.62 fps Inflow=1.90 cfs 6,211 cf
n=0.017 L=50.0' S=0.0020 ' /' Capacity=13.91 cfs Outflow=1.90 cfs 6,208 cf**Reach 42R: TO AP4**Inflow=0.52 cfs 1,873 cf
Outflow=0.52 cfs 1,873 cf**Pond 7C: GW #2 CELL #1**

Peak Elev=0.00' Storage=0 cf

Pond 8C: GW #2 CELL #2

Peak Elev=0.00' Storage=0 cf

Pond 34F: FOREBAY#14Peak Elev=116.37' Storage=966 cf Inflow=2.32 cfs 7,832 cf
Outflow=2.23 cfs 7,124 cf**Pond 34P: GRAVEL WETLAND#3**Peak Elev=115.67' Storage=3,538 cf Inflow=2.23 cfs 7,124 cf
Primary=0.28 cfs 3,857 cf Secondary=0.00 cfs 0 cf Outflow=0.28 cfs 3,857 cf**Pond 47P: DITCH TURNOUT #2**Peak Elev=117.12' Storage=15 cf Inflow=0.50 cfs 1,869 cf
Outflow=0.50 cfs 1,869 cf**Pond 48P: DITCH TURNOUT #1**Peak Elev=117.13' Storage=16 cf Inflow=0.51 cfs 1,874 cf
Outflow=0.52 cfs 1,873 cf**Pond 52F: FOREBAY#11**Peak Elev=120.53' Storage=722 cf Inflow=3.82 cfs 12,505 cf
Outflow=3.75 cfs 12,020 cf**Pond 52P: BIOFILTRATION BASIN #7**Peak Elev=119.69' Storage=5,400 cf Inflow=3.75 cfs 12,020 cf
Discarded=0.22 cfs 8,785 cf Primary=0.13 cfs 2,529 cf Secondary=0.00 cfs 0 cf Outflow=0.35 cfs 11,314 cf**Pond 53F: FOREBAY#12**Peak Elev=117.08' Storage=1,109 cf Inflow=6.36 cfs 20,671 cf
Outflow=6.00 cfs 20,229 cf**Pond 53P: WET POND #3**Peak Elev=116.69' Storage=12,424 cf Inflow=6.00 cfs 20,229 cf
Primary=1.11 cfs 19,809 cf Secondary=0.00 cfs 0 cf Outflow=1.11 cfs 19,809 cf**Pond 54F: FOREBAY#10**Peak Elev=116.39' Storage=1,150 cf Inflow=4.83 cfs 20,263 cf
Outflow=4.84 cfs 19,429 cf**Pond 54P: WET POND #2**Peak Elev=116.45' Storage=11,146 cf Inflow=4.84 cfs 19,429 cf
Primary=2.97 cfs 19,085 cf Secondary=0.00 cfs 0 cf Outflow=2.97 cfs 19,085 cf**Pond 61P: SEDIMENTATION BASIN #1**Peak Elev=121.68' Storage=15,081 cf Inflow=12.15 cfs 44,050 cf
Discarded=1.31 cfs 37,816 cf Primary=3.62 cfs 6,202 cf Outflow=4.93 cfs 44,018 cf**Pond 62P: SEDIMENTATION BASIN #2**Peak Elev=121.76' Storage=15,564 cf Inflow=14.97 cfs 49,391 cf
Discarded=1.27 cfs 37,146 cf Primary=6.52 cfs 11,729 cf Outflow=7.79 cfs 48,875 cf**Pond 63F: FOREBAY#8**Peak Elev=119.26' Storage=764 cf Inflow=1.31 cfs 9,197 cf
Outflow=1.31 cfs 8,614 cf

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Pond 63P: BIOFILTRATIONBASIN#6	Peak Elev=118.13' Storage=3,547 cf Inflow=1.31 cfs 8,614 cf Discarded=0.29 cfs 8,515 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.29 cfs 8,515 cf
Pond 65F: FOREBAY#9	Peak Elev=119.27' Storage=468 cf Inflow=1.39 cfs 9,454 cf Outflow=1.39 cfs 9,134 cf
Pond 65P: GRAVEL WETLAND#2	Peak Elev=118.55' Storage=3,080 cf Inflow=1.39 cfs 9,134 cf Primary=0.63 cfs 7,430 cf Secondary=0.00 cfs 0 cf Outflow=0.63 cfs 7,430 cf
Pond C1: GR. WETLAND#1 CELL #1	Peak Elev=0.00' Storage=0 cf
Pond C2: GR. WETLAND#1 CELL #2	Peak Elev=0.00' Storage=0 cf
Pond C3: GW #3 CELL #1	Peak Elev=0.00' Storage=0 cf
Pond C4: GW #3 CELL #2	Peak Elev=0.00' Storage=0 cf
Pond CB101: DMH-101	Peak Elev=112.54' Storage=21 cf Inflow=3.32 cfs 12,586 cf 12.0" Round Culvert n=0.012 L=72.0' S=0.0050 ' Outflow=3.31 cfs 12,585 cf
Pond CB102: CB-102	Peak Elev=115.05' Storage=31 cf Inflow=3.76 cfs 12,811 cf 12.0" Round Culvert n=0.012 L=165.0' S=0.0050 ' Outflow=3.75 cfs 12,810 cf
Pond CB103: CB-103	Peak Elev=113.84' Storage=19 cf Inflow=2.95 cfs 9,953 cf 12.0" Round Culvert n=0.012 L=180.0' S=0.0050 ' Outflow=2.91 cfs 9,952 cf
Pond CB104: CB-104	Peak Elev=114.53' Storage=15 cf Inflow=2.66 cfs 9,002 cf 12.0" Round Culvert n=0.012 L=189.0' S=0.0050 ' Outflow=2.65 cfs 9,001 cf
Pond CB105: CB-105	Peak Elev=112.79' Storage=10 cf Inflow=1.51 cfs 5,249 cf 12.0" Round Culvert n=0.012 L=218.0' S=0.0050 ' Outflow=1.51 cfs 5,248 cf
Pond CB106: CB-106	Peak Elev=114.38' Storage=11 cf Inflow=2.86 cfs 13,743 cf 18.0" Round Culvert n=0.012 L=86.0' S=0.0058 ' Outflow=2.86 cfs 13,741 cf
Pond CB111: CB-111	Peak Elev=117.75' Storage=7 cf Inflow=0.72 cfs 4,956 cf 12.0" Round Culvert n=0.012 L=49.0' S=0.0051 ' Outflow=0.72 cfs 4,955 cf
Pond CB112: CB-112	Peak Elev=115.93' Storage=12 cf Inflow=1.90 cfs 6,208 cf 12.0" Round Culvert n=0.012 L=88.0' S=0.0051 ' Outflow=1.90 cfs 6,206 cf
Pond CB113: CB-113	Peak Elev=116.17' Storage=22 cf Inflow=3.59 cfs 11,809 cf 12.0" Round Culvert n=0.012 L=72.0' S=0.0069 ' Outflow=3.58 cfs 11,808 cf
Pond F1: FOREBAY#1	Peak Elev=113.35' Storage=4,129 cf Inflow=8.39 cfs 57,086 cf Outflow=8.39 cfs 53,680 cf

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Pond F2: FOREBAY#2	Peak Elev=116.29' Storage=2,438 cf Inflow=3.06 cfs 16,071 cf Outflow=3.01 cfs 14,026 cf
Pond F3: FOREBAY#3	Peak Elev=114.34' Storage=2,471 cf Inflow=4.10 cfs 20,349 cf Outflow=4.03 cfs 18,515 cf
Pond F4: FOREBAY#4	Peak Elev=112.88' Storage=3,920 cf Inflow=16.58 cfs 65,620 cf Outflow=16.43 cfs 62,893 cf
Pond F7: FOREBAY#7	Peak Elev=111.60' Storage=766 cf Inflow=4.89 cfs 21,399 cf Outflow=4.83 cfs 21,028 cf
Pond P-212: P-212	Peak Elev=110.90' Storage=186 cf Inflow=2.36 cfs 10,820 cf 12.0" Round Culvert n=0.012 L=61.0' S=0.0049 ' Outflow=2.32 cfs 10,819 cf
Pond P1: BIOFILTRATIONBASIN#1	Peak Elev=111.78' Storage=12,538 cf Inflow=8.39 cfs 53,680 cf Discarded=3.65 cfs 53,642 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=3.65 cfs 53,642 cf
Pond P12: Filtera Bioscape	Peak Elev=115.87' Storage=43 cf Inflow=0.39 cfs 1,444 cf Outflow=0.43 cfs 1,444 cf
Pond P2: INFILTRATIONBASIN #2	Peak Elev=116.18' Storage=7,219 cf Inflow=3.01 cfs 14,026 cf Discarded=0.30 cfs 11,327 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.30 cfs 11,327 cf
Pond P227: P-227	Peak Elev=120.43' Storage=141 cf Inflow=0.60 cfs 3,470 cf 12.0" Round Culvert n=0.011 L=80.0' S=0.0050 ' Outflow=0.60 cfs 3,444 cf
Pond P235: P-235	Peak Elev=114.84' Storage=8 cf Inflow=0.95 cfs 3,200 cf 12.0" Round Culvert n=0.012 L=50.0' S=0.0050 ' Outflow=0.95 cfs 3,200 cf
Pond P238: P-238	Peak Elev=110.99' Storage=13 cf Inflow=1.23 cfs 5,238 cf 12.0" Round Culvert n=0.012 L=62.0' S=0.0050 ' Outflow=1.23 cfs 5,233 cf
Pond P239: P-239	Peak Elev=116.25' Storage=25,565 cf Inflow=13.36 cfs 70,906 cf 36.0" x 18.0" Box Culvert n=0.022 L=65.0' S=0.0077 ' Outflow=4.24 cfs 62,777 cf
Pond P242: P-242	Peak Elev=115.13' Storage=55 cf Inflow=20.57 cfs 83,354 cf 24.0" x 24.0" Box Culvert n=0.012 L=41.0' S=0.0195 ' Outflow=20.61 cfs 83,330 cf
Pond P3: WET POND #1	Peak Elev=113.52' Storage=14,463 cf Inflow=4.03 cfs 18,515 cf Primary=0.40 cfs 14,853 cf Secondary=0.00 cfs 0 cf Outflow=0.40 cfs 14,853 cf
Pond P4: BIOFILTRATIONBASIN#4	Peak Elev=111.58' Storage=20,816 cf Inflow=16.43 cfs 62,893 cf Discarded=2.27 cfs 62,842 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=2.27 cfs 62,842 cf
Pond P5: INFILTRATIONBASIN #5	Peak Elev=116.84' Storage=9,710 cf Inflow=10.82 cfs 40,105 cf Discarded=1.25 cfs 33,520 cf Primary=3.18 cfs 6,547 cf Secondary=0.00 cfs 0 cf Outflow=4.43 cfs 40,067 cf
Pond P7: GRAVEL WETLAND#1	Peak Elev=111.90' Storage=4,379 cf Inflow=4.83 cfs 21,028 cf Primary=4.41 cfs 18,094 cf Secondary=0.00 cfs 0 cf Outflow=4.41 cfs 18,094 cf

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Pond P8: DETENTION BASIN #1 Peak Elev=113.32' Storage=17,547 cf Inflow=17.07 cfs 57,756 cf
18.0" Round Culvert n=0.012 L=125.0' S=0.0050 ' /' Outflow=7.78 cfs 53,237 cf

Pond P9: DETENTION BASIN #2 Peak Elev=115.89' Storage=2,415 cf Inflow=2.71 cfs 9,902 cf
18.0" Round Culvert n=0.012 L=186.0' S=0.0089 ' /' Outflow=1.72 cfs 9,016 cf

Pond TD1: TRENCH DRAIN #1 Peak Elev=113.53' Storage=100 cf Inflow=0.76 cfs 2,853 cf
6.0" Round Culvert n=0.012 L=115.0' S=0.0050 ' /' Outflow=0.65 cfs 2,849 cf

Pond TD2: TRENCH DRAIN #2 Peak Elev=112.66' Storage=42 cf Inflow=0.53 cfs 1,986 cf
6.0" Round Culvert n=0.012 L=161.0' S=0.0050 ' /' Outflow=0.48 cfs 1,984 cf

Pond TD3: TRENCH DRAIN #3 Peak Elev=114.17' Storage=114 cf Inflow=3.03 cfs 10,603 cf
10.0" Round Culvert n=0.012 L=76.0' S=0.0164 ' /' Outflow=2.85 cfs 10,602 cf

Link AP1: AP #1 Inflow=37.81 cfs 786,161 cf
Primary=37.81 cfs 786,161 cf

Link AP2: AP-2 Inflow=15.82 cfs 183,871 cf
Primary=15.82 cfs 183,871 cf

Link AP3: AP #3 Inflow=13.21 cfs 123,371 cf
Primary=13.21 cfs 123,371 cf

Link AP4: AP-4 Inflow=5.94 cfs 65,608 cf
Primary=5.94 cfs 65,608 cf

Link AP5: AP-5 Inflow=0.91 cfs 5,559 cf
Primary=0.91 cfs 5,559 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 1,467,616 cf Average Runoff Depth = 1.72"
86.76% Pervious = 8,902,815 sf 13.24% Impervious = 1,359,134 sf

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Time span=0.50-24.00 hrs, dt=0.05 hrs, 471 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment10S: PR-WS-10	Runoff Area=67,500 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=10.74 cfs 40,305 cf
Subcatchment11S: PR-WS-11	Runoff Area=50,483 sf 0.00% Impervious Runoff Depth>1.17" Tc=7.0 min CN=42 Runoff=1.04 cfs 4,914 cf
Subcatchment12S: PR-WS-12	Runoff Area=30,762 sf 79.68% Impervious Runoff Depth>6.22" Tc=7.0 min CN=90 Runoff=4.62 cfs 15,946 cf
Subcatchment13S: PR-WS-13	Runoff Area=4,028 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=0.64 cfs 2,405 cf
Subcatchment14S: PR-WS-14	Runoff Area=23,844 sf 91.97% Impervious Runoff Depth>6.57" Tc=7.0 min CN=93 Runoff=3.69 cfs 13,059 cf
Subcatchment15S: PR-WS-15	Runoff Area=86,840 sf 65.65% Impervious Runoff Depth>4.84" Tc=7.0 min CN=78 Runoff=10.73 cfs 35,051 cf
Subcatchment16S: PR-WS-16	Runoff Area=34,500 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=5.49 cfs 20,600 cf
Subcatchment17S: PR-WS-17	Runoff Area=5,786 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=0.92 cfs 3,455 cf
Subcatchment18S: PR-WS-18	Runoff Area=1,315,149 sf 4.81% Impervious Runoff Depth>1.77" Flow Length=1,550' Tc=55.6 min CN=49 Runoff=22.91 cfs 194,280 cf
Subcatchment19S: PR-WS-19	Runoff Area=40,296 sf 8.96% Impervious Runoff Depth>1.80" Tc=7.0 min CN=49 Runoff=1.63 cfs 6,048 cf
Subcatchment20S: PR-WS-20	Runoff Area=18,390 sf 25.73% Impervious Runoff Depth>2.27" Flow Length=399' Tc=23.6 min CN=54 Runoff=0.66 cfs 3,486 cf
Subcatchment21S: PR-WS-21	Runoff Area=75,000 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=11.94 cfs 44,783 cf
Subcatchment22S: PR-WS-22	Runoff Area=18,509 sf 0.00% Impervious Runoff Depth>2.89" Tc=7.0 min CN=60 Runoff=1.35 cfs 4,463 cf
Subcatchment23S: PR-WS-23	Runoff Area=22,108 sf 85.20% Impervious Runoff Depth>6.10" Tc=7.0 min CN=89 Runoff=3.28 cfs 11,245 cf
Subcatchment24S: PR-WS-24	Runoff Area=15,750 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=2.51 cfs 9,404 cf
Subcatchment25S: PR-WS-25	Runoff Area=12,749 sf 78.05% Impervious Runoff Depth>5.64" Tc=7.0 min CN=85 Runoff=1.79 cfs 5,992 cf

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Subcatchment26S: PR-WS-26	Runoff Area=41,227 sf 54.01% Impervious Runoff Depth>4.27" Flow Length=1,050' Tc=20.6 min CN=73 Runoff=3.16 cfs 14,685 cf
Subcatchment28S: PR-WS-28	Runoff Area=105,633 sf 0.00% Impervious Runoff Depth>0.29" Flow Length=536' Tc=18.5 min CN=30 Runoff=0.10 cfs 2,511 cf
Subcatchment29S: PR-WS-29	Runoff Area=22,082 sf 29.80% Impervious Runoff Depth>4.17" Flow Length=452' Slope=0.0100 '/' Tc=10.4 min CN=72 Runoff=2.12 cfs 7,680 cf
Subcatchment30S: PR-WS-30S	Runoff Area=30,582 sf 27.97% Impervious Runoff Depth>3.09" Flow Length=738' Tc=16.5 min CN=62 Runoff=1.82 cfs 7,887 cf
Subcatchment31S: PR-WS-31	Runoff Area=4,353,531 sf 13.04% Impervious Runoff Depth>2.41" Flow Length=4,410' Tc=210.5 min CN=57 Runoff=47.71 cfs 875,592 cf
Subcatchment32S: PR-WS-32	Runoff Area=1,498,826 sf 0.00% Impervious Runoff Depth>2.04" Flow Length=1,350' Tc=79.3 min CN=52 Runoff=25.24 cfs 255,039 cf
Subcatchment33S: PR-WS-33	Runoff Area=77,558 sf 24.55% Impervious Runoff Depth>2.18" Flow Length=1,004' Tc=20.2 min CN=53 Runoff=2.82 cfs 14,082 cf
Subcatchment34S: PR-WS-34	Runoff Area=12,060 sf 90.49% Impervious Runoff Depth>6.45" Tc=7.0 min CN=92 Runoff=1.85 cfs 6,487 cf
Subcatchment35S: PR-WS-35	Runoff Area=11,660 sf 39.07% Impervious Runoff Depth>3.10" Tc=7.0 min CN=62 Runoff=0.92 cfs 3,014 cf
Subcatchment36S: PR-WS-36	Runoff Area=2,928 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=0.47 cfs 1,748 cf
Subcatchment37S: PR-WS-37	Runoff Area=3,161 sf 64.79% Impervious Runoff Depth>4.73" Tc=7.0 min CN=77 Runoff=0.38 cfs 1,246 cf
Subcatchment40S: PR-WS-40S	Runoff Area=391,049 sf 0.00% Impervious Runoff Depth>1.96" Flow Length=1,250' Tc=54.8 min CN=51 Runoff=7.83 cfs 63,956 cf
Subcatchment41S: PR-WS-41S	Runoff Area=3,791 sf 100.00% Impervious Runoff Depth>7.17" Tc=7.0 min CN=98 Runoff=0.60 cfs 2,264 cf
Subcatchment42S: PR-WS-42S	Runoff Area=82,009 sf 45.25% Impervious Runoff Depth>4.07" Tc=7.0 min CN=71 Runoff=8.57 cfs 27,791 cf
Subcatchment43S: PR-WS-43S	Runoff Area=3,799 sf 100.00% Impervious Runoff Depth>7.17" Tc=6.0 min CN=98 Runoff=0.62 cfs 2,269 cf
Subcatchment44S: PR-WS-44S	Runoff Area=15,872 sf 60.02% Impervious Runoff Depth>5.41" Tc=7.0 min CN=83 Runoff=2.16 cfs 7,157 cf
Subcatchment47S: PR-WS-47S	Runoff Area=30,673 sf 41.30% Impervious Runoff Depth>4.39" Flow Length=724' Slope=0.0050 '/' Tc=18.8 min CN=74 Runoff=2.51 cfs 11,212 cf

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Subcatchment48S: PR-WS-48S	Runoff Area=23,409 sf 35.68% Impervious Runoff Depth>3.31" Flow Length=537' Slope=0.0050 '/' Tc=7.3 min CN=64 Runoff=1.96 cfs 6,461 cf
Subcatchment49S: PR-WS-49S	Runoff Area=772,411 sf 17.97% Impervious Runoff Depth>1.99" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=51 Runoff=35.22 cfs 128,221 cf
Subcatchment50S: PR-WS-50S	Runoff Area=48,962 sf 0.00% Impervious Runoff Depth>2.08" Flow Length=245' Tc=27.5 min CN=52 Runoff=1.48 cfs 8,473 cf
Subcatchment51S: PR-WS-51S	Runoff Area=54,749 sf 37.30% Impervious Runoff Depth>3.74" Tc=7.0 min CN=68 Runoff=5.25 cfs 17,065 cf
Subcatchment52S: PR-WS-52S	Runoff Area=26,295 sf 48.57% Impervious Runoff Depth>3.85" Tc=7.0 min CN=69 Runoff=2.60 cfs 8,433 cf
Subcatchment60S: PR-WS-60S	Runoff Area=30,700 sf 36.09% Impervious Runoff Depth>3.28" Flow Length=770' Slope=0.0050 '/' Tc=48.6 min CN=64 Runoff=1.20 cfs 8,389 cf
Subcatchment61S: PR-WS-61S	Runoff Area=481,287 sf 0.00% Impervious Runoff Depth>1.79" Flow Length=1,017' Tc=30.7 min CN=49 Runoff=11.47 cfs 71,699 cf
Subcatchment62S: PR-WS-62S	Runoff Area=14,783 sf 46.13% Impervious Runoff Depth>3.83" Flow Length=560' Slope=0.0050 '/' Tc=33.3 min CN=69 Runoff=0.82 cfs 4,714 cf
Subcatchment63S: PR-WS-63S	Runoff Area=20,500 sf 42.56% Impervious Runoff Depth>3.92" Flow Length=753' Slope=0.0050 '/' Tc=48.0 min CN=70 Runoff=0.98 cfs 6,699 cf
Subcatchment64S: PR-WS-64S	Runoff Area=22,518 sf 36.79% Impervious Runoff Depth>3.17" Flow Length=767' Slope=0.0050 '/' Tc=48.5 min CN=63 Runoff=0.85 cfs 5,956 cf
Subcatchment65S: PR-WS-65S	Runoff Area=9,823 sf 100.00% Impervious Runoff Depth>7.16" Flow Length=850' Slope=0.0050 '/' Tc=10.9 min CN=98 Runoff=1.39 cfs 5,862 cf
Subcatchment66S: PR-WS-66S	Runoff Area=10,629 sf 100.00% Impervious Runoff Depth>7.16" Flow Length=880' Slope=0.0050 '/' Tc=11.3 min CN=98 Runoff=1.49 cfs 6,343 cf
Subcatchment67S: PR-WS-67S	Runoff Area=93,025 sf 0.00% Impervious Runoff Depth>6.93" Tc=7.0 min CN=96 Runoff=14.68 cfs 53,700 cf
Subcatchment68S: PR-WS-68S	Runoff Area=136,492 sf 0.00% Impervious Runoff Depth>5.53" Tc=7.0 min CN=84 Runoff=18.85 cfs 62,847 cf
Subcatchment69S: PR-WS-69S	Runoff Area=8,231 sf 69.81% Impervious Runoff Depth>5.87" Flow Length=550' Slope=0.0050 '/' Tc=7.4 min CN=87 Runoff=1.18 cfs 4,027 cf
Reach 1R: SWALE TO P4	Avg. Flow Depth=0.46' Max Vel=4.08 fps Inflow=10.74 cfs 40,305 cf n=0.022 L=550.0' S=0.0145 '/' Capacity=184.11 cfs Outflow=10.24 cfs 40,237 cf
Reach 2R: THROUGH WETLAND	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf n=0.022 L=550.0' S=0.0073 '/' Capacity=539.30 cfs Outflow=0.00 cfs 0 cf

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Reach 3R: TO WETLAND	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf n=0.022 L=208.0' S=0.0385 '/' Capacity=1,240.22 cfs Outflow=0.00 cfs 0 cf
Reach 4R: SWALE TO P4	Avg. Flow Depth=0.29' Max Vel=3.73 fps Inflow=5.49 cfs 20,600 cf n=0.022 L=300.0' S=0.0200 '/' Capacity=215.89 cfs Outflow=5.39 cfs 20,578 cf
Reach 5R: SWALE	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf n=0.022 L=779.0' S=0.0128 '/' Capacity=172.96 cfs Outflow=0.00 cfs 0 cf
Reach 6R: TO AP2	Avg. Flow Depth=0.32' Max Vel=0.77 fps Inflow=1.67 cfs 21,631 cf n=0.022 L=340.0' S=0.0010 '/' Capacity=202.90 cfs Outflow=1.58 cfs 21,401 cf
Reach 9R: TO AP1	Avg. Flow Depth=0.32' Max Vel=1.93 fps Inflow=5.32 cfs 11,067 cf n=0.022 L=1,547.0' S=0.0065 '/' Capacity=508.44 cfs Outflow=3.98 cfs 11,067 cf
Reach 12R: TO AP1	Avg. Flow Depth=0.36' Max Vel=0.93 fps Inflow=5.71 cfs 24,428 cf n=0.022 L=3,150.0' S=0.0013 '/' Capacity=225.35 cfs Outflow=2.37 cfs 23,438 cf
Reach 13R: P-209	Avg. Flow Depth=0.68' Max Vel=4.98 fps Inflow=2.82 cfs 14,082 cf 12.0" Round Pipe n=0.012 L=60.0' S=0.0083 '/' Capacity=3.52 cfs Outflow=2.82 cfs 14,079 cf
Reach 14R: EX CULVERT	Avg. Flow Depth=0.11' Max Vel=2.06 fps Inflow=0.10 cfs 2,511 cf 15.0" Round Pipe n=0.012 L=60.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=0.10 cfs 2,510 cf
Reach 15R: THROUGH WETLAND	Avg. Flow Depth=0.11' Max Vel=0.59 fps Inflow=0.45 cfs 1,748 cf n=0.025 L=776.0' S=0.0032 '/' Capacity=312.69 cfs Outflow=0.25 cfs 1,733 cf
Reach 31R: TO CULVERT	Avg. Flow Depth=0.13' Max Vel=1.34 fps Inflow=0.89 cfs 10,995 cf n=0.022 L=338.0' S=0.0101 '/' Capacity=326.21 cfs Outflow=0.89 cfs 10,958 cf
Reach 32R: TO AP1	Avg. Flow Depth=0.45' Max Vel=1.75 fps Inflow=23.12 cfs 105,549 cf n=0.022 L=3,355.0' S=0.0034 '/' Capacity=188.06 cfs Outflow=7.51 cfs 102,940 cf
Reach 33R: TO AP1	Avg. Flow Depth=0.65' Max Vel=3.04 fps Inflow=35.83 cfs 136,899 cf n=0.022 L=2,585.0' S=0.0062 '/' Capacity=255.51 cfs Outflow=22.71 cfs 135,057 cf
Reach 35R: TO WETLAND	Avg. Flow Depth=0.05' Max Vel=1.02 fps Inflow=0.19 cfs 4,829 cf n=0.022 L=75.0' S=0.0180 '/' Capacity=435.72 cfs Outflow=0.19 cfs 4,829 cf
Reach 36R: TO AP1	Avg. Flow Depth=0.02' Max Vel=0.18 fps Inflow=0.07 cfs 131 cf n=0.022 L=3,525.0' S=0.0023 '/' Capacity=156.16 cfs Outflow=0.01 cfs 110 cf
Reach 37R: TO CULVERT	Avg. Flow Depth=0.60' Max Vel=1.91 fps Inflow=18.49 cfs 32,053 cf n=0.022 L=1,430.0' S=0.0027 '/' Capacity=169.60 cfs Outflow=12.55 cfs 32,051 cf
Reach 39R: TO AP4	Avg. Flow Depth=0.29' Max Vel=1.41 fps Inflow=3.48 cfs 26,861 cf n=0.022 L=565.0' S=0.0038 '/' Capacity=201.27 cfs Outflow=3.18 cfs 26,733 cf
Reach 40R: TO AP1	Avg. Flow Depth=0.27' Max Vel=1.28 fps Inflow=3.90 cfs 25,561 cf n=0.022 L=3,172.0' S=0.0035 '/' Capacity=191.25 cfs Outflow=2.61 cfs 24,818 cf

21117-PROP-PHASE-5*Type III 24-hr 50 yr Rainfall=7.41"*

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Reach 41R: TO CB111Avg. Flow Depth=0.44' Max Vel=1.77 fps Inflow=2.60 cfs 8,433 cf
n=0.017 L=50.0' S=0.0020 '/ Capacity=13.91 cfs Outflow=2.59 cfs 8,429 cf**Reach 42R: TO AP4**Inflow=0.62 cfs 2,268 cf
Outflow=0.62 cfs 2,268 cf**Pond 7C: GW #2 CELL #1**

Peak Elev=0.00' Storage=0 cf

Pond 8C: GW #2 CELL #2

Peak Elev=0.00' Storage=0 cf

Pond 34F: FOREBAY#14Peak Elev=116.44' Storage=1,028 cf Inflow=3.13 cfs 10,488 cf
Outflow=3.01 cfs 9,777 cf**Pond 34P: GRAVEL WETLAND#3**Peak Elev=115.79' Storage=3,900 cf Inflow=3.01 cfs 9,777 cf
Primary=1.15 cfs 6,439 cf Secondary=0.00 cfs 0 cf Outflow=1.15 cfs 6,439 cf**Pond 47P: DITCH TURNOUT#2**Peak Elev=117.14' Storage=17 cf Inflow=0.60 cfs 2,264 cf
Outflow=0.60 cfs 2,263 cf**Pond 48P: DITCH TURNOUT#1**Peak Elev=117.14' Storage=18 cf Inflow=0.62 cfs 2,269 cf
Outflow=0.62 cfs 2,268 cf**Pond 52F: FOREBAY#11**Peak Elev=120.60' Storage=789 cf Inflow=5.25 cfs 17,065 cf
Outflow=5.17 cfs 16,578 cf**Pond 52P: BIOFILTRATION BASIN#7**Peak Elev=119.99' Storage=7,921 cf Inflow=5.17 cfs 16,578 cf
Discarded=0.24 cfs 9,834 cf Primary=0.19 cfs 4,829 cf Secondary=0.00 cfs 0 cf Outflow=0.42 cfs 14,663 cf**Pond 53F: FOREBAY#12**Peak Elev=117.22' Storage=1,354 cf Inflow=8.57 cfs 27,791 cf
Outflow=8.01 cfs 27,345 cf**Pond 53P: WET POND #3**Peak Elev=116.97' Storage=13,642 cf Inflow=8.01 cfs 27,345 cf
Primary=3.48 cfs 26,861 cf Secondary=0.00 cfs 0 cf Outflow=3.48 cfs 26,861 cf**Pond 54F: FOREBAY#10**Peak Elev=116.46' Storage=1,222 cf Inflow=6.41 cfs 26,795 cf
Outflow=6.42 cfs 25,957 cf**Pond 54P: WET POND #2**Peak Elev=116.83' Storage=12,490 cf Inflow=6.42 cfs 25,957 cf
Primary=3.90 cfs 25,561 cf Secondary=0.00 cfs 0 cf Outflow=3.90 cfs 25,561 cf**Pond 61P: SEDIMENTATION BASIN#1**Peak Elev=121.77' Storage=16,525 cf Inflow=14.68 cfs 53,700 cf
Discarded=1.39 cfs 42,074 cf Primary=6.88 cfs 11,586 cf Outflow=8.27 cfs 53,660 cf**Pond 62P: SEDIMENTATION BASIN#2**Peak Elev=121.88' Storage=17,377 cf Inflow=18.85 cfs 62,847 cf
Discarded=1.36 cfs 41,176 cf Primary=11.62 cfs 20,467 cf Outflow=12.99 cfs 61,643 cf**Pond 63F: FOREBAY#8**Peak Elev=119.32' Storage=816 cf Inflow=1.83 cfs 12,654 cf
Outflow=1.82 cfs 12,068 cf

21117-PROP-PHASE-5

Type III 24-hr 50 yr Rainfall=7.41"

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Pond 63P: BIOFILTRATIONBASIN#6 Peak Elev=118.83' Storage=5,333 cf Inflow=1.82 cfs 12,068 cf
Discarded=0.36 cfs 11,216 cf Primary=0.07 cfs 131 cf Secondary=0.00 cfs 0 cf Outflow=0.43 cfs 11,347 cf

Pond 65F: FOREBAY#9 Peak Elev=119.34' Storage=516 cf Inflow=1.94 cfs 13,073 cf
Outflow=1.94 cfs 12,750 cf

Pond 65P: GRAVEL WETLAND#2 Peak Elev=118.97' Storage=4,237 cf Inflow=1.94 cfs 12,750 cf
Primary=0.89 cfs 10,995 cf Secondary=0.00 cfs 0 cf Outflow=0.89 cfs 10,995 cf

Pond C1: GR. WETLAND#1 CELL #1 Peak Elev=0.00' Storage=0 cf

Pond C2: GR. WETLAND#1 CELL #2 Peak Elev=0.00' Storage=0 cf

Pond C3: GW #3 CELL #1 Peak Elev=0.00' Storage=0 cf

Pond C4: GW #3 CELL #2 Peak Elev=0.00' Storage=0 cf

Pond CB101: DMH-101 Peak Elev=112.75' Storage=24 cf Inflow=3.67 cfs 15,461 cf
12.0" Round Culvert n=0.012 L=72.0' S=0.0050 ' / ' Outflow=3.64 cfs 15,459 cf

Pond CB102: CB-102 Peak Elev=116.27' Storage=39 cf Inflow=4.62 cfs 15,946 cf
12.0" Round Culvert n=0.012 L=165.0' S=0.0050 ' / ' Outflow=4.69 cfs 15,944 cf

Pond CB103: CB-103 Peak Elev=114.58' Storage=29 cf Inflow=3.61 cfs 12,490 cf
12.0" Round Culvert n=0.012 L=180.0' S=0.0050 ' / ' Outflow=3.61 cfs 12,488 cf

Pond CB104: CB-104 Peak Elev=115.23' Storage=24 cf Inflow=3.28 cfs 11,245 cf
12.0" Round Culvert n=0.012 L=189.0' S=0.0050 ' / ' Outflow=3.23 cfs 11,244 cf

Pond CB105: CB-105 Peak Elev=112.89' Storage=11 cf Inflow=1.85 cfs 6,487 cf
12.0" Round Culvert n=0.012 L=218.0' S=0.0050 ' / ' Outflow=1.85 cfs 6,486 cf

Pond CB106: CB-106 Peak Elev=114.52' Storage=13 cf Inflow=3.64 cfs 17,506 cf
18.0" Round Culvert n=0.012 L=86.0' S=0.0058 ' / ' Outflow=3.64 cfs 17,505 cf

Pond CB111: CB-111 Peak Elev=117.85' Storage=8 cf Inflow=0.98 cfs 6,699 cf
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 ' / ' Outflow=0.98 cfs 6,698 cf

Pond CB112: CB-112 Peak Elev=116.17' Storage=15 cf Inflow=2.59 cfs 8,429 cf
12.0" Round Culvert n=0.012 L=88.0' S=0.0051 ' / ' Outflow=2.59 cfs 8,427 cf

Pond CB113: CB-113 Peak Elev=117.03' Storage=33 cf Inflow=4.74 cfs 15,584 cf
12.0" Round Culvert n=0.012 L=72.0' S=0.0069 ' / ' Outflow=4.72 cfs 15,582 cf

Pond F1: FOREBAY#1 Peak Elev=113.38' Storage=4,204 cf Inflow=9.65 cfs 74,796 cf
Outflow=9.66 cfs 71,377 cf

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Pond F2: FOREBAY#2	Peak Elev=116.34' Storage=2,522 cf Inflow=4.00 cfs 20,991 cf Outflow=3.94 cfs 18,942 cf
Pond F3: FOREBAY#3	Peak Elev=114.43' Storage=2,689 cf Inflow=5.97 cfs 28,764 cf Outflow=5.89 cfs 26,918 cf
Pond F4: FOREBAY#4	Peak Elev=112.95' Storage=4,105 cf Inflow=20.28 cfs 81,189 cf Outflow=20.08 cfs 78,454 cf
Pond F7: FOREBAY#7	Peak Elev=111.70' Storage=860 cf Inflow=6.23 cfs 27,765 cf Outflow=6.11 cfs 27,391 cf
Pond P-212: P-212	Peak Elev=111.28' Storage=323 cf Inflow=3.14 cfs 14,225 cf 12.0" Round Culvert n=0.012 L=61.0' S=0.0049 ' Outflow=2.96 cfs 14,224 cf
Pond P1: BIOFILTRATIONBASIN#1	Peak Elev=112.17' Storage=19,116 cf Inflow=9.66 cfs 71,377 cf Discarded=4.08 cfs 71,330 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=4.08 cfs 71,330 cf
Pond P12: Filtera Bioscape	Peak Elev=115.88' Storage=43 cf Inflow=0.47 cfs 1,748 cf Outflow=0.45 cfs 1,748 cf
Pond P2: INFILTRATIONBASIN#2	Peak Elev=116.88' Storage=10,306 cf Inflow=3.94 cfs 18,942 cf Discarded=0.37 cfs 14,105 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.37 cfs 14,105 cf
Pond P227: P-227	Peak Elev=120.51' Storage=163 cf Inflow=0.82 cfs 4,714 cf 12.0" Round Culvert n=0.011 L=80.0' S=0.0050 ' Outflow=0.82 cfs 4,684 cf
Pond P235: P-235	Peak Elev=114.92' Storage=9 cf Inflow=1.18 cfs 4,027 cf 12.0" Round Culvert n=0.012 L=50.0' S=0.0050 ' Outflow=1.18 cfs 4,026 cf
Pond P238: P-238	Peak Elev=111.08' Storage=14 cf Inflow=1.49 cfs 6,343 cf 12.0" Round Culvert n=0.012 L=62.0' S=0.0050 ' Outflow=1.49 cfs 6,338 cf
Pond P239: P-239	Peak Elev=118.17' Storage=35,106 cf Inflow=23.66 cfs 114,709 cf 36.0" x 18.0" Box Culvert n=0.022 L=65.0' S=0.0077 ' Outflow=23.12 cfs 105,549 cf
Pond P242: P-242	Peak Elev=117.86' Storage=271 cf Inflow=35.22 cfs 128,221 cf 24.0" x 24.0" Box Culvert n=0.012 L=41.0' S=0.0195 ' Outflow=35.20 cfs 128,197 cf
Pond P3: WET POND #1	Peak Elev=113.96' Storage=16,572 cf Inflow=5.89 cfs 26,918 cf Primary=1.67 cfs 21,631 cf Secondary=0.00 cfs 0 cf Outflow=1.67 cfs 21,631 cf
Pond P4: BIOFILTRATIONBASIN#4	Peak Elev=111.91' Storage=27,529 cf Inflow=20.08 cfs 78,454 cf Discarded=2.47 cfs 78,390 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=2.47 cfs 78,390 cf
Pond P5: INFILTRATIONBASIN#5	Peak Elev=116.96' Storage=11,213 cf Inflow=13.27 cfs 49,247 cf Discarded=1.30 cfs 38,134 cf Primary=5.32 cfs 11,067 cf Secondary=0.00 cfs 0 cf Outflow=6.62 cfs 49,201 cf
Pond P7: GRAVEL WETLAND#1	Peak Elev=111.96' Storage=4,671 cf Inflow=6.11 cfs 27,391 cf Primary=5.71 cfs 24,428 cf Secondary=0.00 cfs 0 cf Outflow=5.71 cfs 24,428 cf

21117-PROP-PHASE-5*Type III 24-hr 50 yr Rainfall=7.41"*

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Pond P8: DETENTION BASIN #1 Peak Elev=113.76' Storage=21,830 cf Inflow=21.58 cfs 73,420 cf
18.0" Round Culvert n=0.012 L=125.0' S=0.0050 '/ Outflow=8.72 cfs 68,747 cf

Pond P9: DETENTION BASIN #2 Peak Elev=115.98' Storage=2,752 cf Inflow=3.42 cfs 12,419 cf
18.0" Round Culvert n=0.012 L=186.0' S=0.0089 '/ Outflow=2.21 cfs 11,514 cf

Pond TD1: TRENCH DRAIN #1 Peak Elev=114.13' Storage=139 cf Inflow=0.92 cfs 3,455 cf
6.0" Round Culvert n=0.012 L=115.0' S=0.0050 '/ Outflow=0.76 cfs 3,451 cf

Pond TD2: TRENCH DRAIN #2 Peak Elev=113.10' Storage=64 cf Inflow=0.64 cfs 2,405 cf
6.0" Round Culvert n=0.012 L=161.0' S=0.0050 '/ Outflow=0.56 cfs 2,403 cf

Pond TD3: TRENCH DRAIN #3 Peak Elev=114.46' Storage=257 cf Inflow=3.69 cfs 13,059 cf
10.0" Round Culvert n=0.012 L=76.0' S=0.0164 '/ Outflow=3.10 cfs 13,058 cf

Link AP1: AP #1 Inflow=57.15 cfs 1,173,023 cf
Primary=57.15 cfs 1,173,023 cf

Link AP2: AP-2 Inflow=26.94 cfs 280,683 cf
Primary=26.94 cfs 280,683 cf

Link AP3: AP #3 Inflow=22.91 cfs 194,280 cf
Primary=22.91 cfs 194,280 cf

Link AP4: AP-4 Inflow=10.12 cfs 97,787 cf
Primary=10.12 cfs 97,787 cf

Link AP5: AP-5 Inflow=1.48 cfs 8,473 cf
Primary=1.48 cfs 8,473 cf

Total Runoff Area = 10,261,949 sf Runoff Volume = 2,118,949 cf Average Runoff Depth = 2.48"
86.76% Pervious = 8,902,815 sf 13.24% Impervious = 1,359,134 sf

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	71.058 degrees West
Latitude	42.842 degrees North
Elevation	0 feet
Date/Time	Tue, 19 Oct 2021 10:18:06 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.27	0.41	0.51	0.67	0.83	1.06	1yr	0.72	1.00	1.23	1.58	2.03	2.64	2.84	1yr	2.33	2.74	3.16	3.85	4.49	1yr
2yr	0.33	0.51	0.63	0.83	1.04	1.32	2yr	0.90	1.20	1.53	1.94	2.47	3.15	3.50	2yr	2.79	3.36	3.88	4.59	5.24	2yr
5yr	0.39	0.60	0.75	1.01	1.29	1.65	5yr	1.11	1.50	1.93	2.47	3.14	4.01	4.49	5yr	3.55	4.32	4.96	5.88	6.64	5yr
10yr	0.43	0.68	0.86	1.17	1.52	1.97	10yr	1.31	1.78	2.31	2.96	3.78	4.82	5.43	10yr	4.27	5.23	5.96	7.10	7.94	10yr
25yr	0.51	0.81	1.03	1.42	1.89	2.47	25yr	1.63	2.23	2.91	3.76	4.82	6.16	6.99	25yr	5.45	6.72	7.62	9.11	10.08	25yr
50yr	0.57	0.91	1.17	1.65	2.23	2.95	50yr	1.92	2.65	3.50	4.53	5.81	7.41	8.47	50yr	6.56	8.14	9.18	11.01	12.07	50yr
100yr	0.65	1.06	1.36	1.93	2.63	3.51	100yr	2.27	3.14	4.17	5.42	6.97	8.92	10.25	100yr	7.89	9.86	11.05	13.32	14.46	100yr
200yr	0.74	1.21	1.56	2.25	3.11	4.18	200yr	2.68	3.73	5.00	6.51	8.39	10.74	12.42	200yr	9.50	11.94	13.32	16.11	17.34	200yr
500yr	0.89	1.47	1.91	2.77	3.88	5.26	500yr	3.35	4.69	6.31	8.27	10.70	13.74	16.02	500yr	12.16	15.40	17.05	20.75	22.07	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.61	0.75	0.88	1yr	0.64	0.86	1.03	1.29	1.57	2.39	2.65	1yr	2.12	2.55	2.97	3.61	4.09	1yr
2yr	0.32	0.49	0.61	0.82	1.01	1.20	2yr	0.87	1.18	1.37	1.81	2.31	3.06	3.39	2yr	2.71	3.26	3.77	4.46	5.10	2yr
5yr	0.36	0.56	0.70	0.96	1.22	1.44	5yr	1.05	1.41	1.63	2.11	2.70	3.72	4.15	5yr	3.29	3.99	4.60	5.52	6.17	5yr
10yr	0.41	0.62	0.77	1.08	1.40	1.65	10yr	1.21	1.62	1.84	2.38	3.03	4.30	4.83	10yr	3.80	4.64	5.35	6.47	7.08	10yr
25yr	0.47	0.72	0.89	1.27	1.67	1.98	25yr	1.44	1.93	2.15	2.75	3.52	5.18	5.88	25yr	4.58	5.66	6.53	7.98	8.78	25yr
50yr	0.52	0.80	0.99	1.42	1.92	2.27	50yr	1.65	2.22	2.42	3.09	3.95	5.95	6.82	50yr	5.27	6.56	7.58	9.37	10.15	50yr
100yr	0.59	0.89	1.12	1.61	2.21	2.61	100yr	1.91	2.55	2.73	3.46	4.42	6.83	7.90	100yr	6.05	7.59	8.82	11.01	11.73	100yr
200yr	0.66	1.00	1.26	1.83	2.55	2.99	200yr	2.20	2.92	3.06	3.87	4.95	7.84	9.78	200yr	6.94	9.40	10.26	12.96	13.57	200yr
500yr	0.78	1.16	1.49	2.17	3.08	3.60	500yr	2.66	3.52	3.57	4.48	5.78	9.38	12.09	500yr	8.30	11.62	12.53	16.09	16.44	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.45	0.55	0.74	0.91	1.09	1yr	0.78	1.06	1.27	1.67	2.12	2.85	3.08	1yr	2.53	2.97	3.40	4.06	4.81	1yr
2yr	0.34	0.52	0.64	0.87	1.08	1.28	2yr	0.93	1.25	1.48	1.94	2.47	3.27	3.62	2yr	2.90	3.48	4.02	4.76	5.46	2yr
5yr	0.42	0.64	0.80	1.09	1.39	1.65	5yr	1.20	1.62	1.90	2.47	3.14	4.32	4.87	5yr	3.83	4.68	5.36	6.26	7.13	5yr
10yr	0.50	0.77	0.95	1.33	1.72	2.02	10yr	1.48	1.98	2.31	3.00	3.78	5.38	6.09	10yr	4.76	5.85	6.68	7.77	8.81	10yr
25yr	0.63	0.96	1.20	1.71	2.25	2.64	25yr	1.94	2.59	3.01	3.87	4.82	7.17	8.22	25yr	6.35	7.91	8.93	10.34	11.33	25yr
50yr	0.75	1.15	1.43	2.05	2.76	3.24	50yr	2.38	3.16	3.67	4.69	5.81	8.93	10.32	50yr	7.91	9.93	11.13	12.84	13.91	50yr
100yr	0.91	1.37	1.71	2.48	3.40	3.96	100yr	2.93	3.87	4.50	5.70	7.01	11.11	12.96	100yr	9.83	12.46	13.87	15.96	17.11	100yr
200yr	1.08	1.63	2.06	2.99	4.17	4.85	200yr	3.59	4.74	5.51	6.93	8.44	13.84	15.36	200yr	12.25	14.77	17.29	19.83	21.06	200yr
500yr	1.38	2.05	2.64	3.83	5.45	6.34	500yr	4.71	6.19	7.21	8.99	10.83	18.52	20.53	500yr	16.39	19.75	23.15	26.42	27.76	500yr

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-226

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 0.57 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW<Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 8.03 ft

TW>Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW<Do $W_2 = 3Do + La$
W₂ = 11.03 ft.

TW>Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.04 ft. 0.46 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-225

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 0.72 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 8.30 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 11.30 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.05 ft. 0.63 in.

Use 3" minimum D₅₀ ==> D₅₀ = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-227

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 0.6 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 8.08 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 11.08 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.04 ft. 0.49 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-234

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 0.63 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 8.13 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 11.13 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.04 ft. 0.53 in.

Use 3" minimum D₅₀ ==> D₅₀ = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-229

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 3.59 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 13.46 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 16.46 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.42 ft. 5.06 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-227

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 2.97 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 12.35 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 15.35 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.33 ft. 3.95 in.

Use 3" minimum D₅₀ ==> D₅₀ = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-231

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 0.02 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 7.04 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 10.04 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ =

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.00 ft. 0.01 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-233

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 1.11 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 9.00 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 12.00 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.09 ft. 1.10 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: p-236

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 0.28 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW<Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 7.50 ft

TW>Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW<Do $W_2 = 3Do + La$
W₂ = 10.50 ft.

TW>Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.02 ft. 0.18 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-235

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 0.95 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW<Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 8.71 ft

TW>Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂)

TW<Do $W_2 = 3Do + La$
W₂ = 11.71 ft.

TW>Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.07 ft. 0.90 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-235

Pipe Size (Do): 24 in. 2 ft

Q25 (cfs): 20.58 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 27.10 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂):

TW < Do $W_2 = 3Do + La$
W₂ = 33.10 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 2.04 ft. 24.47 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 6.00 ft.

Project Name: P5- PUZZLE LANE / COLEMAN PLACE

JBE #: 21117

Town/City: NEWTON, NH

Date: 8/14/2023

Rip Rap Outlet Protection Calculation

Outlet Designation: P-235

Pipe Size (Do): 12 in. 1 ft

Q25 (cfs): 1.23 cfs

Tailwater Elevation (TW)(ft): 0.25 if TW = 0, assume 3"

Apron Length (La):

TW < Do YES $La = 1.8Q/Do^{1.5} + 7Do$
La = 9.21 ft

TW > Do No $La = 3.0Q/Do^{1.5} + 7Do$
La =

Apron Width (W₂)

TW < Do $W_2 = 3Do + La$
W₂ = 12.21 ft.

TW > Do $W_2 = 3Do + .4La$
W₂ = ft.

Rip-Rap Diameter (D₅₀):

D₅₀: $D_{50} = 0.02Q^{1.3}/TW*Do$
D₅₀ = 0.10 ft. 1.26 in.

Use 3" minimum D₅₀ ==> D50 = 4.0 in.

Rip-Rap Thickness (T):

$T = 2.5*D_{50}$
T = 10.0 in.

Apron Width (W₁):

$W_1 = 3*Do$
W₁ = 3.00 ft.

Site Specific Soil Map Report
125 Development Corp.
Map 14 Lot 27-3
NH Route 108, Newton, NH
June 30, 2020

I. Introduction

This property is located off the north side of NH Route 108 in Newton along the Newton/Plaistow town line. This is a primarily deforested property that has been the site of human disturbance for some time. There are areas of current sand and gravel mining, areas of past sand and gravel removal and areas of current material recycling such as concrete, pavement as well as soil. There is a gravel road that bisect the property between NH Route 108 and Puzzle Lane. Large portions of this property near the southwest and northeast have nearly level slopes while areas to the northwest and southeast are hilly with some very steep slopes. This parcel is primarily composed of glacial outwash soils with a very small portion composed of glacial till soils and some organic soils in the larger wetland areas.

II. Methodology

This map has been completed following the guidelines outlined in the Site Specific Soil Mapping Standards for Vermont and New Hampshire, Version 4 dated February 2011. On site mapping was conducted June 10 - 18, 2020.

III Soil Characteristics

The soils on this parcel were found to consist primarily of glacial outwash soils with small areas of glacial till. Some organic soils were found in the larger wetland areas. Drainage classes ranged from excessively well drained to very poorly drained. The well drained glacial till soils are classified as the Canton series. These are dep soils with textures of loamy sand to sandy loam with a granular structure and friable consistency. Slope ranges of 3 to over 25% were encountered. The moderately well drained glacial till soils are classified as the Newfields Series. These soils have a loamy sand to sandy loam texture with granular structure and friable consistency. Slope ranges of 3-8% were encountered. The Somewhat Poorly Drained glacial till soils are classified as the Newfields Variant Series. These soils have a loamy sand to sandy loam texture with a granular structure and friable consistency. Slope ranges of 3-8% were encountered.

The glacial outwash soils that are Excessively Well Drained are classified as the Hinckley and Windsor Series. Both of these soil series are deep coarse to fine sands with single grain structure and loose consistency. The Hinckley Series was more common on this parcel than the Windsor Series. The Hinckley Series is composed of coarser particle sizes of sand and gravels and the Windsor Series is composed of medium to fine sands. Both soil types have single grain structure and loose consistency. Slope ranges of 0% to over 25% were encountered. The Moderately Well Drained outwash soils are classified as the Deerfield Series. These are deep fine sands with a single grain structure and loose consistency. Slope ranges of 3-15% were encountered. The Somewhat Poorly Drained outwash soils are classified as the Deerfield Variant Series. These are deep medium and fine sands with a single grain structure and loose consistency. Slope ranges of 3-8% were encountered. The Very Poorly Drained outwash soils are classified as the Scarboro Series. These are deep sandy soils with a single grain structure and loose consistency. Slope ranges of 0-3% were encountered.

The organic soils are classified as Swansea Series. These are Very Poorly Drained mucky soils composed of sapric organic matter that is regularly flooded. Slope ranges of 0-3% were encountered.

The human disturbed soils with a sandy texture are classified as Udipsamments. These are soils that were excavated. The texture is coarse and fine sands with a single grain structure and loose consistency. Drainage classes of Excessively Well Drained to Somewhat Poorly Drained were found with slope ranges of 3-25%. Human disturbed soils with a sandy texture that are poorly drained and Very Poorly Drained are classified as Endoaquents. These soils were found to have medium to fine sand texture with single grain structure and loose consistency, Slope ranges of 0-3% were encountered. The human disturbed soils with a loamy texture are classified as Udorthents. These are soils that have been disturbed both by filling and excavating. The textures are loamy sand to sandy loams with a granular structure and friable consistency. Drainage classes of Well Drained to Somewhat Poorly Drained were found. Slope ranges of 0-3% were encountered.

III. Certification

The Site-Specific Soil Mapping was performed by Timothy Ferwerda, NH Certified Soil Scientist #003 between June 10 and June 18, 2020.

Following is the soil legend of the map:

12A – Hinckley Series, 0-3% slope – Excessively Well Drained, Hydrologic Group A
12B – Hinckley Series, 3-8% slope – Excessively Well Drained, Hydrologic Group A
12C – Hinckley Series, 8-15% slope – Excessively Well Drained, Hydrologic Group A
12D – Hinckley Series, 15-25% slope – Excessively Well Drained, Hydrologic Group A
12E – Hinckley Series, >25% slope – Excessively Well Drained, Hydrologic Group A
26B – Windsor Series, 3-8% slope – Excessively Well Drained, Hydrologic Group A

26C – Windsor Series, 8-15% slope – Excessively Well Drained, Hydrologic Group A
 26D – Windsor Series, 15-25% slope – Excessively Well Drained, Hydrologic Group A
 34B – Wareham Series, 3-8% slopes – Poorly Drained, Hydrologic Group C
 115A – Scarborough Series, 0-3% slope – Very Poorly Drained, Hydrologic Group D
 313B – Deerfield Series, 3-8% slopes – Moderately Well Drained, Hydrologic Group B
 313C – Deerfield Series, 8-15% slopes – Moderately Well Drained, Hydrologic Group B
 395A – Swansea Series, 0-3% slopes – Very Poorly drained, Hydrologic Group D
 915B – Deerfield Variant Series, 3-8% slopes – Somewhat Poorly Drained, Hydrologic Group B
 921B – Newfields Variant Series, 3-8% slopes – Somewhat Poorly Drained, Hydrologic Group B

Human Disturbed Soils

300aA – Udipsamments, 3-8% slopes – Excessively Well Drained, Hydrologic Group A
 300cB – Udipsamments, 3-8% slopes – Well Drained, Hydrologic Group A
 300cC – Udipsamments, 8-15% slopes – Well Drained, Hydrologic Group A
 300cD – Udipsamments, 15-25% slopes – Well Drained, Hydrologic Group A
 300cE – Udipsamments, >25% slopes – Well Drained, Hydrologic Group A
 300dB – Udipsamments, 3-8% slopes – Moderately Well Drained, Hydrologic Group A
 350dB – Udipsamments, 3-8% slopes – Moderately Well Drained, Hydrologic Group B
 350eB – Udipsamments, 3-8% slopes – Somewhat Poorly drained, Hydrologic Group B
 500cB – Udorthents, loamy, 3-8% slopes – Well Drained, Hydrologic Group B
 500dB – Udorthents, loamy, 3-8% slopes – Moderately Well Drained, Hydrologic Group B
 500eB – Udorthents, loamy, 3-8% slopes – Somewhat Poorly Drained, Hydrologic Group C
 900eB – Endoaquents, 3-8% slopes – Poorly Drained, Hydrologic Group C
 900gA – Endoaquents, 0-3% slopes – Very Poorly Drained, Hydrologic Group D





85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

SITE EVALUATION and INFILTRATION FEASIBILITY REPORT

**Southern New Hampshire Industrial Park
Multi-family Residential Development**

**Map 14, Block 1, Lot 2
Coleman Place
Newton, NH 03858**

Prepared for:

**125 Development NH Corp.
PO Box 532
Plaistow, NH 03865**

Prepared by:

**Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
8/14/2023
Rev 1: 10/10/2023
JBE Project No. 21117**

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i

I. Project Summary

The purpose of this project is to construct 2 roads (Puzzle Lane and Coleman Place), 9 residential multi-family buildings containing 44 units, and associated parking and utilities as part of Phase-5 of the Southern NH Industrial Park Development.

Soil information for the site was gathered from a Site-Specific Soil Survey Report, prepared by Ferwerda Mapping LLC, on-site test pits, and on-site infiltration testing. Soils were identified as;

<u>Symbol</u>	<u>Soil Taxonomic Name</u>	<u>Hydrologic Soil Group</u>
12	Hinckley	A
26	Windsor	A
34	Windham	C
42	Canton	B
115	Scarboro	B
313	Deerfield	B
395	Swansea	D
915	Deerfield Variant	B
921	Newfields Variant	B
300	Udipsamments	A
350	Udipsamments	B
500	Udorthents	C
900	Udorthents	D

Groundwater recharge will be accomplished through the utilization of two (2) biofiltration basins.

II. Location of Practice(s)

Biofiltration Basin #6 – Biofiltration Basin #6 is located at proposed extension road station 20+00.

Biofiltration Basin #7 - Infiltration basin #2 is located to the west of proposed Coleman place.

III. Existing Topography at the Location of the Practice(s)

Biofiltration Basin #6 - The existing topography around biofiltration basin #6 slopes to the east and is covered with grass and brush.

Biofiltration Basin #7 – Biofiltration Basin #7 is located at a local low point. The area is currently wooded.

III. Test Pit/Boring Location(s)

Biofiltration Basin #6 - The basin bottom is approximately 1,064 S.F.

At 2 locations within the basin footprint, a total of 6 compact constant head permeameter (amoozemeter) tests were conducted. These tests are identified as TP-110 on project plans.

Two test pits were dug in the proposed basin location. The test pit locations are identified as TP-21 and TP-110 on project plans.

Biofiltration Basin #7 – The basin bottom is approximately 7,465 S.F.

At 3 locations within the basin footprint, a total of 9 compact constant head permeameter (amoozemeter) tests were conducted. These tests are identified as TP-105 and TP-106 on project plans.

Two test pits were dug in the proposed basin location. The test pits are identified as TP-105 AND TP-106 on project plans.

V. Seasonal High Water Table (SHWT) and Bedrock Elevations

Biofiltration Basin #6:

Bottom of System Elevation = 116.00'

TP 21: Existing Surface Elevation of TP = 114.75'
SHWT = 38" = 111.58'
Bedrock = N/A
Deepest Elevation of TP = 66" = 106.35'

TP 110: Existing Surface Elevation of TP = 114.25'
SHWT = 28" = 111.92'
Bedrock = N/A
Deepest Elevation of TP = 31" = 111.67'

Biofiltration Basin #7:

Bottom of System Elevation = 119.00'

TP 105: Existing Surface Elevation of TP = 117.10'
SHWT = 28" = 113.80'
Bedrock = N/A
Deepest Elevation of TP = 66" = 111.60'

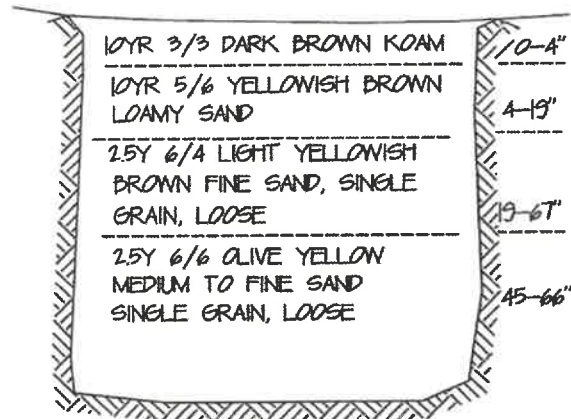
TP 106: Existing Surface Elevation of TP = 117.30'
SHWT = 28" = 113.80'
Bedrock = N/A
Deepest Elevation of TP = 62" = 111.98'

VI. Profile Descriptions

Biofiltration Basin #6:

TEST PIT 21

MAY 19, 2010

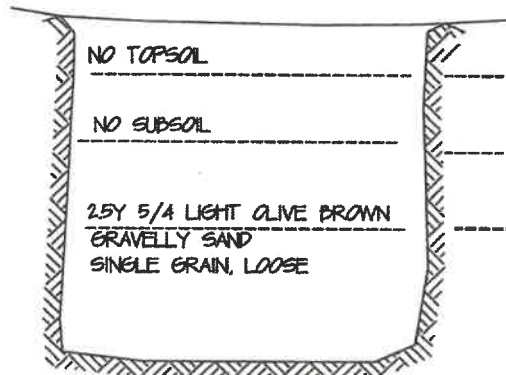


ROOTS 30" SHWT 38"
LEDGE NONE WATER 48"
HARDPAN NONE

PERCOLATION RATE <1 MIN/INCH AT 30 INCH DEPTH

TEST PIT 110

SEPT. 19, 2013



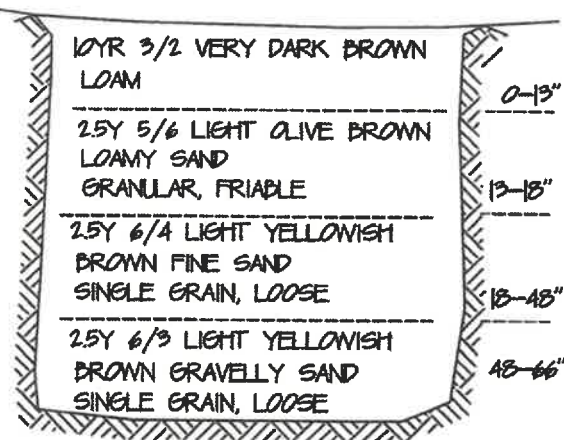
ROOTS NONE SHWT 28"
LEDGE NONE WATER 31"
HARDPAN NONE

PERCOLATION RATE <1 MIN/INCH AT 25 INCH DEPTH

Biofiltration Basin #7:

TEST PIT 105

SEPT. 19 2013

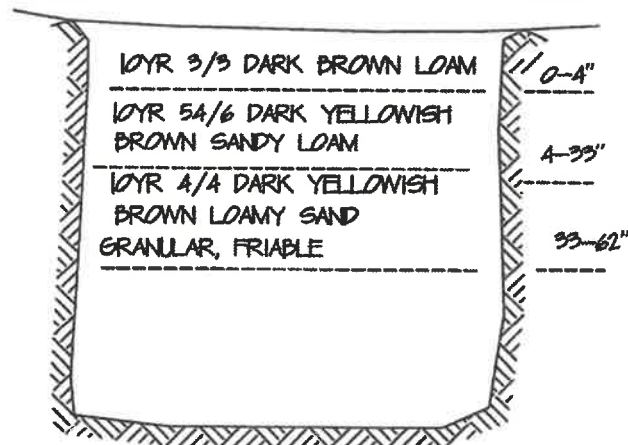


ROOTS 31" SHWT 26"
LEDGE NONE WATER 38"
HARDPAN NONE

PERCOLATION RATE 2 MIN/INCH AT 22 INCH DEPTH

TEST PIT 106

SEPT. 19, 2013



ROOTS 33" SHWT 28"
LEDGE NONE WATER 36"
HARDPAN NONE

PERCOLATION RATE 5 MIN/INCH AT 26 INCH DEPTH

VII. Soil Plans in the Area of the Proposed Practice(s)

See attached Grading & Drainage Detail Plans.

VIII. Summary of Field Testing Data Used to Determine Infiltration Rate

Biofiltration Basin #6 - the infiltration rate was determined through on site compact constant head permeameter (amoozemeter) testing.

The basin is located with native material identified in the Soil Series survey as Deerfield soils.

Amoozemeter testing was conducted and showed an average infiltration rate of 7.83 in/hr in this location.

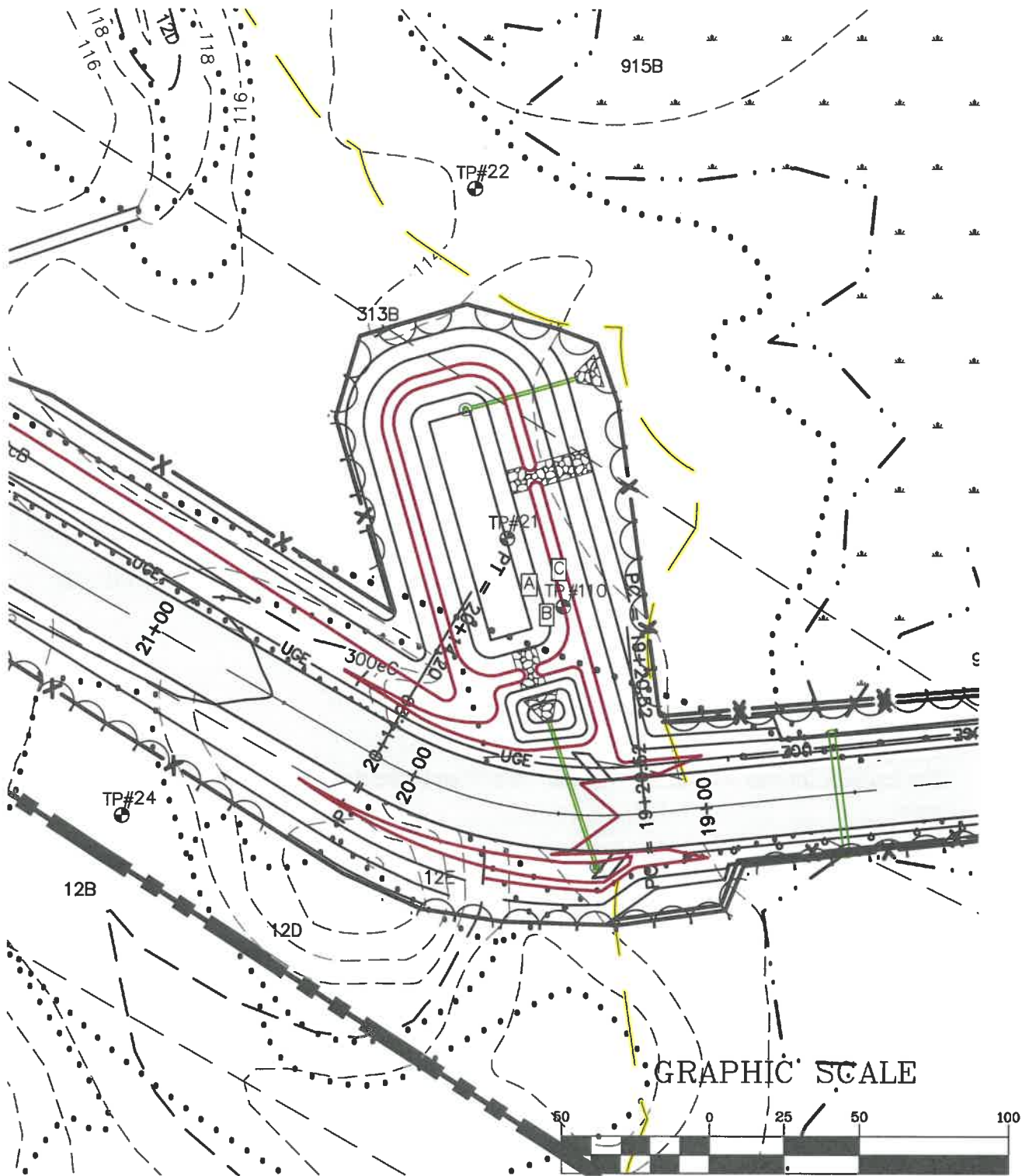
After applying a factor of safety of 2, the design rate used in the drainage analysis is 3.91 in/hr.

Biofiltration Basin #7 - the infiltration rate was determined through on site compact constant head permeameter (amoozemeter) testing.

The basin is located with native material identified in the Soil Series survey as Deerfield soils.

Amoozemeter testing was conducted and showed an average infiltration rate of 1.94 in/hr in this location.

After applying a factor of safety of 2, the design rate used in the drainage analysis is 0.97 in/hr.



GRAPHIC SCALE

(IN FEET)
1 inch = 50 feet

J/B Designed and Produced in NH
Jones & Beach Engineers, Inc.

Civil Engineering Services

85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885

603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

Drawing Name: **BIOFILTRATION BASIN #6**

Project: **SOUTHERN NH INDUSTRIAL PARK**

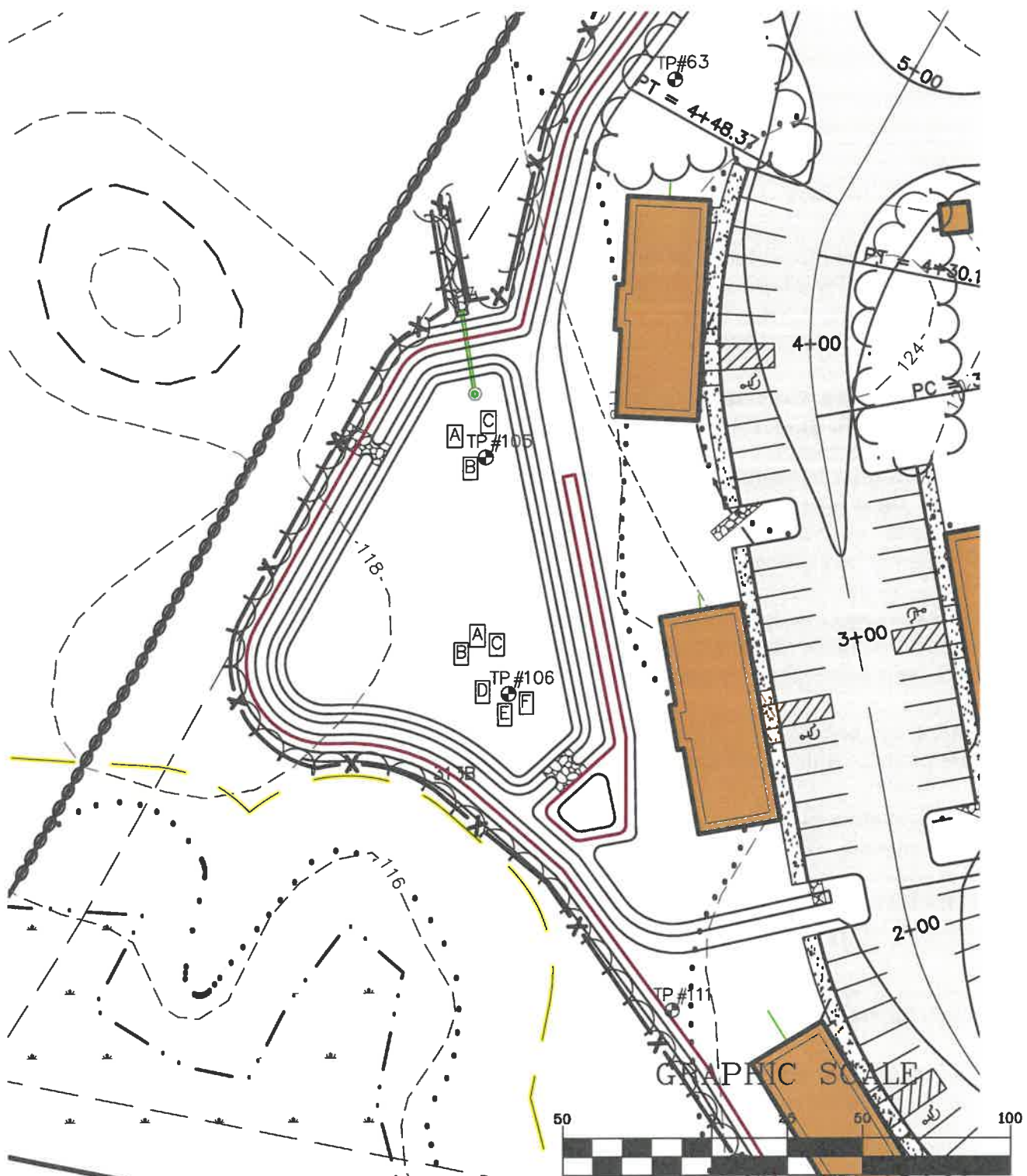
Owner of Record: **125 DEVELOPMENT NH CORP.
PO BOX 532, PLAISTOW, NH 03865**

DRAWING No.

IF6

SHEET 1 OF 2

JBE PROJECT
No. 21117.4



(IN FEET)
1 inch = 50 feet

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Jones & Beach Engineers, Inc.
Civil Engineering Services

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Stratham, NH 03885

603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

Drawing Name: **BIOFILTRATION BASIN #7**

Project: **SOUTHERN NH INDUSTRIAL PARK**

125 DEVELOPMENT NH CORP.
Owner of Record: **PO BOX 532, PLAISTOW, NH 03865**

DRAWING No.

IF7

SHEET 2 OF 2

JBE PROJECT
No. 21117.4

JONES & BEACH ENGINEERS INC.

85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

September 19, 2023

New Hampshire Department of Environmental Services
Alteration of Terrain Bureau
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

**RE: Southern New Hampshire Industrial Park
Map 14, Block 1, Lot 1-1 & 2
Puzzle Lane
Newton, NH 03858
JBE Project No. 21117**

To whom it may concern,

The following remarks summarize the results of permeability testing of soils for saturated hydraulic conductivity (Ksat) at the above-referenced location, as conducted On September 19, 2023 using a Compact Constant Head Permeameter (CCHP).

Testing was conducted at 2 basins as a part of Phase 5 of the Southern New Hampshire Industrial Park project. Soils on the entire property were mapped by Ferwerda Mapping, LLC.

At Bioretention Basin #6, the soils consist of A and B type soils including Deerfield and Udipsamments. The basin has an area of 4,200 sq.ft. and 6 tests were conducted at 2 locations.

At Bioretention Basin #7, the soils consist entirety of B type soil Deerfield. The basin has an area of 6,700 sq.ft. and 9 tests were conducted at 3 locations.

The tests were conducted at various depths within the B horizon. Please refer to the attached sketch for the location of the various tests.

The results of the permeability testing are summarized below. Test pits logs have been included with the infiltration feasibility report.

BIORETENTION BASIN #6			
TEST #	DEPTH (in.)	cm/hr	in/hr
110A	18	5.65	2.23
110B	20	6.21	2.44
110C	20	7.65	3.01
AVERAGE		6.50	2.56
110D	18	29.49	11.61
110E	19	32.82	12.92
110F	16	37.48	14.75
AVERAGE		33.26	13.10
KSAT AVERAGE			
		cm/hr	in/hr
AVERAGE		19.88	7.83
AVE. * 0.5		9.94	3.91

BIORETENTION BASIN #7			
TEST #	DEPTH (in.)	cm/hr	in/hr
105A	22	7.32	2.88
105B	19	3.99	1.57
105C	20	3.77	1.48
AVERAGE		5.03	1.98
106A	19	4.25	1.67
106B	18	6.72	2.64
106C	20	5.20	2.05
106D	20	2.49	0.98
106E	22	5.32	2.10
106F	22	5.10	2.01
AVERAGE		4.85	1.91
KSAT AVERAGE			
		cm/hr	in/hr
AVERAGE		4.94	1.94
AVE. * 0.5		2.47	0.97

Testing Summary Table		
Biofiltration Basin #	Ksat Average (in/hr)	Ksat Average (in/hr)(*0.5)
6	7.83	3.91
7	1.94	0.97

The infiltration rates calculated above have replaced the design infiltration rates for Bioretention Basin 6 and 7 that was used in prior revisions of the drainage analysis.

If you have any questions, please feel free to contact our office. Thank you for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Daniel Page, E.I.T.
 Project Engineer

Gravel Wetland #1:

TEST PIT 15

MAY 19, 2010



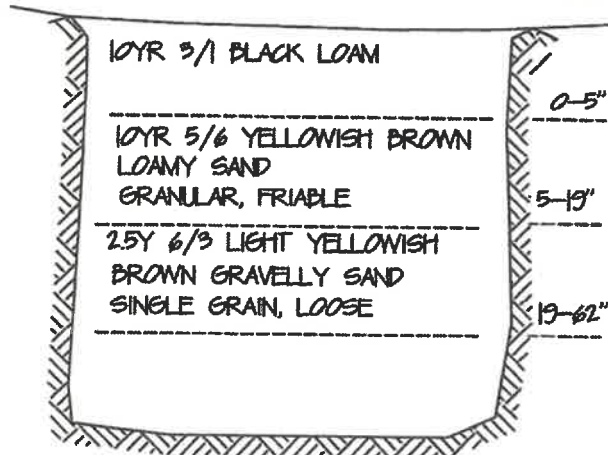
ROOTS	<u>40"</u>	SHWT	<u>50"</u>
LEDGE	<u>NONE</u>	WATER	<u>58"</u>
HARDPAN	<u>NONE</u>		

PERCOLATION RATE <1 MIN/INCH AT 36 INCH DEPTH

Gravel Wetland #2:

TEST PIT 109

SEPT. 19 2013



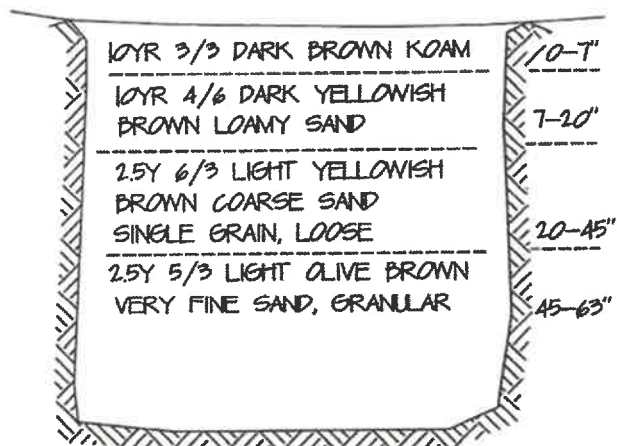
ROOTS	<u>30"</u>	SHWT	<u>28"</u>
LEDGE	<u>NONE</u>	WATER	<u>45"</u>
HARDPAN	<u>NONE</u>		

PERCOLATION RATE 2 MIN/INCH AT 22 INCH DEPTH

Gravel Wetland #3:

TEST PIT 41

MAY 21, 2010



ROOTS 30"
LEDGE NONE
HARDPAN NONE

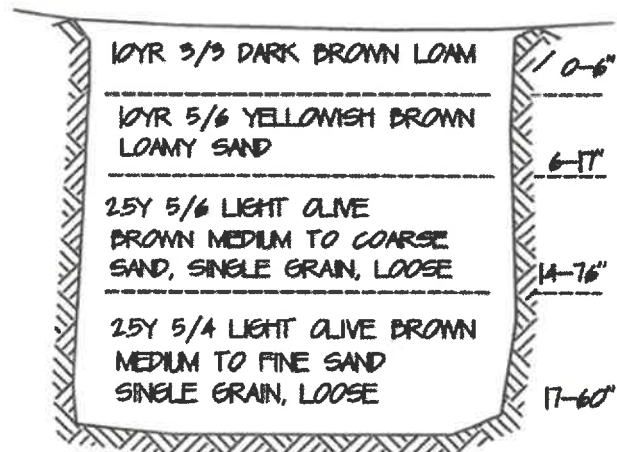
SHWT 30"
WATER 50"

PERCOLATION RATE <1 MIN/INCH AT 24 INCH DEPTH

Wet Pond #2:

TEST PIT 108

SEPT. 19, 2013



ROOTS 22"
LEDGE NONE
HARDPAN NONE

SHWT 22"
WATER 28"

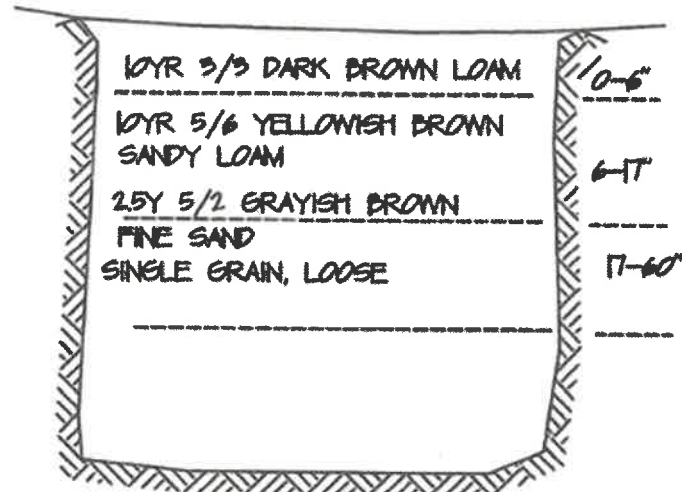
PERCOLATION RATE 1 MIN/INCH AT 20 INCH DEPTH



Wet Pond #3:

TEST PIT 107

SEPT 19, 2019



ROOTS 31"

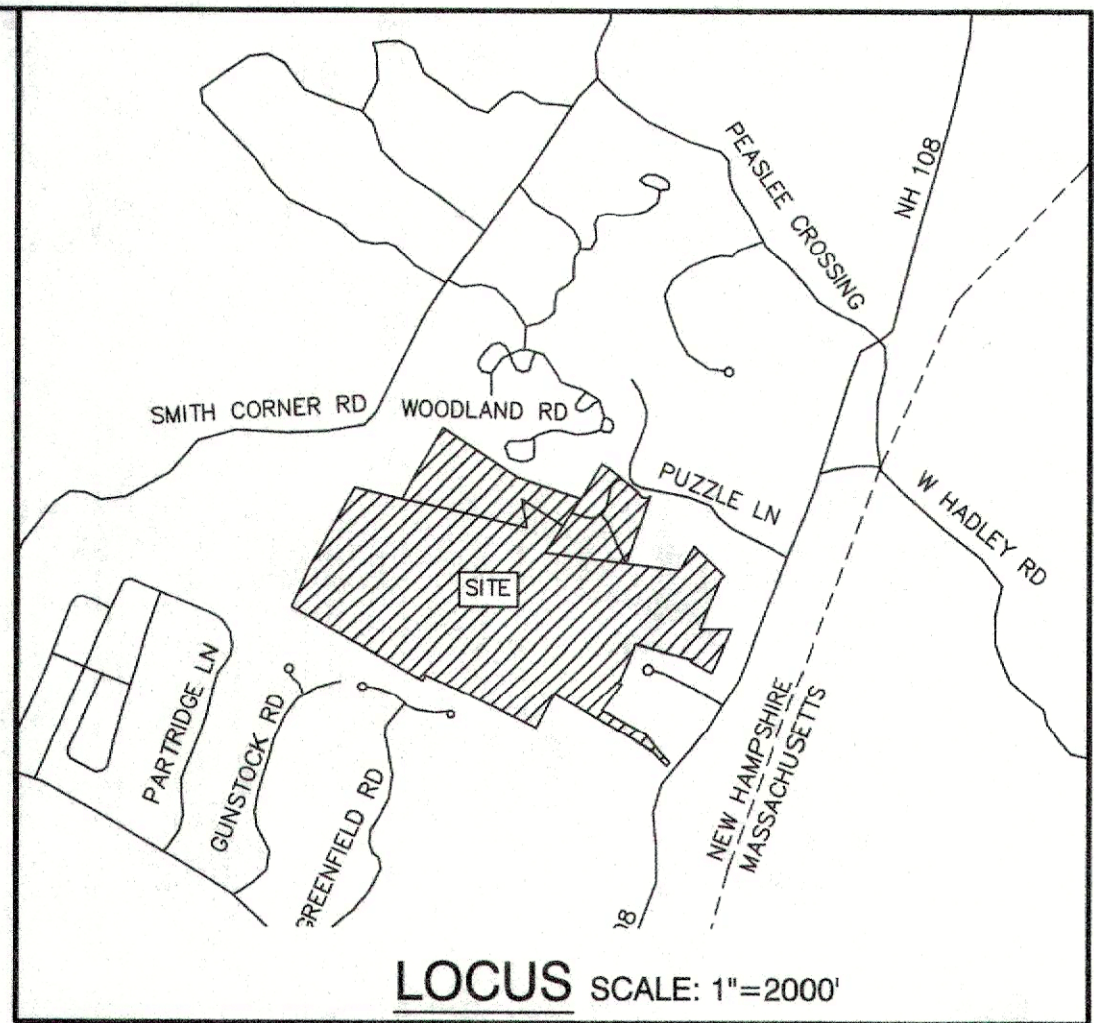
SHWT 28"

LEDGE NONE

WATER 30"

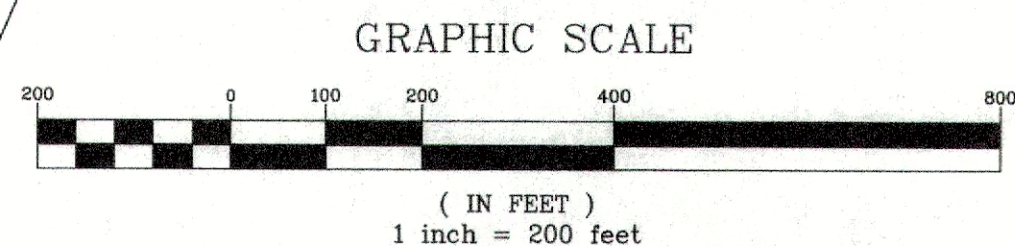
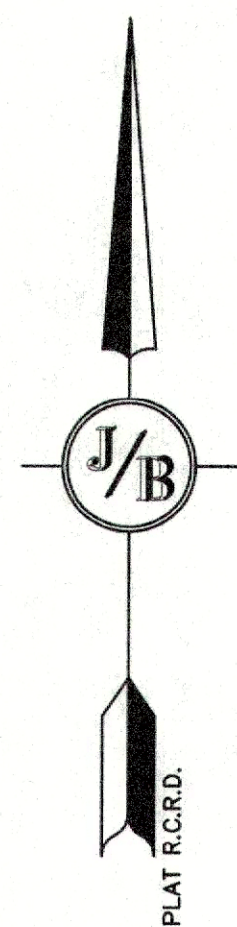
HARDPAN NONE

PERCOLATION RATE 2 MIN/INCH AT 24 INCH DEPTH



LEGEND

- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT
- REACH
- POND
- TC PATH
- WETLANDS
- HISS SOILS
- FLOW ARROW



PROJECT PARCEL
TOWN OF NEWTON
TAX MAP 14, BLOCK 1, LOT 2

APPLICANT/OWNER
125 DEVELOPMENT CORP.
PO BOX 532
PLAISTOW, NH 03865
BK 4348, PG 1700

TOTAL LOT AREA
718,721 SQ. FT.
16.50 ACRES

Design: BWG Draft: DFP Date: 08/16/2023
Checked: BWG Scale: AS NOTED Project No.: 21117
Drawing Name: 21117-WATERSHED-PHASE5.dwg
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV.	DATE	REVISION	BY
0	08/16/23	ISSUED FOR REVIEW	BWG

J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

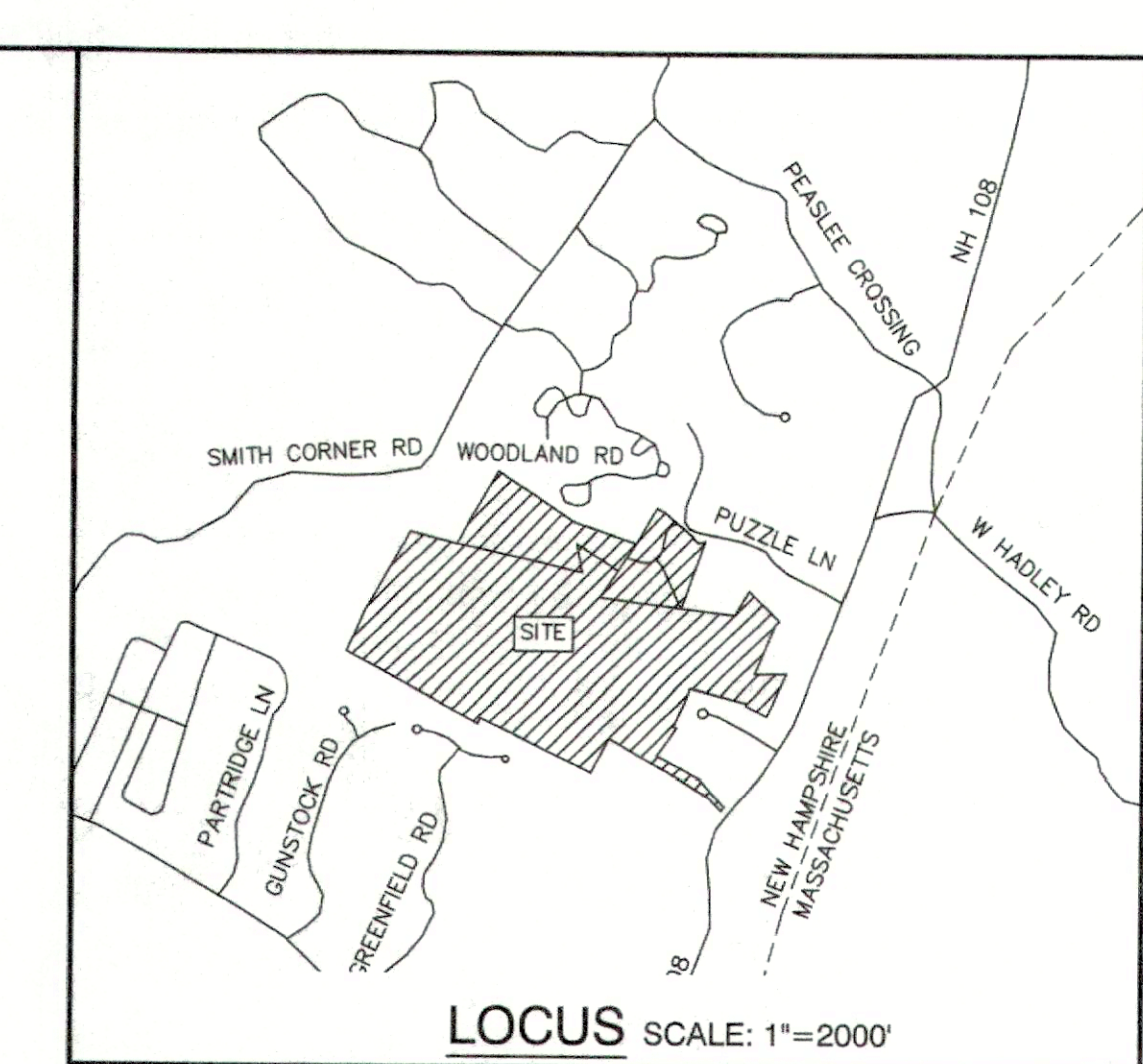
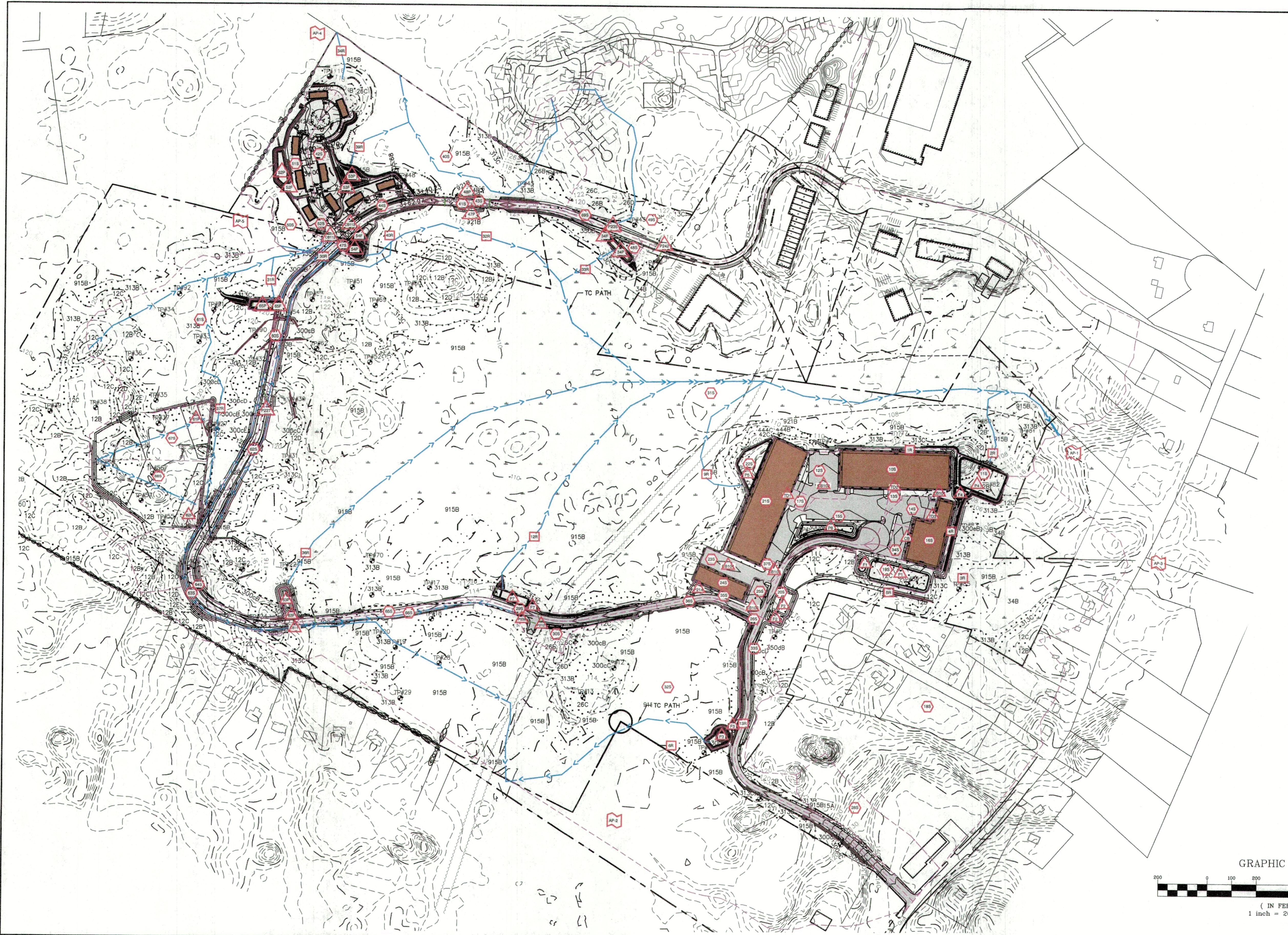
Plan Name: **EXISTING WATERSHED PLAN**
Project: **MULTI-FAMILY HOUSING DEVELOPMENT
PUZZLE LANE, NEWTON, NH 03858**
Owner of Record: **125 DEVELOPMENT NH CORP.
PO BOX 532, PLAISTOW, NH 03865**

DRAWING No.

W1

SHEET 1 OF 4
JBE PROJECT NO. 21117

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LEGEND

SUBCATCHMENT BOUNDARY	—
SUBCATCHMENT	X
REACH	X
POND	X
TC PATH	→
WETLANDS	---
HISS SOILS
FLOW ARROW	→

GRAPHIC SCALE

200 0 100 200 400 600

(IN FEET)
1 inch = 200 feet

PROJECT PARCEL
TOWN OF NEWTON
TAX MAP 14, BLOCK 1, LOT 2

APPLICANT/OWNER
125 DEVELOPMENT CORP.
PO BOX 532
PLAISTOW, NH 03865
BK 4348, PG 1700

TOTAL LOT AREA
718,721 SQ. FT.
16.50 ACRES

Design: BWG	Draft: DFP	Date: 08/16/2023
Checked: BWG	Scale: AS NOTED	Project No.: 21117
Drawing Name: 21117-WATERSHED-PHASE5.dwg		
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REV.	DATE	REVISION	BY

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Designed and Produced in NH

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Civil Engineering Services

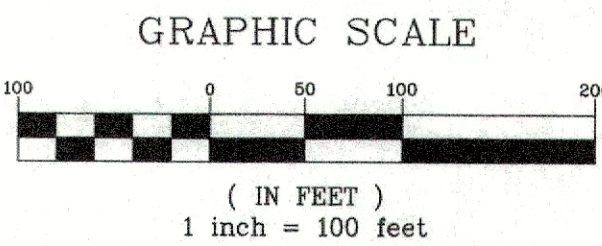
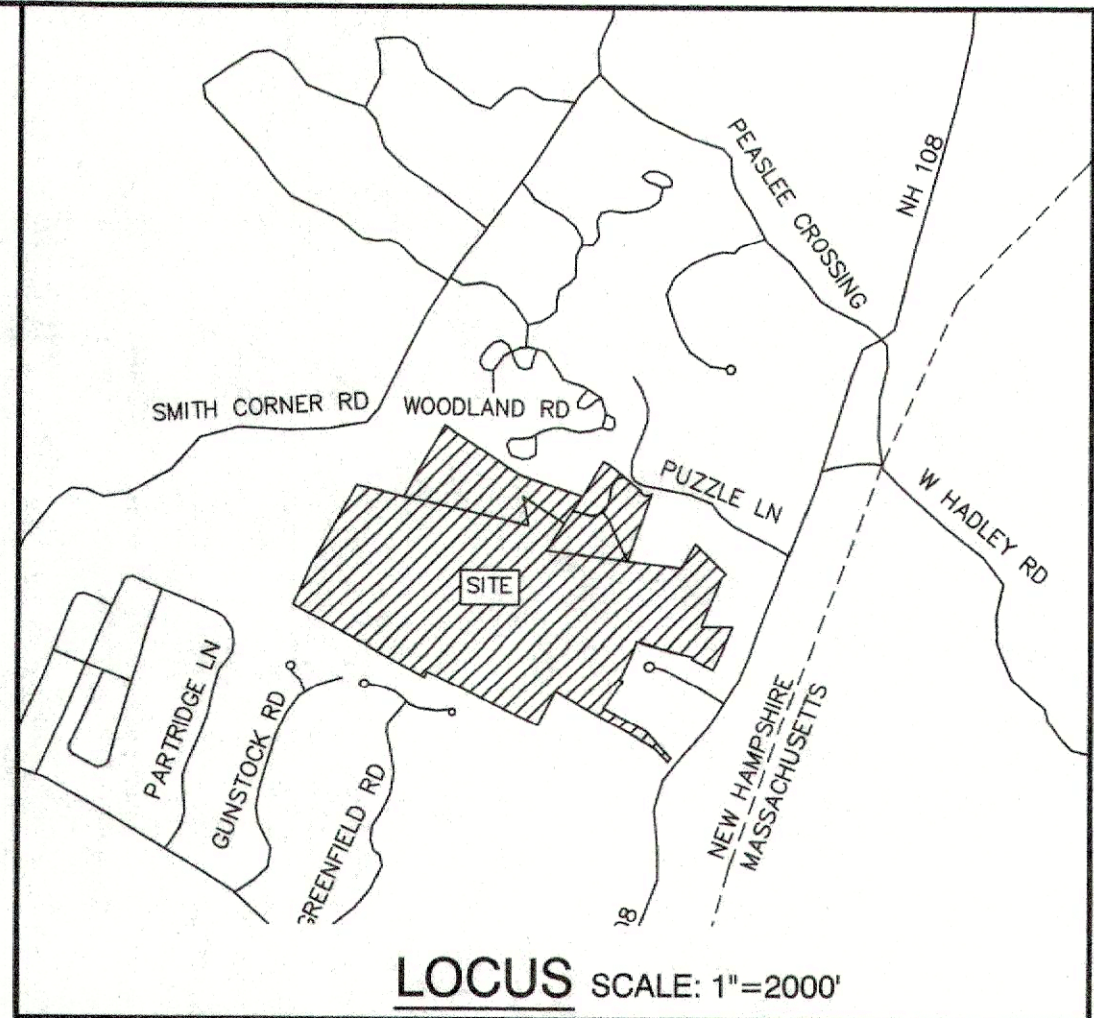
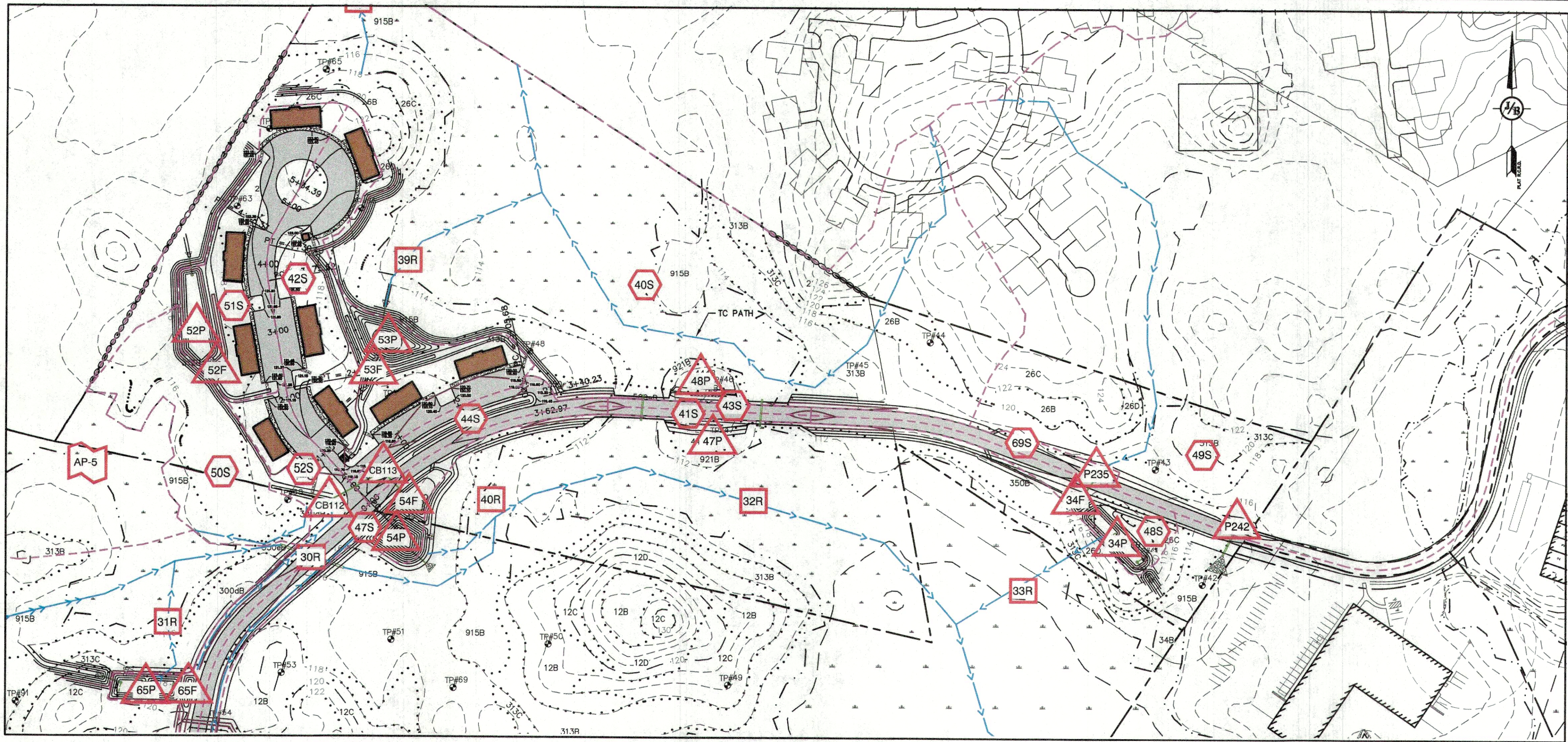
603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	PROPOSED WATERSHED PLAN
Project:	MULTI-FAMILY HOUSING DEVELOPMENT PUZZLE LANE, NEWTON, NH 03858
Owner of Record:	125 DEVELOPMENT NH CORP. PO BOX 532, PLAISTOW, NH 03865

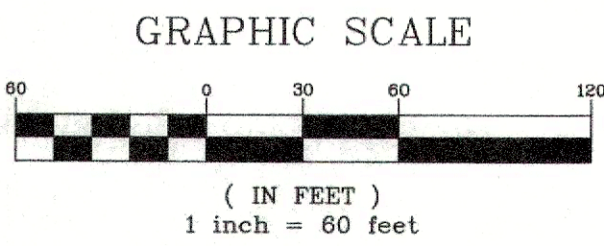
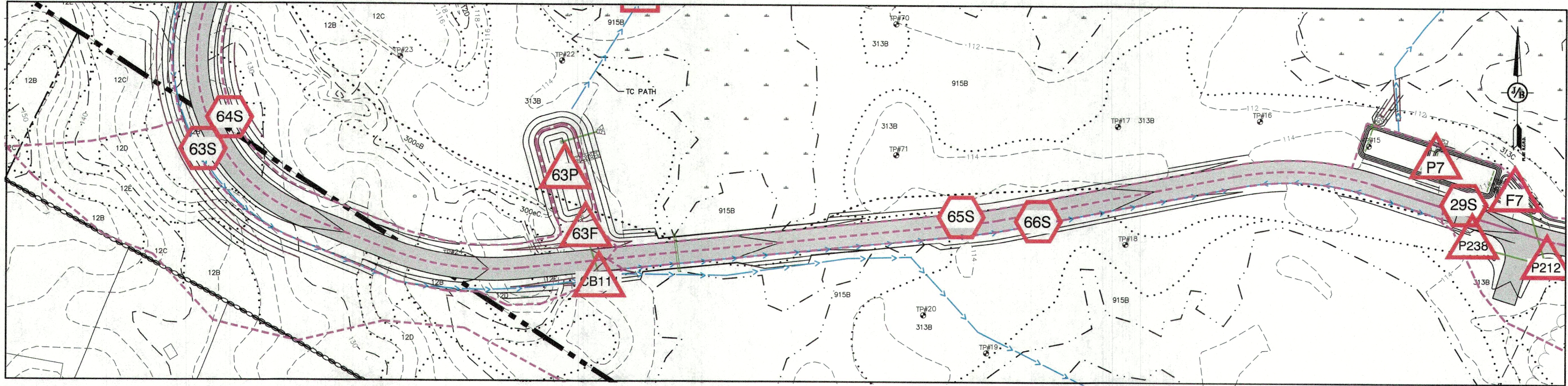
DRAWING No.

W2

SHEET 2 OF 4
JBE PROJECT NO. 21117



- LEGEND**
- SUBCATCHMENT BOUNDARY
 - SUBCATCHMENT
 - REACH
 - POND
 - TC PATH
 - WETLANDS
 - HISS SOILS
 - FLOW ARROW



PROJECT PARCEL
TOWN OF NEWTON
TAX MAP 14, BLOCK 1, LOT 2

APPLICANT/OWNER
125 DEVELOPMENT CORP.
PO BOX 532
PLAISTOW, NH 03865
BK 4348, PG 1700

TOTAL LOT AREA
718,721 SQ. FT.
16.50 ACRES

F:\CADD\MASTER STANDARD\DWG\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

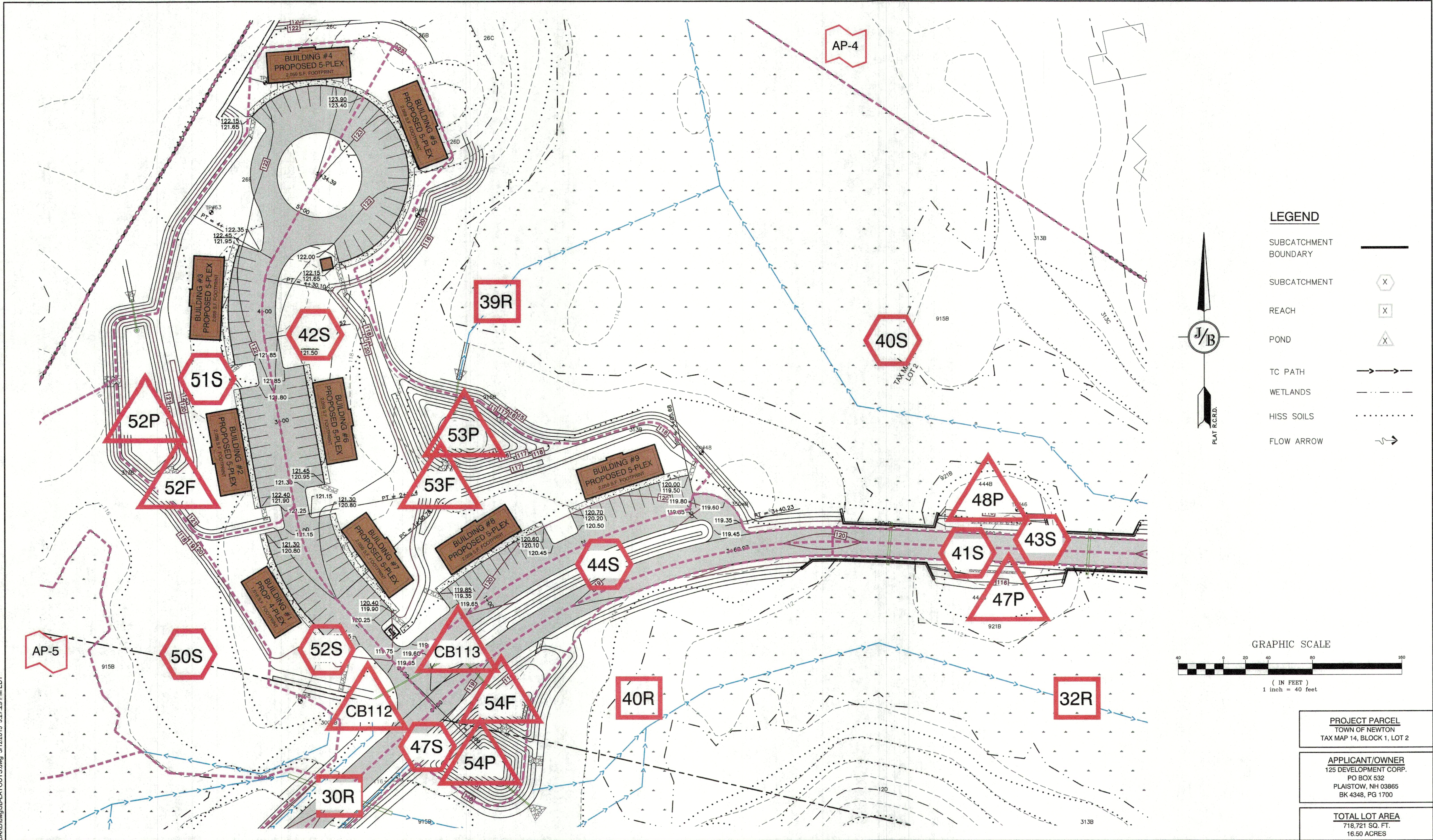
Design: BWG	Draft: DFP	Date: 08/16/2023
Checked: BWG	Scale: AS NOTED	Project No.: 21117
Drawing Name: 21117-WATERSHED-PHASE5.dwg		
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REV.	DATE	REVISION	BY
0	08/16/23	ISSUED FOR REVIEW	BWG

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PO Box 219
Stratham, NH 03865
Designed and Produced in NH
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FAX: 603-772-0227
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Plan Name: **PROPOSED WATERSHED PLAN**
Project: **MULTI-FAMILY HOUSING DEVELOPMENT
PUZZLE LANE, NEWTON, NH 03858**
Owner of Record: **125 DEVELOPMENT NH CORP.
PO BOX 532, PLAISTOW, NH 03865**

DRAWING No.
W2A
SHEET 3 OF 4
JBE PROJECT NO. 21117



Design: BWG Draft: DFP Date: 08/16/2023
Checked: BWG Scale: AS NOTED Project No.: 21117
Drawing Name: 21117-WATERSHED-PHASE5.dwg
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REV.	DATE	REVISION	BY

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FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **PROPOSED WATERSHED PLAN**
Project: **MULTI-FAMILY HOUSING DEVELOPMENT
PUZZLE LANE, NEWTON, NH 03858**
Owner of Record: **125 DEVELOPMENT NH CORP.
PO BOX 532, PLAISTOW, NH 03865**

DRAWING No.
W2B
SHEET 4 OF 4
JBE PROJECT NO. 21117