STORMWATER MANAGEMENT REPORT

FOR

NORTHERN ESSEX COMMUNITY COLLEGE ATHLETIC FIELD RENOVATIONS

Submitted to:

City of Haverhill Conservation Commission
4 Summer St., Room 300
Haverhill, MA 01886

February 26, 2026
Rev April 20, 2026

Prepared for:

Northern Essex Community College
100 Elliott St.
Haverhill, MA 01830

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Report Summary

Checklist for Stormwater Report

This Stormwater Report has been prepared to demonstrate compliance with the Massachusetts Stormwater Management Standards in accordance with the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00).

Project Overview:

Northern Essex Community College is proposing the construction of new athletic fields for the campus located at 100 Elliot Street in Haverhill. The new track and fields will replace the existing athletic fields. Site improvements include the new track and fields, tennis courts, bathroom facility, and associated sidewalks and utilities.

Site Description:

The campus is located just north of Kenoza Lake at the intersection of Elliott Street and Kenoza Street, and contains 109 acres of land. Much of the site is developed as the existing campus with buildings, parking lots, roadways, walkways, and athletic fields. There are two wetland areas on the campus near the areas of proposed improvements, one to the west of the Sports and Fitness Center and one to the southeast across the access drive. Both wetlands tributary to Cottles Creek, downstream of Kenoza Lake. Much of the campus including the center wetland and most of the areas proposed for pavement and accessibility improvements is drained by an existing closed drainage system which outfalls to Cottles Creek. A small portion of the proposed improvements is located within the wetland resource area buffer zone.

The existing site has a 23ft grade change and generally slopes from the north to south towards wetlands located to the west and southeast of the proposed work, with an elevation of 136 in the north portion of the site to 113 in the wetlands to the south.

According to Federal Emergency Management Agency (FEMA) flood insurance rate maps (FIRM), the project area is designated as a Zone A. The project site can be found on the City of Haverhill, Massachusetts, Essex County, Community No. 250085, Panel No. 91 of 552, Map Number 25009C0091F, Effective Date July 3, 2012 (see **Figure 2**).

Existing soil conditions within the limits of the project were taken from the Essex County, Massachusetts soils maps published by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) in cooperation with the Massachusetts Agriculture Experiment Station (See **Figure 3**).

The following soil groups have been identified at the site:

52A: Freetown muck, 0 to 1 percent slopes. Hydrologic Soil Group B/D

67A: Leicester fine sandy loam, 0 to 3 percent slopes. Hydrologic Soil Group A/D

73A: Whitman fine sandy loam, 0 to 3 percent slopes. Hydrologic Soil Group D

305B: Paxton fine sandy loam, 3 to 8 percent slopes. Hydrologic Soil Group C

305C: Paxton fine sandy loam, 8 to 15 percent slopes. Hydrologic Soil Group C

305D: Paxton fine sandy loam, 15 to 25 percent slopes. Hydrologic Soil Group C

306B: Paxton fine sandy loam, 0 to 8 percent slopes, very stoney. Hydrologic Soil Group C

306C: Paxton fine sandy loam, 8 to 15 percent slopes, very stoney. Hydrologic Soil Group C

311B: Woodbridge fine sandy loam, 0 to 8 percent slopes, very stoney. Hydrologic Soil Group C/D

Geotechnical investigations were performed by GeoEngineers in July 2025 and February 2026. Six test pits were excavated in July 2025. A soil textural analysis was performed by licensed soil evaluator in locations where infiltration is proposed. Based on the analysis infiltration rates of 0.27 in/hr were used based on Rawls rates per MassDEP. Copies of these documents are included in the **Appendix**.

Selection of Storm Events:

The storm events have been compiled from National Oceanic and Atmospheric Administration (NOAA) Atlas 14 24-hour rainfall data and are as followed:

Frequency (years)	Rainfall [24-hour event (inches)]
2	3.23
10	5.12
25	6.30
100	8.12

Existing Drainage Conditions:

The project area is currently developed with the existing NECC campus and associated parking and athletic fields. The existing site has a 23ft grade change and generally slopes from the north to south towards wetlands located to the west and southeast of the proposed work, with an elevation of 136 in the north portion of the site to 113 in the wetlands to the south. Currently, the site is comprised of 4 drainage areas which discharge to 4 design points. **Figure 4** illustrates the existing drainage patterns on site.

Existing Conditions Hydrologic Data

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX1 East Track	Southeast Wetlands	DP-1	4.39	83	13.2
EX2 West Track	Southeast Wetlands	DP-1	7.00	84	13.4
EX3 Direct to Wetland	West Wetland	DP-2	2.15	78	15.7
EX4 Ballfield	Southeast Wetlands	DP-1	5.25	77	23.9

Proposed Drainage Conditions:

Figure 5 illustrates the proposed post-construction drainage conditions for the project. As shown, the site will be divided into 11 drainage areas that discharge to the 2 Design Points. The table below provides a summary of the proposed conditions hydrologic data.

Proposed Conditions Hydrologic Data

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
PR1A Track & Field East	Southeast Wetlands	DP-1	2.33	85	6
PR1B Track & Field West	Southeast Wetlands	DP-1	2.12	87	6
PR1C North of Track & Field	Southeast Wetlands	DP-1	1.20	84	6
PR2 North of Fields	Southeast Wetlands	DP-1	2.63	81	12.9
PR3A Baseball Field North	Southeast Wetlands	DP-1	1.66	80	6
PR3B Baseball Field South	Southeast Wetlands	DP-1	1.75	78	6
PR3C North of Baseball Field	Southeast Wetlands	DP-1	0.79	85	6
PR4 Fitness Center	Southeast Wetlands	DP-1	1.28	95	6
PR5 Tennis Courts	West Wetland	DP-2	1.06	89	6
PR6 Direct to Wetlands	West Wetland	DP-2	0.73	81	15.4
PR7 South of Fields	Southeast Wetlands	DP-1	3.26	75	13.8

Stormwater Management Objectives:

The purpose of this analysis is to design a stormwater management system utilizing Best Management Practices (BMP's). Runoff coming from pavement and the building roof will be pretreated through infiltration trenches and gravel filtration before being discharged to meet with Massachusetts Department of Environmental Protection (MassDEP) stormwater management regulations for pretreatment and TSS removal. The proposed fields have been designed to allow stormwater runoff to infiltrate in order to meet Standards 3 and 4 for groundwater recharge volume and water quality volume

A duckbill valve will be installed in the outlet pipe that discharges to the surface detention basin as a back flow prevention device during larger storm events. This will prevent the proposed stormwater management system from surcharging.

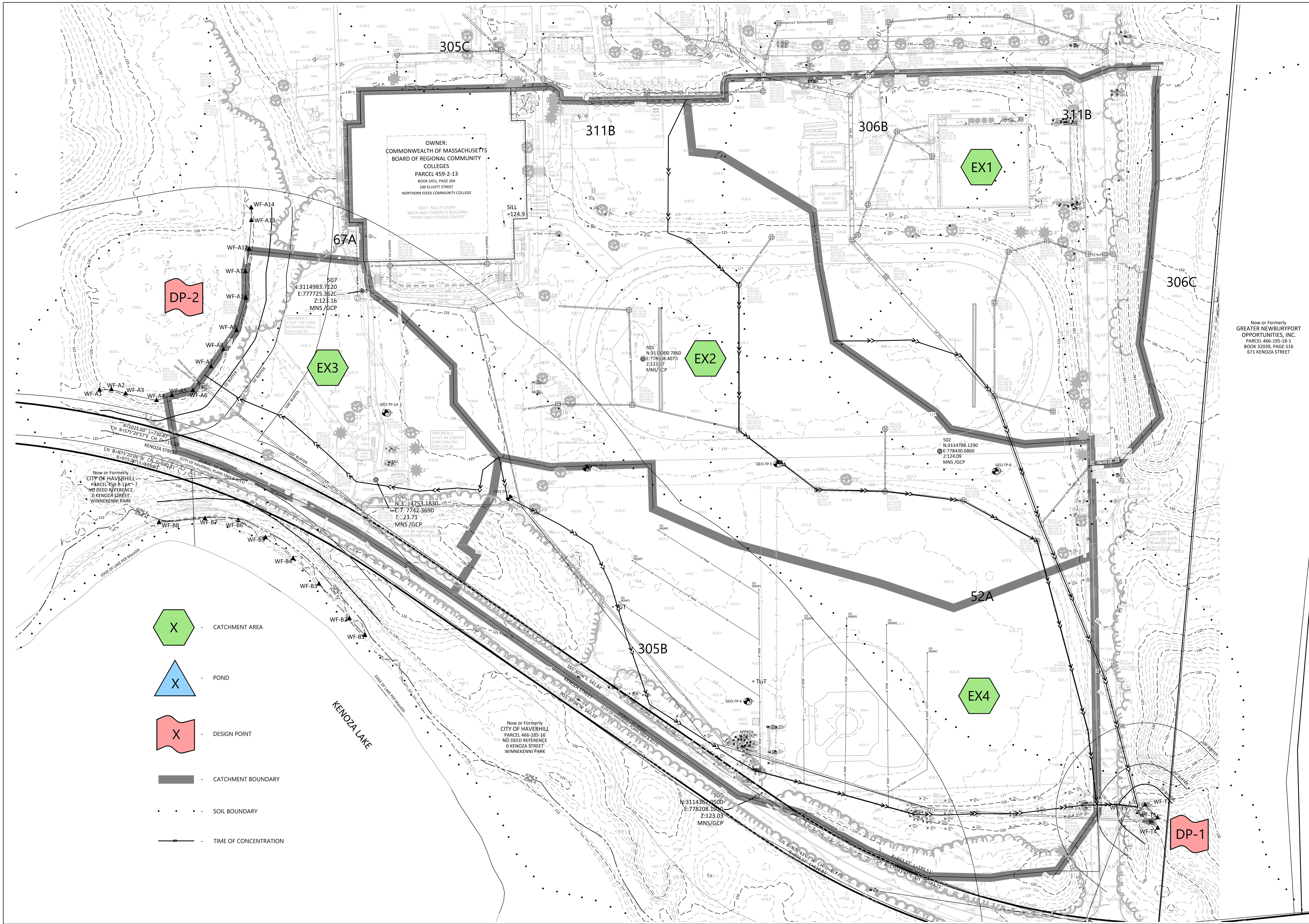
Figures

Figure 1 – USGS Map

Figure 2 – FEMA Flood Map

Figure 3 – NRCS Hydrologic Soil Groups

Figure 4 – Existing Conditions Drainage Plan



EXISTING CONDITIONS DRAINAGE PLAN

Northern Essex Community College

Haverhill, MA

PREPARED FOR

Jones Architecture

DATE: 02-26-2026

SCALE: 1" = 50'

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REVISIONS

NO.	DATE	DESCRIPTION	BY

CHECKED BY: CE

DRAWN BY: CG

PROJECT 25527

F-4

Figure 5 – Proposed Conditions Drainage Plan

PROPOSED CONDITIONS DRAINAGE PLAN
Northern Essex Community College
Haverhill, MA

PREPARED FOR
Jones Architecture

DATE: 02-26-2026

SCALE: 1" = 50'

OWNER:
COMMONWEALTH OF MASSACHUSETTS
BOARD OF REGIONAL COMMUNITY
EGES
9-2-13

Now or Formerly
GREATER NEWBURYPORT
OPPORTUNITIES, INC.
PARCEL 466-195-18-1
BOOK 32039, PAGE 516
671 KENOZA STREET

CITY OF HAVERHILL
PARCEL 350-2-11A
NO DEED REFERENCE
0 KENOZA STREET
WINNEKENNI PARK

CITY OF HAVERHILL
PARCEL 466-185-1P
NO DEED REFERENCE
0 KENOZA STREET
WINNEKENNI PARK

KENOZA LAKE

X	-	CATCHMENT AREA
X	-	POND
X	-	DESIGN POINT
	-	CATCHMENT BOUNDARY
	-	SOIL BOUNDARY
	-	TIME OF CONCENTRATION

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PROJECT 25527

F-5

Stormwater Management Standards

Standard 1: *No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

Response: The Best Management Practices (BMPs) included in the proposed stormwater management system have been designed in accordance with the Massachusetts Stormwater Handbook. Stormwater discharging from new outfalls will be pretreated through the use of infiltration trenches, gravel reservoirs below the fields and proprietary water quality units.

Standard 2: *Stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates. This standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.*

Response: The rainfall-runoff response of the Site under existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25 and 100-years. The results of the analysis, as summarized in the table below, indicate that there is no increase in peak discharge rates between the existing and proposed conditions.

TOTAL PEAK FLOW SUMMARY FOR PROJECT SITE

		2 Year	10 Year	25 Year	100 Year
DP-1	Existing	20.98 cfs	43.00 cfs	57.24 cfs	79.43 cfs
	Proposed	10.67 cfs	22.50 cfs	29.33 cfs	39.84 cfs
DP-2	Existing	2.37 cfs	5.27 cfs	7.20 cfs	10.23 cfs
	Proposed	0.95 cfs	5.13 cfs	6.91 cfs	9.64 cfs

(See Existing and Proposed Conditions HydroCAD Analysis)

Standard 3: *Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater best management best management practices, and good operation and maintenance. At minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.*

Response: The loss of groundwater recharge has been computed as prescribed in Standard 3 of the Stormwater Management Policy. Required recharge volumes were calculated by utilizing the depth of runoff corresponding to the soil type times the impervious areas covering that soil type at the post-development site.

Required Recharge Volume					
Hydrologic Group	Total Impervious Area	Recharged Impervious Area	inches	Adjustment Factor	Adjusted Recharge Volume
A	0.0 sf	0.0 sf	0.60	0.00	0.0 cf
B	0.0 sf	0.0 sf	0.35	0.00	0.0 cf
C	42,098.0 sf	39,796.0 sf	0.25	1.06	927.8 cf
D	78,001.0 sf	66,552.0 sf	0.10	1.17	761.8 cf
Total	120,099.0 sf	106,348.0 sf			1,689.6 cf
Provided Recharge Volume					
Baseball Field=	5,298.0 cf				
Track Field=	6,190.0 cf				
Infiltration Trench=	2,700.0 cf				
Total=	**11,488.0 cf**				

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)}$$

Where:
Rv = Storage Volume
K = Saturated Hydraulic Conductivity For "Static" and "Simple Dynamic" Methods, use Rawls Rate (see Table 2.3.3). For "Dynamic Field" Method, use 50% of the in-situ saturated hydraulic conductivity.
Bottom Area = Bottom Area of Recharge Structure[22]

Baseball Field	
Rv=	26491.8 cf
K=	0.27 in/hr*
Bottom Area=	132459.0 sf
Time =	8.89 hours

Track Field	
Rv=	21996.4 cf
K=	0.27 in/hr*
Bottom Area=	109982.0 sf
Time =	8.89 hours

Standard 4: *Stormwater management systems shall be designed to remove 80% of the average annual post-condition load of Total Suspended Solids (TSS). This standard is met when:*

a.) *Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*
b.) *Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and*
c.) *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

The required water quality volume equals 1 inch of runoff times the total impervious area of the post-development project site and greater than 80% TSS removal prior to discharge to the infiltration BMP.

(See Water Quality and TSS Removal Calculations Sheet.)

Standard 5: *For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If, through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow melt and stormwater runoff, the proponent shall use the specific structural stormwater BMP's determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L.c. 21, ss 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

The project is not a land use with higher potential pollutant loads.

Standard 6: *Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1. or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 4.00. Stormwater discharge to a Zone I or Zone A are prohibited unless essential to the operation of the public water supply.*

A stormwater discharge within a Zone II or Interim Wellhead Protection Area or near or to an Outstanding Resource Water, a Special Resource Water, a bathing beach, shellfish growing area, or cold-water fishery requires the use of a treatment train that provides 80% TSS removal prior to discharge. With the exception of runoff from a non-metal roof, and runoff from metal roofs located outside the Zone II or Interim Wellhead Protection Area of a public water supply or an industrial site, the treatment train shall provide for at least 44% TSS removal prior to discharge to the infiltration structure. For discharges within a Zone II or Interim Wellhead Protection Area or near or to an Outstanding Resource Water, a Special Resource Water, a shellfish growing area, a bathing beach, or a cold-water fishery, the treatment BMPs must be designed to treat the required water quality volume, a volume equal to one inch times the total impervious surfaces at the post-development site.

The project does not discharge within a Zone II or Interim Wellhead Protection Area. The project meets MassDEP and city standards for TSS removal and Phosphorous Removal. A portion of the project is located within Zone A. The proposed project discharges south of Zone A to Cottles Creek. The wetland west of the project also outlets to Cottles Creek, so there will be no discharges to Zone A. The project is also outside of the Kenoza Lake Watershed based on local Mapping.

Standard 7: *A redevelopment project is required to meet the following Stormwater Management Standards only to the Maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

The project is not a redevelopment project and therefore will comply with all required standards.

Standard 8: *A plan to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.*

The Project will disturb approximately 12.1 acres of land and is therefore required to obtain coverage under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit. As required under this permit, the contractor will prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) before land disturbance begins. Recommended construction period pollution prevention and erosion and sedimentation controls to be finalized in the SWPPP are included in the Appendix.

Standard 9: *A Long-Term Operation and Maintenance (O&M) Plan shall be developed and maintained to ensure that stormwater management systems function as designed.*

A long-term O&M Plan is attached as a separate document.

Standard 10: *All illicit discharges to the stormwater management system are prohibited.*

An Illicit Discharge Compliance Statement is attached as a separate document.

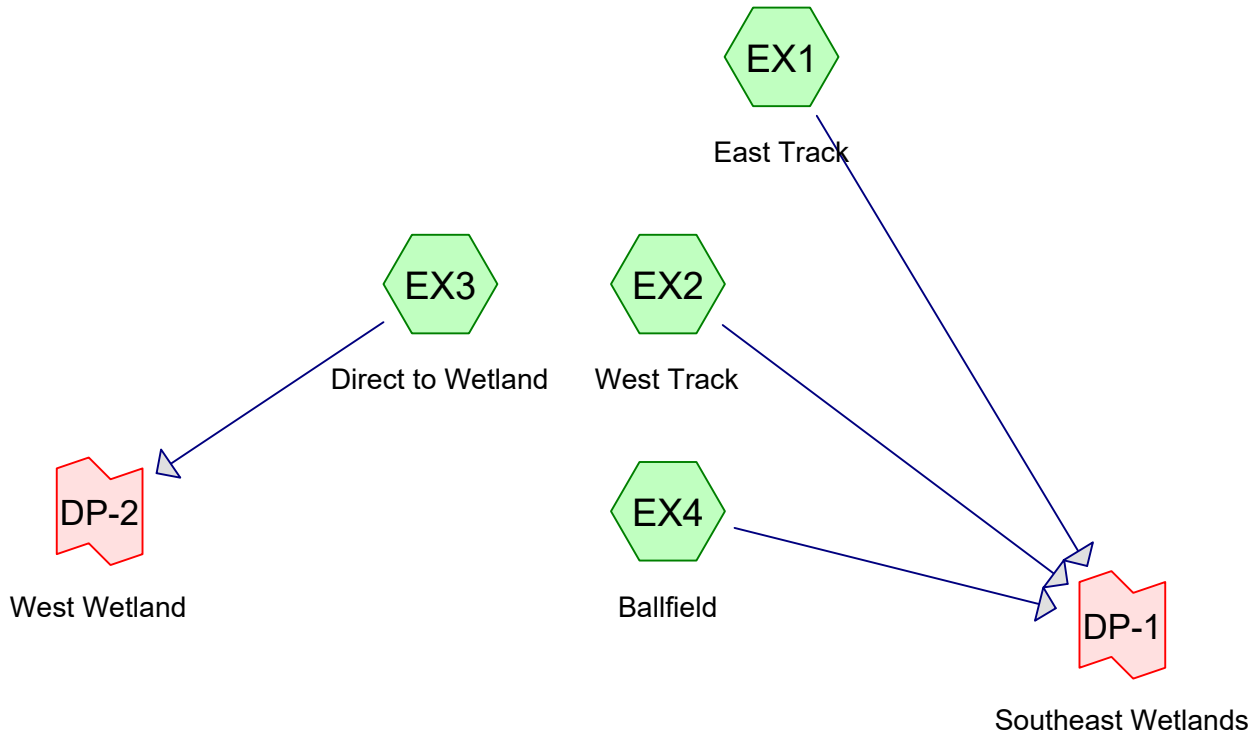
Appendix

Standard 1

Rip Rap Sizing

Standard 2

Existing Conditions HydroCAD Analysis



Subcat Reach Pond Link

Routing Diagram for 25527-EX
Prepared by Brennan Consulting, Printed 4/20/2026

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.23	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.12	2
3	25-yr	Type III 24-hr		Default	24.00	1	6.30	2
4	100-yr	Type III 24-hr		Default	24.00	1	8.12	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
6.397	74	>75% Grass cover, Good, HSG C (EX1, EX2, EX3, EX4)
7.426	80	>75% Grass cover, Good, HSG D (EX1, EX2, EX3, EX4)
1.545	98	Paved parking, HSG C (EX1, EX2, EX3, EX4)
1.340	98	Paved parking, HSG D (EX1, EX2, EX3, EX4)
0.022	98	Roofs, HSG C (EX2)
0.951	98	Roofs, HSG D (EX2)
0.900	70	Woods, Good, HSG C (EX3, EX4)
0.232	77	Woods, Good, HSG D (EX3)
18.813	**81**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
8.864	HSG C	EX1, EX2, EX3, EX4
9.949	HSG D	EX1, EX2, EX3, EX4
0.000	Other	
18.813		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	6.397	7.426	0.000	13.823	>75% Grass cover, Good	EX1, EX2, EX3, EX4
0.000	0.000	1.545	1.340	0.000	2.885	Paved parking	EX1, EX2, EX3, EX4
0.000	0.000	0.022	0.951	0.000	0.973	Roofs	EX2
0.000	0.000	0.900	0.232	0.000	1.132	Woods, Good	EX3, EX4
0.000	**0.000**	**8.864**	**9.949**	**0.000**	**18.813**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	EX1	0.00	0.00	530.0	0.0050	0.012	0.0	54.0	0.0	
2	EX2	0.00	0.00	1,042.0	0.0070	0.012	0.0	12.0	0.0	
3	EX4	0.00	0.00	201.0	0.0080	0.025	0.0	12.0	0.0	
4	EX4	0.00	0.00	68.0	0.0400	0.012	0.0	12.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX1: East Track Runoff Area=4.385 ac 29.99% Impervious Runoff Depth=1.63"
Flow Length=753' Tc=13.2 min CN=83 Runoff=6.65 cfs 0.597 af

Subcatchment EX2: West Track Runoff Area=6.994 ac 25.74% Impervious Runoff Depth=1.71"
Flow Length=1,236' Tc=13.9 min CN=84 Runoff=10.90 cfs 0.995 af

Subcatchment EX3: Direct to Wetland Runoff Area=2.152 ac 11.76% Impervious Runoff Depth=1.30"
Flow Length=431' Tc=15.7 min CN=78 Runoff=2.37 cfs 0.232 af

Subcatchment EX4: Ballfield Runoff Area=5.282 ac 9.28% Impervious Runoff Depth=1.23"
Flow Length=1,003' Tc=23.9 min CN=77 Runoff=4.64 cfs 0.543 af

Link DP-1: Southeast Wetlands Inflow=20.98 cfs 2.135 af
Primary=20.98 cfs 2.135 af

Link DP-2: West Wetland Inflow=2.37 cfs 0.232 af
Primary=2.37 cfs 0.232 af

Total Runoff Area = 18.813 ac Runoff Volume = 2.367 af Average Runoff Depth = 1.51"
79.49% Pervious = 14.955 ac 20.51% Impervious = 3.858 ac

Summary for Subcatchment EX1: East Track

Runoff = 6.65 cfs @ 12.19 hrs, Volume= 0.597 af, Depth= 1.63"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (ac)	CN	Description
1.527	74	>75% Grass cover, Good, HSG C
1.543	80	>75% Grass cover, Good, HSG D
0.791	98	Paved parking, HSG C
0.524	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
4.385	83	Weighted Average
3.070		70.01% Pervious Area
1.315		29.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0120	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
4.9	173	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	530	0.0050	9.47	150.64	**Pipe Channel, 54" RCP** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
13.2	753	Total			

Summary for Subcatchment EX2: West Track

[47] Hint: Peak is 337% of capacity of segment #3

Runoff = 10.90 cfs @ 12.19 hrs, Volume= 0.995 af, Depth= 1.71"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (ac)	CN	Description
0.861	74	>75% Grass cover, Good, HSG C
4.333	80	>75% Grass cover, Good, HSG D
0.091	98	Paved parking, HSG C
0.736	98	Paved parking, HSG D
0.022	98	Roofs, HSG C
0.951	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
6.994	84	Weighted Average
5.194		74.26% Pervious Area
1.800		25.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0100	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
1.7	144	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2	1,042	0.0070	4.11	3.23	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
13.9	1,236	Total			

Summary for Subcatchment EX3: Direct to Wetland

Runoff = 2.37 cfs @ 12.23 hrs, Volume= 0.232 af, Depth= 1.30"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (ac)	CN	Description
1.136	74	>75% Grass cover, Good, HSG C
0.336	80	>75% Grass cover, Good, HSG D
0.198	98	Paved parking, HSG C
0.055	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.195	70	Woods, Good, HSG C
0.232	77	Woods, Good, HSG D
2.152	78	Weighted Average
1.899		88.24% Pervious Area
0.253		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0220	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
3.0	88	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0030	1.11		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	177	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	52	0.1040	1.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.7	431	Total			

Summary for Subcatchment EX4: Ballfield

[47] Hint: Peak is 280% of capacity of segment #4

Runoff = 4.64 cfs @ 12.35 hrs, Volume= 0.543 af, Depth= 1.23"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (ac)	CN	Description
2.873	74	>75% Grass cover, Good, HSG C
1.214	80	>75% Grass cover, Good, HSG D
0.465	98	Paved parking, HSG C
0.025	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.705	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
5.282	77	Weighted Average
4.792		90.72% Pervious Area
0.490		9.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0320	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
9.1	295	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	183	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, 12" cmp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
2.7	206	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	68	0.0400	9.83	7.72	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
23.9	1,003	Total			

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 16.661 ac, 21.64% Impervious, Inflow Depth = 1.54" for 2-yr event
Inflow = 20.98 cfs @ 12.20 hrs, Volume= 2.135 af
Primary = 20.98 cfs @ 12.20 hrs, Volume= 2.135 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 2.152 ac, 11.76% Impervious, Inflow Depth = 1.30" for 2-yr event
Inflow = 2.37 cfs @ 12.23 hrs, Volume= 0.232 af
Primary = 2.37 cfs @ 12.23 hrs, Volume= 0.232 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX1: East Track Runoff Area=4.385 ac 29.99% Impervious Runoff Depth=3.28"
Flow Length=753' Tc=13.2 min CN=83 Runoff=13.35 cfs 1.200 af

Subcatchment EX2: West Track Runoff Area=6.994 ac 25.74% Impervious Runoff Depth=3.38"
Flow Length=1,236' Tc=13.9 min CN=84 Runoff=21.48 cfs 1.970 af

Subcatchment EX3: Direct to Wetland Runoff Area=2.152 ac 11.76% Impervious Runoff Depth=2.81"
Flow Length=431' Tc=15.7 min CN=78 Runoff=5.27 cfs 0.505 af

Subcatchment EX4: Ballfield Runoff Area=5.282 ac 9.28% Impervious Runoff Depth=2.72"
Flow Length=1,003' Tc=23.9 min CN=77 Runoff=10.53 cfs 1.199 af

Link DP-1: Southeast Wetlands Inflow=43.00 cfs 4.369 af
Primary=43.00 cfs 4.369 af

Link DP-2: West Wetland Inflow=5.27 cfs 0.505 af
Primary=5.27 cfs 0.505 af

Total Runoff Area = 18.813 ac Runoff Volume = 4.873 af Average Runoff Depth = 3.11"
79.49% Pervious = 14.955 ac 20.51% Impervious = 3.858 ac

Summary for Subcatchment EX1: East Track

Runoff = 13.35 cfs @ 12.18 hrs, Volume= 1.200 af, Depth= 3.28"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (ac)	CN	Description
1.527	74	>75% Grass cover, Good, HSG C
1.543	80	>75% Grass cover, Good, HSG D
0.791	98	Paved parking, HSG C
0.524	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
4.385	83	Weighted Average
3.070		70.01% Pervious Area
1.315		29.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0120	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
4.9	173	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	530	0.0050	9.47	150.64	**Pipe Channel, 54" RCP** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
13.2	753	Total			

Summary for Subcatchment EX2: West Track

[47] Hint: Peak is 665% of capacity of segment #3

Runoff = 21.48 cfs @ 12.19 hrs, Volume= 1.970 af, Depth= 3.38"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (ac)	CN	Description
0.861	74	>75% Grass cover, Good, HSG C
4.333	80	>75% Grass cover, Good, HSG D
0.091	98	Paved parking, HSG C
0.736	98	Paved parking, HSG D
0.022	98	Roofs, HSG C
0.951	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
6.994	84	Weighted Average
5.194		74.26% Pervious Area
1.800		25.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0100	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
1.7	144	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2	1,042	0.0070	4.11	3.23	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
13.9	1,236	Total			

Summary for Subcatchment EX3: Direct to Wetland

Runoff = 5.27 cfs @ 12.22 hrs, Volume= 0.505 af, Depth= 2.81"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (ac)	CN	Description
1.136	74	>75% Grass cover, Good, HSG C
0.336	80	>75% Grass cover, Good, HSG D
0.198	98	Paved parking, HSG C
0.055	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.195	70	Woods, Good, HSG C
0.232	77	Woods, Good, HSG D
2.152	78	Weighted Average
1.899		88.24% Pervious Area
0.253		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0220	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
3.0	88	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0030	1.11		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	177	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	52	0.1040	1.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.7	431	Total			

Summary for Subcatchment EX4: Ballfield

[47] Hint: Peak is 635% of capacity of segment #4
[47] Hint: Peak is 136% of capacity of segment #6

Runoff = 10.53 cfs @ 12.34 hrs, Volume= 1.199 af, Depth= 2.72"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (ac)	CN	Description
2.873	74	>75% Grass cover, Good, HSG C
1.214	80	>75% Grass cover, Good, HSG D
0.465	98	Paved parking, HSG C
0.025	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.705	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
5.282	77	Weighted Average
4.792		90.72% Pervious Area
0.490		9.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0320	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
9.1	295	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	183	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, 12" cmp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
2.7	206	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	68	0.0400	9.83	7.72	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
23.9	1,003	Total			

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 16.661 ac, 21.64% Impervious, Inflow Depth = 3.15" for 10-yr event
Inflow = 43.00 cfs @ 12.20 hrs, Volume= 4.369 af
Primary = 43.00 cfs @ 12.20 hrs, Volume= 4.369 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 2.152 ac, 11.76% Impervious, Inflow Depth = 2.81" for 10-yr event
Inflow = 5.27 cfs @ 12.22 hrs, Volume= 0.505 af
Primary = 5.27 cfs @ 12.22 hrs, Volume= 0.505 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX1: East Track Runoff Area=4.385 ac 29.99% Impervious Runoff Depth=4.37"
Flow Length=753' Tc=13.2 min CN=83 Runoff=17.64 cfs 1.597 af

Subcatchment EX2: West Track Runoff Area=6.994 ac 25.74% Impervious Runoff Depth=4.48"
Flow Length=1,236' Tc=13.9 min CN=84 Runoff=28.22 cfs 2.610 af

Subcatchment EX3: Direct to Wetland Runoff Area=2.152 ac 11.76% Impervious Runoff Depth=3.85"
Flow Length=431' Tc=15.7 min CN=78 Runoff=7.20 cfs 0.690 af

Subcatchment EX4: Ballfield Runoff Area=5.282 ac 9.28% Impervious Runoff Depth=3.74"
Flow Length=1,003' Tc=23.9 min CN=77 Runoff=14.47 cfs 1.647 af

Link DP-1: Southeast Wetlands Inflow=57.24 cfs 5.854 af
Primary=57.24 cfs 5.854 af

Link DP-2: West Wetland Inflow=7.20 cfs 0.690 af
Primary=7.20 cfs 0.690 af

Total Runoff Area = 18.813 ac Runoff Volume = 6.544 af Average Runoff Depth = 4.17"
79.49% Pervious = 14.955 ac 20.51% Impervious = 3.858 ac

Summary for Subcatchment EX1: East Track

Runoff = 17.64 cfs @ 12.18 hrs, Volume= 1.597 af, Depth= 4.37"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (ac)	CN	Description
1.527	74	>75% Grass cover, Good, HSG C
1.543	80	>75% Grass cover, Good, HSG D
0.791	98	Paved parking, HSG C
0.524	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
4.385	83	Weighted Average
3.070		70.01% Pervious Area
1.315		29.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0120	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
4.9	173	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	530	0.0050	9.47	150.64	**Pipe Channel, 54" RCP** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
13.2	753	Total			

Summary for Subcatchment EX2: West Track

[47] Hint: Peak is 874% of capacity of segment #3

Runoff = 28.22 cfs @ 12.19 hrs, Volume= 2.610 af, Depth= 4.48"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (ac)	CN	Description
0.861	74	>75% Grass cover, Good, HSG C
4.333	80	>75% Grass cover, Good, HSG D
0.091	98	Paved parking, HSG C
0.736	98	Paved parking, HSG D
0.022	98	Roofs, HSG C
0.951	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
6.994	84	Weighted Average
5.194		74.26% Pervious Area
1.800		25.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0100	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
1.7	144	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2	1,042	0.0070	4.11	3.23	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
13.9	1,236	Total			

Summary for Subcatchment EX3: Direct to Wetland

Runoff = 7.20 cfs @ 12.21 hrs, Volume= 0.690 af, Depth= 3.85"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (ac)	CN	Description
1.136	74	>75% Grass cover, Good, HSG C
0.336	80	>75% Grass cover, Good, HSG D
0.198	98	Paved parking, HSG C
0.055	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.195	70	Woods, Good, HSG C
0.232	77	Woods, Good, HSG D
2.152	78	Weighted Average
1.899		88.24% Pervious Area
0.253		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0220	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
3.0	88	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0030	1.11		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	177	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	52	0.1040	1.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.7	431	Total			

Summary for Subcatchment EX4: Ballfield

[47] Hint: Peak is 873% of capacity of segment #4
[47] Hint: Peak is 187% of capacity of segment #6

Runoff = 14.47 cfs @ 12.33 hrs, Volume= 1.647 af, Depth= 3.74"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (ac)	CN	Description
2.873	74	>75% Grass cover, Good, HSG C
1.214	80	>75% Grass cover, Good, HSG D
0.465	98	Paved parking, HSG C
0.025	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.705	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
5.282	77	Weighted Average
4.792		90.72% Pervious Area
0.490		9.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0320	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
9.1	295	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	183	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, 12" cmp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
2.7	206	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	68	0.0400	9.83	7.72	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
23.9	1,003	Total			

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 16.661 ac, 21.64% Impervious, Inflow Depth = 4.22" for 25-yr event
Inflow = 57.24 cfs @ 12.20 hrs, Volume= 5.854 af
Primary = 57.24 cfs @ 12.20 hrs, Volume= 5.854 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 2.152 ac, 11.76% Impervious, Inflow Depth = 3.85" for 25-yr event
Inflow = 7.20 cfs @ 12.21 hrs, Volume= 0.690 af
Primary = 7.20 cfs @ 12.21 hrs, Volume= 0.690 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX1: East Track Runoff Area=4.385 ac 29.99% Impervious Runoff Depth=6.09"
Flow Length=753' Tc=13.2 min CN=83 Runoff=24.28 cfs 2.226 af

Subcatchment EX2: West Track Runoff Area=6.994 ac 25.74% Impervious Runoff Depth=6.21"
Flow Length=1,236' Tc=13.9 min CN=84 Runoff=38.62 cfs 3.620 af

Subcatchment EX3: Direct to Wetland Runoff Area=2.152 ac 11.76% Impervious Runoff Depth=5.50"
Flow Length=431' Tc=15.7 min CN=78 Runoff=10.23 cfs 0.987 af

Subcatchment EX4: Ballfield Runoff Area=5.282 ac 9.28% Impervious Runoff Depth=5.38"
Flow Length=1,003' Tc=23.9 min CN=77 Runoff=20.72 cfs 2.370 af

Link DP-1: Southeast Wetlands Inflow=79.43 cfs 8.216 af
Primary=79.43 cfs 8.216 af

Link DP-2: West Wetland Inflow=10.23 cfs 0.987 af
Primary=10.23 cfs 0.987 af

Total Runoff Area = 18.813 ac Runoff Volume = 9.203 af Average Runoff Depth = 5.87"
79.49% Pervious = 14.955 ac 20.51% Impervious = 3.858 ac

Summary for Subcatchment EX1: East Track

Runoff = 24.28 cfs @ 12.18 hrs, Volume= 2.226 af, Depth= 6.09"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (ac)	CN	Description
1.527	74	>75% Grass cover, Good, HSG C
1.543	80	>75% Grass cover, Good, HSG D
0.791	98	Paved parking, HSG C
0.524	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
4.385	83	Weighted Average
3.070		70.01% Pervious Area
1.315		29.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0120	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
4.9	173	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	530	0.0050	9.47	150.64	**Pipe Channel, 54" RCP** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
13.2	753	Total			

Summary for Subcatchment EX2: West Track

[47] Hint: Peak is 1196% of capacity of segment #3

Runoff = 38.62 cfs @ 12.19 hrs, Volume= 3.620 af, Depth= 6.21"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (ac)	CN	Description
0.861	74	>75% Grass cover, Good, HSG C
4.333	80	>75% Grass cover, Good, HSG D
0.091	98	Paved parking, HSG C
0.736	98	Paved parking, HSG D
0.022	98	Roofs, HSG C
0.951	98	Roofs, HSG D
0.000	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
6.994	84	Weighted Average
5.194		74.26% Pervious Area
1.800		25.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0100	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
1.7	144	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2	1,042	0.0070	4.11	3.23	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
13.9	1,236	Total			

Summary for Subcatchment EX3: Direct to Wetland

Runoff = 10.23 cfs @ 12.21 hrs, Volume= 0.987 af, Depth= 5.50"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (ac)	CN	Description
1.136	74	>75% Grass cover, Good, HSG C
0.336	80	>75% Grass cover, Good, HSG D
0.198	98	Paved parking, HSG C
0.055	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.195	70	Woods, Good, HSG C
0.232	77	Woods, Good, HSG D
2.152	78	Weighted Average
1.899		88.24% Pervious Area
0.253		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0220	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
3.0	88	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0030	1.11		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	177	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	52	0.1040	1.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.7	431	Total			

Summary for Subcatchment EX4: Ballfield

[47] Hint: Peak is 1250% of capacity of segment #4
[47] Hint: Peak is 268% of capacity of segment #6

Runoff = 20.72 cfs @ 12.32 hrs, Volume= 2.370 af, Depth= 5.38"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (ac)	CN	Description
2.873	74	>75% Grass cover, Good, HSG C
1.214	80	>75% Grass cover, Good, HSG D
0.465	98	Paved parking, HSG C
0.025	98	Paved parking, HSG D
0.000	98	Roofs, HSG C
0.000	98	Roofs, HSG D
0.705	70	Woods, Good, HSG C
0.000	77	Woods, Good, HSG D
5.282	77	Weighted Average
4.792		90.72% Pervious Area
0.490		9.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0320	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
9.1	295	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	183	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, 12" cmp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
2.7	206	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	68	0.0400	9.83	7.72	**Pipe Channel, 12" rcp** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
23.9	1,003	Total			

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 16.661 ac, 21.64% Impervious, Inflow Depth = 5.92" for 100-yr event
Inflow = 79.43 cfs @ 12.19 hrs, Volume= 8.216 af
Primary = 79.43 cfs @ 12.19 hrs, Volume= 8.216 af, Atten= 0%, Lag= 0.0 min

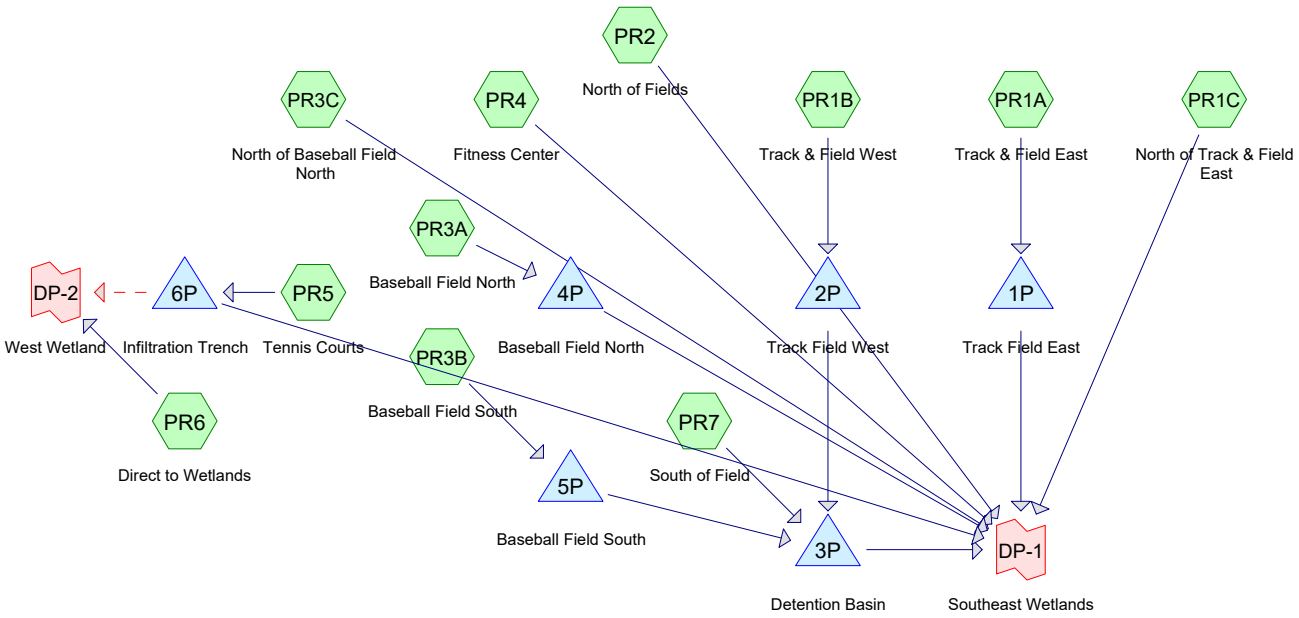
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 2.152 ac, 11.76% Impervious, Inflow Depth = 5.50" for 100-yr event
Inflow = 10.23 cfs @ 12.21 hrs, Volume= 0.987 af
Primary = 10.23 cfs @ 12.21 hrs, Volume= 0.987 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Proposed Conditions HydroCAD Analysis



Subcat Reach Pond Link

Routing Diagram for 25527-PR - Hyd Con Ponds
Prepared by Brennan Consulting, Printed 4/20/2026

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.23	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.12	2
3	25-yr	Type III 24-hr		Default	24.00	1	6.30	2
4	100-yr	Type III 24-hr		Default	24.00	1	8.12	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.885	74	>75% Grass cover, Good, HSG C (PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR4, PR5, PR6, PR7)
6.816	80	>75% Grass cover, Good, HSG D (PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR3C, PR4, PR5, PR6, PR7)
1.988	98	Paved parking, HSG C (PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR4, PR5, PR6, PR7)
1.892	98	Paved parking, HSG D (PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR3C, PR4, PR5, PR6, PR7)
0.229	98	Roofs, HSG C (PR2, PR4, PR7)
1.024	98	Roofs, HSG D (PR2, PR4)
0.766	70	Woods, Good, HSG C (PR5, PR6, PR7)
0.218	77	Woods, Good, HSG D (PR5, PR6)
18.818	**83**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
8.868	HSG C	PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR4, PR5, PR6, PR7
9.950	HSG D	PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR3C, PR4, PR5, PR6, PR7
0.000	Other	
18.818		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	5.885	6.816	0.000	12.701	>75% Grass cover, Good	PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR3C, PR4, PR5, PR6, PR7
0.000	0.000	1.988	1.892	0.000	3.880	Paved parking	PR1A, PR1B, PR1C, PR2, PR3A, PR3B, PR3C, PR4, PR5, PR6, PR7
0.000	0.000	0.229	1.024	0.000	1.253	Roofs	PR2, PR4, PR7
0.000	0.000	0.766	0.218	0.000	0.984	Woods, Good	PR5, PR6, PR7
0.000	**0.000**	**8.868**	**9.950**	**0.000**	**18.818**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	PR2	0.00	0.00	900.0	0.0060	0.012	0.0	54.0	0.0	
2	PR7	0.00	0.00	201.0	0.0080	0.025	0.0	12.0	0.0	
3	1P	119.32	118.50	75.0	0.0109	0.012	0.0	18.0	0.0	
4	1P	122.00	119.50	488.0	0.0051	0.010	0.0	10.0	0.0	
5	2P	119.32	118.50	75.0	0.0109	0.012	0.0	18.0	0.0	
6	2P	122.00	119.52	488.0	0.0051	0.010	0.0	10.0	0.0	
7	3P	116.00	115.48	15.0	0.0347	0.012	0.0	12.0	0.0	
8	4P	121.40	120.40	50.0	0.0200	0.010	0.0	18.0	0.0	
9	4P	122.00	121.50	100.0	0.0050	0.010	0.0	10.0	0.0	
10	5P	121.40	120.40	50.0	0.0200	0.010	0.0	18.0	0.0	
11	5P	122.00	121.50	100.0	0.0050	0.010	0.0	10.0	0.0	
12	6P	121.00	118.00	150.0	0.0200	0.010	0.0	6.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR1A: Track & Field East Runoff Area=101,344 sf 30.17% Impervious Runoff Depth=1.78"
Tc=6.0 min CN=85 Runoff=4.87 cfs 0.346 af

Subcatchment PR1B: Track & Field West Runoff Area=92,527 sf 39.83% Impervious Runoff Depth=1.94"
Tc=6.0 min CN=87 Runoff=4.83 cfs 0.344 af

Subcatchment PR1C: North of Track & Runoff Area=52,363 sf 32.47% Impervious Runoff Depth=1.71"
Tc=6.0 min CN=84 Runoff=2.41 cfs 0.171 af

Subcatchment PR2: North of Fields Runoff Area=114,758 sf 25.76% Impervious Runoff Depth=1.49"
Flow Length=1,155' Tc=12.9 min CN=81 Runoff=3.66 cfs 0.328 af

Subcatchment PR3A: Baseball Field North Runoff Area=72,480 sf 5.79% Impervious Runoff Depth=1.43"
Tc=6.0 min CN=80 Runoff=2.75 cfs 0.198 af

Subcatchment PR3B: Baseball Field South Runoff Area=76,054 sf 9.42% Impervious Runoff Depth=1.30"
Tc=6.0 min CN=78 Runoff=2.60 cfs 0.188 af

Subcatchment PR3C: North of Baseball Runoff Area=34,336 sf 29.82% Impervious Runoff Depth=1.78"
Tc=6.0 min CN=85 Runoff=1.65 cfs 0.117 af

Subcatchment PR4: Fitness Center Runoff Area=55,755 sf 81.17% Impervious Runoff Depth=2.67"
Tc=6.0 min CN=95 Runoff=3.79 cfs 0.285 af

Subcatchment PR5: Tennis Courts Runoff Area=46,171 sf 59.82% Impervious Runoff Depth=2.11"
Tc=6.0 min CN=89 Runoff=2.60 cfs 0.186 af

Subcatchment PR6: Direct to Wetlands Runoff Area=31,863 sf 20.88% Impervious Runoff Depth=1.49"
Flow Length=398' Tc=15.4 min CN=81 Runoff=0.95 cfs 0.091 af

Subcatchment PR7: South of Field Runoff Area=142,056 sf 5.95% Impervious Runoff Depth=1.11"
Flow Length=474' Tc=13.8 min CN=75 Runoff=3.17 cfs 0.303 af

Pond 1P: Track Field East Peak Elev=123.65' Storage=5,518 cf Inflow=4.87 cfs 0.346 af
Discarded=0.39 cfs 0.294 af Primary=0.42 cfs 0.051 af Outflow=0.81 cfs 0.346 af

Pond 2P: Track Field West Peak Elev=123.65' Storage=5,596 cf Inflow=4.83 cfs 0.344 af
Discarded=0.39 cfs 0.299 af Primary=0.33 cfs 0.045 af Outflow=0.72 cfs 0.344 af

Pond 3P: Detention Basin Peak Elev=116.58' Storage=6,745 cf Inflow=3.25 cfs 0.347 af
Outflow=0.54 cfs 0.345 af

Pond 4P: Baseball Field North Peak Elev=123.50' Storage=2,700 cf Inflow=2.75 cfs 0.198 af
Discarded=0.44 cfs 0.198 af Primary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.198 af

Pond 5P: Baseball Field South Peak Elev=123.49' Storage=2,497 cf Inflow=2.60 cfs 0.188 af
Discarded=0.43 cfs 0.188 af Primary=0.00 cfs 0.000 af Outflow=0.43 cfs 0.188 af

Pond 6P: Infiltration Trench Peak Elev=121.63' Storage=3,556 cf Inflow=2.60 cfs 0.186 af
Discarded=0.02 cfs 0.091 af Primary=0.73 cfs 0.095 af Secondary=0.00 cfs 0.000 af Outflow=0.75 cfs 0.186 af

Link DP-1: Southeast Wetlands Inflow=10.67 cfs 1.392 af
Primary=10.67 cfs 1.392 af

Link DP-2: West Wetland Inflow=0.95 cfs 0.091 af
Primary=0.95 cfs 0.091 af

Total Runoff Area = 18.818 ac Runoff Volume = 2.557 af Average Runoff Depth = 1.63"
72.73% Pervious = 13.685 ac 27.27% Impervious = 5.133 ac

Summary for Subcatchment PR1A: Track & Field East

Runoff = 4.87 cfs @ 12.09 hrs, Volume= 0.346 af, Depth= 1.78"
Routed to Pond 1P : Track Field East

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
4,418	74	>75% Grass cover, Good, HSG C
66,353	80	>75% Grass cover, Good, HSG D
2,011	98	Paved parking, HSG C
28,562	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
101,344	85	Weighted Average
70,771		69.83% Pervious Area
30,573		30.17% Impervious Area

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

Summary for Subcatchment PR1B: Track & Field West

Runoff = 4.83 cfs @ 12.09 hrs, Volume= 0.344 af, Depth= 1.94"
Routed to Pond 2P : Track Field West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
2,296	74	>75% Grass cover, Good, HSG C
53,380	80	>75% Grass cover, Good, HSG D
16,812	98	Paved parking, HSG C
20,039	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
92,527	87	Weighted Average
55,676		60.17% Pervious Area
36,851		39.83% Impervious Area

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

Summary for Subcatchment PR1C: North of Track & Field East

Runoff = 2.41 cfs @ 12.09 hrs, Volume= 0.171 af, Depth= 1.71"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
17,445	74	>75% Grass cover, Good, HSG C
17,914	80	>75% Grass cover, Good, HSG D
7,735	98	Paved parking, HSG C
9,269	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
52,363	84	Weighted Average
35,359		67.53% Pervious Area
17,004		32.47% Impervious Area

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

Summary for Subcatchment PR2: North of Fields

Runoff = 3.66 cfs @ 12.18 hrs, Volume= 0.328 af, Depth= 1.49"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
60,546	74	>75% Grass cover, Good, HSG C
24,646	80	>75% Grass cover, Good, HSG D
17,396	98	Paved parking, HSG C
1,061	98	Paved parking, HSG D
7,942	98	Roofs, HSG C
3,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
114,758	81	Weighted Average
85,192		74.24% Pervious Area
29,566		25.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
2.7	205	0.0320	1.25		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	900	0.0060	10.38	165.02	**Pipe Channel,** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
12.9	1,155	Total			

Summary for Subcatchment PR3A: Baseball Field North

Runoff = 2.75 cfs @ 12.09 hrs, Volume= 0.198 af, Depth= 1.43"
Routed to Pond 4P : Baseball Field North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
10,897	74	>75% Grass cover, Good, HSG C
57,390	80	>75% Grass cover, Good, HSG D
1,799	98	Paved parking, HSG C
2,394	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
72,480	80	Weighted Average
68,287		94.21% Pervious Area
4,193		5.79% Impervious Area

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

Summary for Subcatchment PR3B: Baseball Field South

Runoff = 2.60 cfs @ 12.09 hrs, Volume= 0.188 af, Depth= 1.30"
Routed to Pond 5P : Baseball Field South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
50,918	74	>75% Grass cover, Good, HSG C
17,970	80	>75% Grass cover, Good, HSG D
6,012	98	Paved parking, HSG C
1,154	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
76,054	78	Weighted Average
68,888		90.58% Pervious Area
7,166		9.42% Impervious Area

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

Summary for Subcatchment PR3C: North of Baseball Field North

Runoff = 1.65 cfs @ 12.09 hrs, Volume= 0.117 af, Depth= 1.78"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
24,097	80	>75% Grass cover, Good, HSG D
0	98	Paved parking, HSG C
10,239	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
34,336	85	Weighted Average
24,097		70.18% Pervious Area
10,239		29.82% Impervious Area

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

Summary for Subcatchment PR4: Fitness Center

Runoff = 3.79 cfs @ 12.08 hrs, Volume= 0.285 af, Depth= 2.67"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
387	74	>75% Grass cover, Good, HSG C
10,114	80	>75% Grass cover, Good, HSG D
246	98	Paved parking, HSG C
2,643	98	Paved parking, HSG D
946	98	Roofs, HSG C
41,419	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
55,755	95	Weighted Average
10,501		18.83% Pervious Area
45,254		81.17% Impervious Area

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

Summary for Subcatchment PR5: Tennis Courts

Runoff = 2.60 cfs @ 12.09 hrs, Volume= 0.186 af, Depth= 2.11"
Routed to Pond 6P : Infiltration Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
9,849	74	>75% Grass cover, Good, HSG C
4,487	80	>75% Grass cover, Good, HSG D
23,259	98	Paved parking, HSG C
4,361	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,938	70	Woods, Good, HSG C
277	77	Woods, Good, HSG D
46,171	89	Weighted Average
18,551		40.18% Pervious Area
27,620		59.82% Impervious Area

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

Summary for Subcatchment PR6: Direct to Wetlands

Runoff = 0.95 cfs @ 12.22 hrs, Volume= 0.091 af, Depth= 1.49"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
4,521	74	>75% Grass cover, Good, HSG C
7,576	80	>75% Grass cover, Good, HSG D
4,777	98	Paved parking, HSG C
1,877	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,895	70	Woods, Good, HSG C
9,217	77	Woods, Good, HSG D
31,863	81	Weighted Average
25,209		79.12% Pervious Area
6,654		20.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0780	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.75"
0.1	12	0.3330	2.89		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	105	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	176	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	55	0.1020	1.60		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	398	Total			

Summary for Subcatchment PR7: South of Field

[47] Hint: Peak is 191% of capacity of segment #4

Runoff = 3.17 cfs @ 12.20 hrs, Volume= 0.303 af, Depth= 1.11"
Routed to Pond 3P : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
95,083	74	>75% Grass cover, Good, HSG C
12,977	80	>75% Grass cover, Good, HSG D
6,534	98	Paved parking, HSG C
820	98	Paved parking, HSG D
1,100	98	Roofs, HSG C
0	98	Roofs, HSG D
25,542	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
142,056	75	Weighted Average
133,602		94.05% Pervious Area
8,454		5.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
0.3	23	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.8	200	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, CMP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
13.8	474	Total			

Summary for Pond 1P: Track Field East

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.15' above defined flood level

Inflow Area = 2.327 ac, 30.17% Impervious, Inflow Depth = 1.78" for 2-yr event
Inflow = 4.87 cfs @ 12.09 hrs, Volume= 0.346 af
Outflow = 0.81 cfs @ 12.58 hrs, Volume= 0.346 af, Atten= 83%, Lag= 29.4 min
Discarded = 0.39 cfs @ 12.58 hrs, Volume= 0.294 af
Primary = 0.42 cfs @ 12.58 hrs, Volume= 0.051 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.65' @ 12.58 hrs Surf.Area= 54,991 sf Storage= 5,518 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 93.8 min calculated for 0.346 af (100% of inflow)
Center-of-Mass det. time= 93.8 min (919.5 - 825.7)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	124.00'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.50' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir X 2.00** 0 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.39 cfs @ 12.58 hrs HW=123.65' (Free Discharge)
└**2=Exfiltration** (Controls 0.39 cfs)

Primary OutFlow Max=0.42 cfs @ 12.58 hrs HW=123.65' (Free Discharge)
└**1=Culvert** (Passes 0.42 cfs of 16.10 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.42 cfs @ 1.05 fps)
└**3=Culvert** (Passes 0.42 cfs of 0.77 cfs potential flow)

Stage-Area-Storage for Pond 1P: Track Field East

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,218
123.92	54,991	11,438
123.93	54,991	11,658
123.94	54,991	11,878
123.95	54,991	12,098
123.96	54,991	12,318
123.97	54,991	12,538
123.98	54,991	12,758
123.99	54,991	12,978
124.00	54,991	13,198
124.01	54,991	13,429
124.02	54,991	13,661
124.03	54,991	13,892
124.04	54,991	14,124
124.05	54,991	14,355
124.06	54,991	14,587
124.07	54,991	14,818
124.08	54,991	15,050
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 2P: Track Field West

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.15' above defined flood level

Inflow Area = 2.124 ac, 39.83% Impervious, Inflow Depth = 1.94" for 2-yr event
Inflow = 4.83 cfs @ 12.09 hrs, Volume= 0.344 af
Outflow = 0.72 cfs @ 12.60 hrs, Volume= 0.344 af, Atten= 85%, Lag= 31.0 min
Discarded = 0.39 cfs @ 12.60 hrs, Volume= 0.299 af
Primary = 0.33 cfs @ 12.60 hrs, Volume= 0.045 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 123.65' @ 12.60 hrs Surf.Area= 54,991 sf Storage= 5,596 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 97.3 min calculated for 0.344 af (100% of inflow)
Center-of-Mass det. time= 97.3 min (915.8 - 818.5)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 3.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.52' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**3.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 4.4' Crest Height

Discarded OutFlow Max=0.39 cfs @ 12.60 hrs HW=123.65' (Free Discharge)
└**2=Exfiltration** (Controls 0.39 cfs)

Primary OutFlow Max=0.33 cfs @ 12.60 hrs HW=123.65' (Free Discharge)
└**1=Culvert** (Passes 0.33 cfs of 16.11 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.33 cfs @ 1.06 fps)
└**3=Culvert** (Passes 0.33 cfs of 1.17 cfs potential flow)

Stage-Area-Storage for Pond 2P: Track Field West

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,230
123.92	54,991	11,461
123.93	54,991	11,693
123.94	54,991	11,924
123.95	54,991	12,156
123.96	54,991	12,387
123.97	54,991	12,619
123.98	54,991	12,850
123.99	54,991	13,074
124.00	54,991	13,294
124.01	54,991	13,514
124.02	54,991	13,734
124.03	54,991	13,954
124.04	54,991	14,174
124.05	54,991	14,394
124.06	54,991	14,614
124.07	54,991	14,834
124.08	54,991	15,054
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 3P: Detention Basin

Inflow Area = 7.131 ac, 16.89% Impervious, Inflow Depth = 0.58" for 2-yr event
Inflow = 3.25 cfs @ 12.21 hrs, Volume= 0.347 af
Outflow = 0.54 cfs @ 13.78 hrs, Volume= 0.345 af, Atten= 83%, Lag= 94.4 min
Primary = 0.54 cfs @ 13.78 hrs, Volume= 0.345 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 116.58' @ 13.78 hrs Surf.Area= 12,082 sf Storage= 6,745 cf

Plug-Flow detention time= 276.0 min calculated for 0.344 af (99% of inflow)
Center-of-Mass det. time= 271.5 min (1,128.3 - 856.8)

Volume	Invert	Avail.Storage	Storage Description
#1	116.00'	70,860 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	11,268	467.0	0	0	11,268
117.00	12,694	487.0	11,974	11,974	12,860
118.00	15,214	532.0	13,935	25,909	16,544
119.00	17,446	574.0	16,317	42,226	20,282
120.00	19,925	601.0	18,672	60,898	22,874
120.50	19,925	601.0	9,963	70,860	23,174

Device	Routing	Invert	Outlet Devices
#1	Device 2	116.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	116.00'	**12.0" Round Culvert** L= 15.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 116.00' / 115.48' S= 0.0347 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Device 2	119.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.54 cfs @ 13.78 hrs HW=116.58' (Free Discharge)
└**2=Culvert** (Passes 0.54 cfs of 1.22 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.54 cfs @ 2.76 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 3P: Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
116.00	11,268	0
116.05	11,337	565
116.10	11,407	1,134
116.15	11,476	1,706
116.20	11,546	2,281
116.25	11,617	2,860
116.30	11,687	3,443
116.35	11,757	4,029
116.40	11,828	4,619
116.45	11,899	5,212
116.50	11,970	5,809
116.55	12,042	6,409
116.60	12,113	7,013
116.65	12,185	7,620
116.70	12,257	8,231
116.75	12,330	8,846
116.80	12,402	9,464
116.85	12,475	10,086
116.90	12,548	10,712
116.95	12,621	11,341
117.00	12,694	11,974
117.05	12,815	12,612
117.10	12,936	13,255
117.15	13,057	13,905
117.20	13,180	14,561
117.25	13,303	15,223
117.30	13,426	15,891
117.35	13,550	16,566
117.40	13,675	17,246
117.45	13,800	17,933
117.50	13,925	18,626
117.55	14,052	19,326
117.60	14,179	20,032
117.65	14,306	20,744
117.70	14,434	21,462
117.75	14,563	22,187
117.80	14,692	22,918
117.85	14,821	23,656
117.90	14,952	24,401
117.95	15,083	25,152
118.00	15,214	25,909
118.05	15,322	26,672
118.10	15,430	27,441
118.15	15,539	28,215
118.20	15,648	28,995
118.25	15,758	29,780
118.30	15,868	30,571
118.35	15,978	31,367
118.40	16,088	32,169
118.45	16,200	32,976
118.50	16,311	33,789
118.55	16,423	34,607
118.60	16,535	35,431
118.65	16,647	36,260
118.70	16,760	37,096
118.75	16,874	37,936
118.80	16,987	38,783
118.85	17,101	39,635
118.90	17,216	40,493
118.95	17,331	41,357
119.00	17,446	42,226
119.05	17,566	43,101
119.10	17,686	43,983
119.15	17,807	44,870
119.20	17,929	45,764
119.25	18,050	46,663
119.30	18,172	47,569
119.35	18,295	48,480
119.40	18,418	49,398
119.45	18,541	50,322
119.50	18,665	51,252
119.55	18,789	52,189
119.60	18,914	53,131
119.65	19,039	54,080
119.70	19,164	55,035
119.75	19,290	55,996
119.80	19,416	56,964
119.85	19,543	57,938
119.90	19,670	58,918
119.95	19,797	59,905
120.00	**19,925**	60,898
120.05	19,925	61,894
120.10	19,925	62,890
120.15	19,925	63,887
120.20	19,925	64,883
120.25	19,925	65,879
120.30	19,925	66,875
120.35	19,925	67,872
120.40	19,925	68,868
120.45	19,925	69,864
120.50	19,925	**70,860**

Summary for Pond 4P: Baseball Field North

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.00' above defined flood level

Inflow Area = 1.664 ac, 5.79% Impervious, Inflow Depth = 1.43" for 2-yr event
Inflow = 2.75 cfs @ 12.09 hrs, Volume= 0.198 af
Outflow = 0.44 cfs @ 12.62 hrs, Volume= 0.198 af, Atten= 84%, Lag= 31.9 min
Discarded = 0.44 cfs @ 12.62 hrs, Volume= 0.198 af
Primary = 0.00 cfs @ 12.62 hrs, Volume= 0.000 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.50' @ 12.62 hrs Surf.Area= 66,230 sf Storage= 2,700 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 48.7 min calculated for 0.198 af (100% of inflow)
Center-of-Mass det. time= 48.7 min (891.0 - 842.3)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.44 cfs @ 12.62 hrs HW=123.50' (Free Discharge)
└**2=Exfiltration** (Controls 0.44 cfs)

Primary OutFlow Max=0.00 cfs @ 12.62 hrs HW=123.50' (Free Discharge)
└**1=Culvert** (Passes 0.00 cfs of 9.89 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.14 fps)
└**3=Culvert** (Passes 0.00 cfs of 0.19 cfs potential flow)

Stage-Area-Storage for Pond 4P: Baseball Field North

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 5P: Baseball Field South

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 1.99' above defined flood level

Inflow Area = 1.746 ac, 9.42% Impervious, Inflow Depth = 1.30" for 2-yr event
Inflow = 2.60 cfs @ 12.09 hrs, Volume= 0.188 af
Outflow = 0.43 cfs @ 12.62 hrs, Volume= 0.188 af, Atten= 83%, Lag= 31.6 min
Discarded = 0.43 cfs @ 12.62 hrs, Volume= 0.188 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.49' @ 12.62 hrs Surf.Area= 66,230 sf Storage= 2,497 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 45.4 min calculated for 0.188 af (100% of inflow)
Center-of-Mass det. time= 45.4 min (894.1 - 848.7)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.00'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.43 cfs @ 12.62 hrs HW=123.49' (Free Discharge)
└**2=Exfiltration** (Controls 0.43 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.40' (Free Discharge)
└**1=Culvert** (Passes 0.00 cfs of 9.51 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir**(Controls 0.00 cfs)
└**3=Culvert** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 5P: Baseball Field South

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 6P: Infiltration Trench

Inflow Area = 1.060 ac, 59.82% Impervious, Inflow Depth = 2.11" for 2-yr event
Inflow = 2.60 cfs @ 12.09 hrs, Volume= 0.186 af
Outflow = 0.75 cfs @ 12.43 hrs, Volume= 0.186 af, Atten= 71%, Lag= 20.9 min
Discarded = 0.02 cfs @ 8.88 hrs, Volume= 0.091 af
Primary = 0.73 cfs @ 12.43 hrs, Volume= 0.095 af
Routed to Link DP-1 : Southeast Wetlands
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link DP-2 : West Wetland

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.63' @ 12.43 hrs Surf.Area= 3,375 sf Storage= 3,556 cf

Plug-Flow detention time= 635.8 min calculated for 0.186 af (100% of inflow)
Center-of-Mass det. time= 636.0 min (1,446.7 - 810.7)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	4,050 cf	**5.00'W x 135.00'L x 3.00'H Prismatoid**x 5 10,125 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Secondary	121.80'	**50.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	119.00'	**0.270 in/hr Exfiltration over Surface area**
#3	Primary	121.00'	**6.0" Round 6" Perf Pipe** L= 150.0' Ke= 0.200 Inlet / Outlet Invert= 121.00' / 118.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 8.88 hrs HW=119.03' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.73 cfs @ 12.43 hrs HW=121.63' (Free Discharge)
↑**3=6" Perf Pipe** (Inlet Controls 0.73 cfs @ 3.73 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=119.00' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 6P: Infiltration Trench

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
119.00	**3,375**	0
119.05	3,375	67
119.10	3,375	135
119.15	3,375	203
119.20	3,375	270
119.25	3,375	338
119.30	3,375	405
119.35	3,375	472
119.40	3,375	540
119.45	3,375	608
119.50	3,375	675
119.55	3,375	742
119.60	3,375	810
119.65	3,375	878
119.70	3,375	945
119.75	3,375	1,013
119.80	3,375	1,080
119.85	3,375	1,147
119.90	3,375	1,215
119.95	3,375	1,283
120.00	3,375	1,350
120.05	3,375	1,417
120.10	3,375	1,485
120.15	3,375	1,553
120.20	3,375	1,620
120.25	3,375	1,688
120.30	3,375	1,755
120.35	3,375	1,822
120.40	3,375	1,890
120.45	3,375	1,958
120.50	3,375	2,025
120.55	3,375	2,092
120.60	3,375	2,160
120.65	3,375	2,228
120.70	3,375	2,295
120.75	3,375	2,363
120.80	3,375	2,430
120.85	3,375	2,497
120.90	3,375	2,565
120.95	3,375	2,633
121.00	3,375	2,700
121.05	3,375	2,767
121.10	3,375	2,835
121.15	3,375	2,903
121.20	3,375	2,970
121.25	3,375	3,038
121.30	3,375	3,105
121.35	3,375	3,172
121.40	3,375	3,240
121.45	3,375	3,308
121.50	3,375	3,375
121.55	3,375	3,442
121.60	3,375	3,510
121.65	3,375	3,578
121.70	3,375	3,645
121.75	3,375	3,713
121.80	3,375	3,780
121.85	3,375	3,847
121.90	3,375	3,915
121.95	3,375	3,983
122.00	3,375	**4,050**

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 18.086 ac, 27.53% Impervious, Inflow Depth > 0.92" for 2-yr event
Inflow = 10.67 cfs @ 12.10 hrs, Volume= 1.392 af
Primary = 10.67 cfs @ 12.10 hrs, Volume= 1.392 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 0.731 ac, 20.88% Impervious, Inflow Depth = 1.49" for 2-yr event
Inflow = 0.95 cfs @ 12.22 hrs, Volume= 0.091 af
Primary = 0.95 cfs @ 12.22 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR1A: Track & Field East Runoff Area=101,344 sf 30.17% Impervious Runoff Depth=3.48"
Tc=6.0 min CN=85 Runoff=9.38 cfs 0.675 af

SubcatchmentPR1B: Track & Field West Runoff Area=92,527 sf 39.83% Impervious Runoff Depth=3.68"
Tc=6.0 min CN=87 Runoff=8.99 cfs 0.651 af

SubcatchmentPR1C: North of Track & Runoff Area=52,363 sf 32.47% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=84 Runoff=4.73 cfs 0.339 af

SubcatchmentPR2: North of Fields Runoff Area=114,758 sf 25.76% Impervious Runoff Depth=3.09"
Flow Length=1,155' Tc=12.9 min CN=81 Runoff=7.65 cfs 0.679 af

SubcatchmentPR3A: Baseball Field North Runoff Area=72,480 sf 5.79% Impervious Runoff Depth=3.00"
Tc=6.0 min CN=80 Runoff=5.85 cfs 0.416 af

SubcatchmentPR3B: Baseball Field South Runoff Area=76,054 sf 9.42% Impervious Runoff Depth=2.81"
Tc=6.0 min CN=78 Runoff=5.76 cfs 0.409 af

SubcatchmentPR3C: North of Baseball Runoff Area=34,336 sf 29.82% Impervious Runoff Depth=3.48"
Tc=6.0 min CN=85 Runoff=3.18 cfs 0.229 af

SubcatchmentPR4: Fitness Center Runoff Area=55,755 sf 81.17% Impervious Runoff Depth=4.54"
Tc=6.0 min CN=95 Runoff=6.24 cfs 0.484 af

SubcatchmentPR5: Tennis Courts Runoff Area=46,171 sf 59.82% Impervious Runoff Depth=3.89"
Tc=6.0 min CN=89 Runoff=4.68 cfs 0.343 af

SubcatchmentPR6: Direct to Wetlands Runoff Area=31,863 sf 20.88% Impervious Runoff Depth=3.09"
Flow Length=398' Tc=15.4 min CN=81 Runoff=1.98 cfs 0.188 af

SubcatchmentPR7: South of Field Runoff Area=142,056 sf 5.95% Impervious Runoff Depth=2.55"
Flow Length=474' Tc=13.8 min CN=75 Runoff=7.59 cfs 0.692 af

Pond 1P: Track Field East Peak Elev=123.89' Storage=10,884 cf Inflow=9.38 cfs 0.675 af
Discarded=0.43 cfs 0.411 af Primary=1.42 cfs 0.264 af Outflow=1.85 cfs 0.675 af

Pond 2P: Track Field West Peak Elev=123.87' Storage=10,241 cf Inflow=8.99 cfs 0.651 af
Discarded=0.42 cfs 0.413 af Primary=1.75 cfs 0.239 af Outflow=2.18 cfs 0.651 af

Pond 3P: Detention Basin Peak Elev=117.83' Storage=23,293 cf Inflow=8.96 cfs 0.998 af
Outflow=1.19 cfs 0.994 af

Pond 4P: Baseball Field North Peak Elev=123.65' Storage=6,706 cf Inflow=5.85 cfs 0.416 af
Discarded=0.47 cfs 0.348 af Primary=0.40 cfs 0.068 af Outflow=0.86 cfs 0.416 af

Pond 5P: Baseball Field South Peak Elev=123.65' Storage=6,602 cf Inflow=5.76 cfs 0.409 af
Discarded=0.46 cfs 0.343 af Primary=0.38 cfs 0.067 af Outflow=0.84 cfs 0.409 af

Pond 6P: Infiltration Trench Peak Elev=121.88' Storage=3,888 cf Inflow=4.68 cfs 0.343 af
Discarded=0.02 cfs 0.095 af Primary=0.94 cfs 0.181 af Secondary=3.71 cfs 0.067 af Outflow=4.67 cfs 0.343 af

Link DP-1: Southeast Wetlands Inflow=22.50 cfs 3.237 af
Primary=22.50 cfs 3.237 af

Link DP-2: West Wetland Inflow=5.13 cfs 0.255 af
Primary=5.13 cfs 0.255 af

Total Runoff Area = 18.818 ac Runoff Volume = 5.105 af Average Runoff Depth = 3.26"
72.73% Pervious = 13.685 ac 27.27% Impervious = 5.133 ac

Summary for Subcatchment PR1A: Track & Field East

Runoff = 9.38 cfs @ 12.09 hrs, Volume= 0.675 af, Depth= 3.48"
Routed to Pond 1P : Track Field East

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
4,418	74	>75% Grass cover, Good, HSG C
66,353	80	>75% Grass cover, Good, HSG D
2,011	98	Paved parking, HSG C
28,562	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
101,344	85	Weighted Average
70,771		69.83% Pervious Area
30,573		30.17% Impervious Area

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

Summary for Subcatchment PR1B: Track & Field West

Runoff = 8.99 cfs @ 12.09 hrs, Volume= 0.651 af, Depth= 3.68"
Routed to Pond 2P : Track Field West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
2,296	74	>75% Grass cover, Good, HSG C
53,380	80	>75% Grass cover, Good, HSG D
16,812	98	Paved parking, HSG C
20,039	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
92,527	87	Weighted Average
55,676		60.17% Pervious Area
36,851		39.83% Impervious Area

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

Summary for Subcatchment PR1C: North of Track & Field East

Runoff = 4.73 cfs @ 12.09 hrs, Volume= 0.339 af, Depth= 3.38"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
17,445	74	>75% Grass cover, Good, HSG C
17,914	80	>75% Grass cover, Good, HSG D
7,735	98	Paved parking, HSG C
9,269	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
52,363	84	Weighted Average
35,359		67.53% Pervious Area
17,004		32.47% Impervious Area

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

Summary for Subcatchment PR2: North of Fields

Runoff = 7.65 cfs @ 12.17 hrs, Volume= 0.679 af, Depth= 3.09"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
60,546	74	>75% Grass cover, Good, HSG C
24,646	80	>75% Grass cover, Good, HSG D
17,396	98	Paved parking, HSG C
1,061	98	Paved parking, HSG D
7,942	98	Roofs, HSG C
3,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
114,758	81	Weighted Average
85,192		74.24% Pervious Area
29,566		25.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
2.7	205	0.0320	1.25		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	900	0.0060	10.38	165.02	**Pipe Channel,** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
12.9	1,155	Total			

Summary for Subcatchment PR3A: Baseball Field North

Runoff = 5.85 cfs @ 12.09 hrs, Volume= 0.416 af, Depth= 3.00"
Routed to Pond 4P : Baseball Field North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
10,897	74	>75% Grass cover, Good, HSG C
57,390	80	>75% Grass cover, Good, HSG D
1,799	98	Paved parking, HSG C
2,394	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
72,480	80	Weighted Average
68,287		94.21% Pervious Area
4,193		5.79% Impervious Area

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

Summary for Subcatchment PR3B: Baseball Field South

Runoff = 5.76 cfs @ 12.09 hrs, Volume= 0.409 af, Depth= 2.81"
Routed to Pond 5P : Baseball Field South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
50,918	74	>75% Grass cover, Good, HSG C
17,970	80	>75% Grass cover, Good, HSG D
6,012	98	Paved parking, HSG C
1,154	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
76,054	78	Weighted Average
68,888		90.58% Pervious Area
7,166		9.42% Impervious Area

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

Summary for Subcatchment PR3C: North of Baseball Field North

Runoff = 3.18 cfs @ 12.09 hrs, Volume= 0.229 af, Depth= 3.48"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
24,097	80	>75% Grass cover, Good, HSG D
0	98	Paved parking, HSG C
10,239	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
34,336	85	Weighted Average
24,097		70.18% Pervious Area
10,239		29.82% Impervious Area

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

Summary for Subcatchment PR4: Fitness Center

Runoff = 6.24 cfs @ 12.08 hrs, Volume= 0.484 af, Depth= 4.54"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
387	74	>75% Grass cover, Good, HSG C
10,114	80	>75% Grass cover, Good, HSG D
246	98	Paved parking, HSG C
2,643	98	Paved parking, HSG D
946	98	Roofs, HSG C
41,419	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
55,755	95	Weighted Average
10,501		18.83% Pervious Area
45,254		81.17% Impervious Area

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

Summary for Subcatchment PR5: Tennis Courts

Runoff = 4.68 cfs @ 12.09 hrs, Volume= 0.343 af, Depth= 3.89"
Routed to Pond 6P : Infiltration Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
9,849	74	>75% Grass cover, Good, HSG C
4,487	80	>75% Grass cover, Good, HSG D
23,259	98	Paved parking, HSG C
4,361	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,938	70	Woods, Good, HSG C
277	77	Woods, Good, HSG D
46,171	89	Weighted Average
18,551		40.18% Pervious Area
27,620		59.82% Impervious Area

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

Summary for Subcatchment PR6: Direct to Wetlands

Runoff = 1.98 cfs @ 12.21 hrs, Volume= 0.188 af, Depth= 3.09"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
4,521	74	>75% Grass cover, Good, HSG C
7,576	80	>75% Grass cover, Good, HSG D
4,777	98	Paved parking, HSG C
1,877	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,895	70	Woods, Good, HSG C
9,217	77	Woods, Good, HSG D
31,863	81	Weighted Average
25,209		79.12% Pervious Area
6,654		20.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0780	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.75"
0.1	12	0.3330	2.89		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	105	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	176	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	55	0.1020	1.60		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	398	Total			

Summary for Subcatchment PR7: South of Field

[47] Hint: Peak is 458% of capacity of segment #4

Runoff = 7.59 cfs @ 12.19 hrs, Volume= 0.692 af, Depth= 2.55"
Routed to Pond 3P : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.12"

Area (sf)	CN	Description
95,083	74	>75% Grass cover, Good, HSG C
12,977	80	>75% Grass cover, Good, HSG D
6,534	98	Paved parking, HSG C
820	98	Paved parking, HSG D
1,100	98	Roofs, HSG C
0	98	Roofs, HSG D
25,542	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
142,056	75	Weighted Average
133,602		94.05% Pervious Area
8,454		5.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
0.3	23	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.8	200	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, CMP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
13.8	474	Total			

Summary for Pond 1P: Track Field East

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.39' above defined flood level

Inflow Area = 2.327 ac, 30.17% Impervious, Inflow Depth = 3.48" for 10-yr event
Inflow = 9.38 cfs @ 12.09 hrs, Volume= 0.675 af
Outflow = 1.85 cfs @ 12.53 hrs, Volume= 0.675 af, Atten= 80%, Lag= 26.5 min
Discarded = 0.43 cfs @ 12.53 hrs, Volume= 0.411 af
Primary = 1.42 cfs @ 12.53 hrs, Volume= 0.264 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.89' @ 12.53 hrs Surf.Area= 54,991 sf Storage= 10,884 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 89.6 min calculated for 0.674 af (100% of inflow)
Center-of-Mass det. time= 89.6 min (896.2 - 806.6)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	124.00'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.50' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir X 2.00** 0 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.43 cfs @ 12.53 hrs HW=123.89' (Free Discharge)
└**2=Exfiltration** (Controls 0.43 cfs)

Primary OutFlow Max=1.42 cfs @ 12.53 hrs HW=123.89' (Free Discharge)
└**1=Culvert** (Passes 1.42 cfs of 16.64 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Passes 1.42 cfs of 2.70 cfs potential flow)
└**3=Culvert** (Outlet Controls 1.42 cfs @ 1.30 fps)

Stage-Area-Storage for Pond 1P: Track Field East

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,218
123.92	54,991	11,438
123.93	54,991	11,658
123.94	54,991	11,878
123.95	54,991	12,098
123.96	54,991	12,318
123.97	54,991	12,538
123.98	54,991	12,758
123.99	54,991	12,978
124.00	54,991	13,198
124.01	54,991	13,429
124.02	54,991	13,661
124.03	54,991	13,892
124.04	54,991	14,124
124.05	54,991	14,355
124.06	54,991	14,587
124.07	54,991	14,818
124.08	54,991	15,050
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 2P: Track Field West

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.37' above defined flood level

Inflow Area = 2.124 ac, 39.83% Impervious, Inflow Depth = 3.68" for 10-yr event
Inflow = 8.99 cfs @ 12.09 hrs, Volume= 0.651 af
Outflow = 2.18 cfs @ 12.48 hrs, Volume= 0.651 af, Atten= 76%, Lag= 23.4 min
Discarded = 0.42 cfs @ 12.48 hrs, Volume= 0.413 af
Primary = 1.75 cfs @ 12.48 hrs, Volume= 0.239 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 123.87' @ 12.48 hrs Surf.Area= 54,991 sf Storage= 10,241 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 91.0 min calculated for 0.651 af (100% of inflow)
Center-of-Mass det. time= 91.0 min (891.4 - 800.4)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 3.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.52' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**3.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 4.4' Crest Height

Discarded OutFlow Max=0.42 cfs @ 12.48 hrs HW=123.87' (Free Discharge)
└**2=Exfiltration** (Controls 0.42 cfs)

Primary OutFlow Max=1.75 cfs @ 12.48 hrs HW=123.87' (Free Discharge)
└**1=Culvert** (Passes 1.75 cfs of 16.58 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 1.75 cfs @ 1.85 fps)
└**3=Culvert** (Passes 1.75 cfs of 2.04 cfs potential flow)

Stage-Area-Storage for Pond 2P: Track Field West

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,230
123.92	54,991	11,461
123.93	54,991	11,693
123.94	54,991	11,924
123.95	54,991	12,156
123.96	54,991	12,387
123.97	54,991	12,619
123.98	54,991	12,850
123.99	54,991	13,074
124.00	54,991	13,294
124.01	54,991	13,514
124.02	54,991	13,734
124.03	54,991	13,954
124.04	54,991	14,174
124.05	54,991	14,394
124.06	54,991	14,614
124.07	54,991	14,834
124.08	54,991	15,054
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 3P: Detention Basin

Inflow Area = 7.131 ac, 16.89% Impervious, Inflow Depth = 1.68" for 10-yr event
Inflow = 8.96 cfs @ 12.21 hrs, Volume= 0.998 af
Outflow = 1.19 cfs @ 14.42 hrs, Volume= 0.994 af, Atten= 87%, Lag= 133.2 min
Primary = 1.19 cfs @ 14.42 hrs, Volume= 0.994 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 117.83' @ 14.42 hrs Surf.Area= 14,758 sf Storage= 23,293 cf

Plug-Flow detention time= 288.7 min calculated for 0.994 af (100% of inflow)
Center-of-Mass det. time= 287.0 min (1,116.9 - 829.9)

Volume	Invert	Avail.Storage	Storage Description
#1	116.00'	70,860 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	11,268	467.0	0	0	11,268
117.00	12,694	487.0	11,974	11,974	12,860
118.00	15,214	532.0	13,935	25,909	16,544
119.00	17,446	574.0	16,317	42,226	20,282
120.00	19,925	601.0	18,672	60,898	22,874
120.50	19,925	601.0	9,963	70,860	23,174

Device	Routing	Invert	Outlet Devices
#1	Device 2	116.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	116.00'	**12.0" Round Culvert** L= 15.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 116.00' / 115.48' S= 0.0347 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Device 2	119.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.19 cfs @ 14.42 hrs HW=117.83' (Free Discharge)
└**2=Culvert** (Passes 1.19 cfs of 4.35 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 1.19 cfs @ 6.04 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 3P: Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
116.00	11,268	0
116.05	11,337	565
116.10	11,407	1,134
116.15	11,476	1,706
116.20	11,546	2,281
116.25	11,617	2,860
116.30	11,687	3,443
116.35	11,757	4,029
116.40	11,828	4,619
116.45	11,899	5,212
116.50	11,970	5,809
116.55	12,042	6,409
116.60	12,113	7,013
116.65	12,185	7,620
116.70	12,257	8,231
116.75	12,330	8,846
116.80	12,402	9,464
116.85	12,475	10,086
116.90	12,548	10,712
116.95	12,621	11,341
117.00	12,694	11,974
117.05	12,815	12,612
117.10	12,936	13,255
117.15	13,057	13,905
117.20	13,180	14,561
117.25	13,303	15,223
117.30	13,426	15,891
117.35	13,550	16,566
117.40	13,675	17,246
117.45	13,800	17,933
117.50	13,925	18,626
117.55	14,052	19,326
117.60	14,179	20,032
117.65	14,306	20,744
117.70	14,434	21,462
117.75	14,563	22,187
117.80	14,692	22,918
117.85	14,821	23,656
117.90	14,952	24,401
117.95	15,083	25,152
118.00	15,214	25,909
118.05	15,322	26,672
118.10	15,430	27,441
118.15	15,539	28,215
118.20	15,648	28,995
118.25	15,758	29,780
118.30	15,868	30,571
118.35	15,978	31,367
118.40	16,088	32,169
118.45	16,200	32,976
118.50	16,311	33,789
118.55	16,423	34,607
118.60	16,535	35,431
118.65	16,647	36,260
118.70	16,760	37,096
118.75	16,874	37,936
118.80	16,987	38,783
118.85	17,101	39,635
118.90	17,216	40,493
118.95	17,331	41,357
119.00	17,446	42,226
119.05	17,566	43,101
119.10	17,686	43,983
119.15	17,807	44,870
119.20	17,929	45,764
119.25	18,050	46,663
119.30	18,172	47,569
119.35	18,295	48,480
119.40	18,418	49,398
119.45	18,541	50,322
119.50	18,665	51,252
119.55	18,789	52,189
119.60	18,914	53,131
119.65	19,039	54,080
119.70	19,164	55,035
119.75	19,290	55,996
119.80	19,416	56,964
119.85	19,543	57,938
119.90	19,670	58,918
119.95	19,797	59,905
120.00	**19,925**	60,898
120.05	19,925	61,894
120.10	19,925	62,890
120.15	19,925	63,887
120.20	19,925	64,883
120.25	19,925	65,879
120.30	19,925	66,875
120.35	19,925	67,872
120.40	19,925	68,868
120.45	19,925	69,864
120.50	19,925	**70,860**

Summary for Pond 4P: Baseball Field North

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.15' above defined flood level

Inflow Area = 1.664 ac, 5.79% Impervious, Inflow Depth = 3.00" for 10-yr event
Inflow = 5.85 cfs @ 12.09 hrs, Volume= 0.416 af
Outflow = 0.86 cfs @ 12.61 hrs, Volume= 0.416 af, Atten= 85%, Lag= 31.5 min
Discarded = 0.47 cfs @ 12.61 hrs, Volume= 0.348 af
Primary = 0.40 cfs @ 12.61 hrs, Volume= 0.068 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.65' @ 12.61 hrs Surf.Area= 66,230 sf Storage= 6,706 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 89.6 min calculated for 0.416 af (100% of inflow)
Center-of-Mass det. time= 89.6 min (910.3 - 820.8)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.47 cfs @ 12.61 hrs HW=123.65' (Free Discharge)
└**2=Exfiltration** (Controls 0.47 cfs)

Primary OutFlow Max=0.40 cfs @ 12.61 hrs HW=123.65' (Free Discharge)
└**1=Culvert** (Passes 0.40 cfs of 10.43 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.40 cfs @ 1.29 fps)
└**3=Culvert** (Passes 0.40 cfs of 1.74 cfs potential flow)

Stage-Area-Storage for Pond 4P: Baseball Field North

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 5P: Baseball Field South

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.15' above defined flood level

Inflow Area = 1.746 ac, 9.42% Impervious, Inflow Depth = 2.81" for 10-yr event
Inflow = 5.76 cfs @ 12.09 hrs, Volume= 0.409 af
Outflow = 0.84 cfs @ 12.63 hrs, Volume= 0.409 af, Atten= 85%, Lag= 32.5 min
Discarded = 0.46 cfs @ 12.63 hrs, Volume= 0.343 af
Primary = 0.38 cfs @ 12.63 hrs, Volume= 0.067 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.65' @ 12.63 hrs Surf.Area= 66,230 sf Storage= 6,602 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 91.3 min calculated for 0.409 af (100% of inflow)
Center-of-Mass det. time= 91.3 min (917.3 - 826.0)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.00'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.46 cfs @ 12.63 hrs HW=123.65' (Free Discharge)
└**2=Exfiltration** (Controls 0.46 cfs)

Primary OutFlow Max=0.38 cfs @ 12.63 hrs HW=123.65' (Free Discharge)
└**1=Culvert** (Passes 0.38 cfs of 10.42 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.38 cfs @ 1.27 fps)
└**3=Culvert** (Passes 0.38 cfs of 1.72 cfs potential flow)

Stage-Area-Storage for Pond 5P: Baseball Field South

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 6P: Infiltration Trench

Inflow Area = 1.060 ac, 59.82% Impervious, Inflow Depth = 3.89" for 10-yr event
Inflow = 4.68 cfs @ 12.09 hrs, Volume= 0.343 af
Outflow = 4.67 cfs @ 12.09 hrs, Volume= 0.343 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.02 cfs @ 6.98 hrs, Volume= 0.095 af
Primary = 0.94 cfs @ 12.09 hrs, Volume= 0.181 af
Routed to Link DP-1 : Southeast Wetlands
Secondary = 3.71 cfs @ 12.09 hrs, Volume= 0.067 af
Routed to Link DP-2 : West Wetland

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.88' @ 12.09 hrs Surf.Area= 3,375 sf Storage= 3,888 cf

Plug-Flow detention time= 365.2 min calculated for 0.343 af (100% of inflow)
Center-of-Mass det. time= 365.2 min (1,158.8 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	4,050 cf	**5.00'W x 135.00'L x 3.00'H Prismatoid** x 5 10,125 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Secondary	121.80'	**50.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	119.00'	**0.270 in/hr Exfiltration over Surface area**
#3	Primary	121.00'	**6.0" Round 6" Perf Pipe** L= 150.0' Ke= 0.200 Inlet / Outlet Invert= 121.00' / 118.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 6.98 hrs HW=119.03' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.94 cfs @ 12.09 hrs HW=121.88' (Free Discharge)
↑**3=6" Perf Pipe** (Inlet Controls 0.94 cfs @ 4.78 fps)

Secondary OutFlow Max=3.71 cfs @ 12.09 hrs HW=121.88' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 3.71 cfs @ 0.93 fps)

Stage-Area-Storage for Pond 6P: Infiltration Trench

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
119.00	**3,375**	0
119.05	3,375	67
119.10	3,375	135
119.15	3,375	203
119.20	3,375	270
119.25	3,375	338
119.30	3,375	405
119.35	3,375	472
119.40	3,375	540
119.45	3,375	608
119.50	3,375	675
119.55	3,375	742
119.60	3,375	810
119.65	3,375	878
119.70	3,375	945
119.75	3,375	1,013
119.80	3,375	1,080
119.85	3,375	1,147
119.90	3,375	1,215
119.95	3,375	1,283
120.00	3,375	1,350
120.05	3,375	1,417
120.10	3,375	1,485
120.15	3,375	1,553
120.20	3,375	1,620
120.25	3,375	1,688
120.30	3,375	1,755
120.35	3,375	1,822
120.40	3,375	1,890
120.45	3,375	1,958
120.50	3,375	2,025
120.55	3,375	2,092
120.60	3,375	2,160
120.65	3,375	2,228
120.70	3,375	2,295
120.75	3,375	2,363
120.80	3,375	2,430
120.85	3,375	2,497
120.90	3,375	2,565
120.95	3,375	2,633
121.00	3,375	2,700
121.05	3,375	2,767
121.10	3,375	2,835
121.15	3,375	2,903
121.20	3,375	2,970
121.25	3,375	3,038
121.30	3,375	3,105
121.35	3,375	3,172
121.40	3,375	3,240
121.45	3,375	3,308
121.50	3,375	3,375
121.55	3,375	3,442
121.60	3,375	3,510
121.65	3,375	3,578
121.70	3,375	3,645
121.75	3,375	3,713
121.80	3,375	3,780
121.85	3,375	3,847
121.90	3,375	3,915
121.95	3,375	3,983
122.00	3,375	**4,050**

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 18.086 ac, 27.53% Impervious, Inflow Depth = 2.15" for 10-yr event
Inflow = 22.50 cfs @ 12.11 hrs, Volume= 3.237 af
Primary = 22.50 cfs @ 12.11 hrs, Volume= 3.237 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 0.731 ac, 20.88% Impervious, Inflow Depth = 4.19" for 10-yr event
Inflow = 5.13 cfs @ 12.10 hrs, Volume= 0.255 af
Primary = 5.13 cfs @ 12.10 hrs, Volume= 0.255 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR1A: Track & Field East Runoff Area=101,344 sf 30.17% Impervious Runoff Depth=4.59"
Tc=6.0 min CN=85 Runoff=12.24 cfs 0.889 af

SubcatchmentPR1B: Track & Field West Runoff Area=92,527 sf 39.83% Impervious Runoff Depth=4.80"
Tc=6.0 min CN=87 Runoff=11.59 cfs 0.850 af

SubcatchmentPR1C: North of Track & Runoff Area=52,363 sf 32.47% Impervious Runoff Depth=4.48"
Tc=6.0 min CN=84 Runoff=6.20 cfs 0.449 af

SubcatchmentPR2: North of Fields Runoff Area=114,758 sf 25.76% Impervious Runoff Depth=4.16"
Flow Length=1,155' Tc=12.9 min CN=81 Runoff=10.23 cfs 0.913 af

SubcatchmentPR3A: Baseball Field North Runoff Area=72,480 sf 5.79% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=7.86 cfs 0.562 af

SubcatchmentPR3B: Baseball Field South Runoff Area=76,054 sf 9.42% Impervious Runoff Depth=3.85"
Tc=6.0 min CN=78 Runoff=7.86 cfs 0.559 af

SubcatchmentPR3C: North of Baseball Runoff Area=34,336 sf 29.82% Impervious Runoff Depth=4.59"
Tc=6.0 min CN=85 Runoff=4.15 cfs 0.301 af

SubcatchmentPR4: Fitness Center Runoff Area=55,755 sf 81.17% Impervious Runoff Depth=5.71"
Tc=6.0 min CN=95 Runoff=7.76 cfs 0.609 af

SubcatchmentPR5: Tennis Courts Runoff Area=46,171 sf 59.82% Impervious Runoff Depth=5.03"
Tc=6.0 min CN=89 Runoff=5.98 cfs 0.444 af

SubcatchmentPR6: Direct to Wetlands Runoff Area=31,863 sf 20.88% Impervious Runoff Depth=4.16"
Flow Length=398' Tc=15.4 min CN=81 Runoff=2.66 cfs 0.253 af

SubcatchmentPR7: South of Field Runoff Area=142,056 sf 5.95% Impervious Runoff Depth=3.54"
Flow Length=474' Tc=13.8 min CN=75 Runoff=10.58 cfs 0.962 af

Pond 1P: Track Field East Peak Elev=124.08' Storage=15,050 cf Inflow=12.24 cfs 0.889 af
Discarded=0.46 cfs 0.471 af Primary=1.76 cfs 0.418 af Outflow=2.22 cfs 0.889 af

Pond 2P: Track Field West Peak Elev=124.00' Storage=13,362 cf Inflow=11.59 cfs 0.850 af
Discarded=0.45 cfs 0.467 af Primary=2.45 cfs 0.383 af Outflow=2.89 cfs 0.850 af

Pond 3P: Detention Basin Peak Elev=118.72' Storage=37,510 cf Inflow=13.26 cfs 1.497 af
Outflow=1.49 cfs 1.494 af

Pond 4P: Baseball Field North Peak Elev=123.75' Storage=9,212 cf Inflow=7.86 cfs 0.562 af
Discarded=0.49 cfs 0.412 af Primary=0.82 cfs 0.150 af Outflow=1.30 cfs 0.562 af

Pond 5P: Baseball Field South Peak Elev=123.75' Storage=9,181 cf Inflow=7.86 cfs 0.559 af
Discarded=0.47 cfs 0.407 af Primary=0.81 cfs 0.152 af Outflow=1.28 cfs 0.559 af

Pond 6P: Infiltration Trench Peak Elev=121.90' Storage=3,911 cf Inflow=5.98 cfs 0.444 af
Discarded=0.02 cfs 0.097 af Primary=0.95 cfs 0.231 af Secondary=4.99 cfs 0.116 af Outflow=5.97 cfs 0.444 af

Link DP-1: Southeast Wetlands Inflow=29.33 cfs 4.564 af
Primary=29.33 cfs 4.564 af

Link DP-2: West Wetland Inflow=6.91 cfs 0.370 af
Primary=6.91 cfs 0.370 af

Total Runoff Area = 18.818 ac Runoff Volume = 6.792 af Average Runoff Depth = 4.33"
72.73% Pervious = 13.685 ac 27.27% Impervious = 5.133 ac

Summary for Subcatchment PR1A: Track & Field East

Runoff = 12.24 cfs @ 12.09 hrs, Volume= 0.889 af, Depth= 4.59"
Routed to Pond 1P : Track Field East

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
4,418	74	>75% Grass cover, Good, HSG C
66,353	80	>75% Grass cover, Good, HSG D
2,011	98	Paved parking, HSG C
28,562	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
101,344	85	Weighted Average
70,771		69.83% Pervious Area
30,573		30.17% Impervious Area

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

Summary for Subcatchment PR1B: Track & Field West

Runoff = 11.59 cfs @ 12.09 hrs, Volume= 0.850 af, Depth= 4.80"
Routed to Pond 2P : Track Field West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
2,296	74	>75% Grass cover, Good, HSG C
53,380	80	>75% Grass cover, Good, HSG D
16,812	98	Paved parking, HSG C
20,039	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
92,527	87	Weighted Average
55,676		60.17% Pervious Area
36,851		39.83% Impervious Area

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

Summary for Subcatchment PR1C: North of Track & Field East

Runoff = 6.20 cfs @ 12.09 hrs, Volume= 0.449 af, Depth= 4.48"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
17,445	74	>75% Grass cover, Good, HSG C
17,914	80	>75% Grass cover, Good, HSG D
7,735	98	Paved parking, HSG C
9,269	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
52,363	84	Weighted Average
35,359		67.53% Pervious Area
17,004		32.47% Impervious Area

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

Summary for Subcatchment PR2: North of Fields

Runoff = 10.23 cfs @ 12.17 hrs, Volume= 0.913 af, Depth= 4.16"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
60,546	74	>75% Grass cover, Good, HSG C
24,646	80	>75% Grass cover, Good, HSG D
17,396	98	Paved parking, HSG C
1,061	98	Paved parking, HSG D
7,942	98	Roofs, HSG C
3,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
114,758	81	Weighted Average
85,192		74.24% Pervious Area
29,566		25.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
2.7	205	0.0320	1.25		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	900	0.0060	10.38	165.02	**Pipe Channel,** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
12.9	1,155	Total			

Summary for Subcatchment PR3A: Baseball Field North

Runoff = 7.86 cfs @ 12.09 hrs, Volume= 0.562 af, Depth= 4.05"
Routed to Pond 4P : Baseball Field North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
10,897	74	>75% Grass cover, Good, HSG C
57,390	80	>75% Grass cover, Good, HSG D
1,799	98	Paved parking, HSG C
2,394	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
72,480	80	Weighted Average
68,287		94.21% Pervious Area
4,193		5.79% Impervious Area

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

Summary for Subcatchment PR3B: Baseball Field South

Runoff = 7.86 cfs @ 12.09 hrs, Volume= 0.559 af, Depth= 3.85"
Routed to Pond 5P : Baseball Field South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
50,918	74	>75% Grass cover, Good, HSG C
17,970	80	>75% Grass cover, Good, HSG D
6,012	98	Paved parking, HSG C
1,154	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
76,054	78	Weighted Average
68,888		90.58% Pervious Area
7,166		9.42% Impervious Area

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

Summary for Subcatchment PR3C: North of Baseball Field North

Runoff = 4.15 cfs @ 12.09 hrs, Volume= 0.301 af, Depth= 4.59"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
24,097	80	>75% Grass cover, Good, HSG D
0	98	Paved parking, HSG C
10,239	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
34,336	85	Weighted Average
24,097		70.18% Pervious Area
10,239		29.82% Impervious Area

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

Summary for Subcatchment PR4: Fitness Center

Runoff = 7.76 cfs @ 12.08 hrs, Volume= 0.609 af, Depth= 5.71"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
387	74	>75% Grass cover, Good, HSG C
10,114	80	>75% Grass cover, Good, HSG D
246	98	Paved parking, HSG C
2,643	98	Paved parking, HSG D
946	98	Roofs, HSG C
41,419	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
55,755	95	Weighted Average
10,501		18.83% Pervious Area
45,254		81.17% Impervious Area

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

Summary for Subcatchment PR5: Tennis Courts

Runoff = 5.98 cfs @ 12.08 hrs, Volume= 0.444 af, Depth= 5.03"
Routed to Pond 6P : Infiltration Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
9,849	74	>75% Grass cover, Good, HSG C
4,487	80	>75% Grass cover, Good, HSG D
23,259	98	Paved parking, HSG C
4,361	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,938	70	Woods, Good, HSG C
277	77	Woods, Good, HSG D
46,171	89	Weighted Average
18,551		40.18% Pervious Area
27,620		59.82% Impervious Area

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

Summary for Subcatchment PR6: Direct to Wetlands

Runoff = 2.66 cfs @ 12.20 hrs, Volume= 0.253 af, Depth= 4.16"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
4,521	74	>75% Grass cover, Good, HSG C
7,576	80	>75% Grass cover, Good, HSG D
4,777	98	Paved parking, HSG C
1,877	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,895	70	Woods, Good, HSG C
9,217	77	Woods, Good, HSG D
31,863	81	Weighted Average
25,209		79.12% Pervious Area
6,654		20.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0780	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.75"
0.1	12	0.3330	2.89		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	105	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	176	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	55	0.1020	1.60		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	398	Total			

Summary for Subcatchment PR7: South of Field

[47] Hint: Peak is 639% of capacity of segment #4

Runoff = 10.58 cfs @ 12.19 hrs, Volume= 0.962 af, Depth= 3.54"
Routed to Pond 3P : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.30"

Area (sf)	CN	Description
95,083	74	>75% Grass cover, Good, HSG C
12,977	80	>75% Grass cover, Good, HSG D
6,534	98	Paved parking, HSG C
820	98	Paved parking, HSG D
1,100	98	Roofs, HSG C
0	98	Roofs, HSG D
25,542	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
142,056	75	Weighted Average
133,602		94.05% Pervious Area
8,454		5.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
0.3	23	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.8	200	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, CMP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
13.8	474	Total			

Summary for Pond 1P: Track Field East

[44] Hint: Outlet device #3 is below defined storage
[95] Warning: Outlet Device #4 rise exceeded
[58] Hint: Peaked 2.58' above defined flood level

Inflow Area = 2.327 ac, 30.17% Impervious, Inflow Depth = 4.59" for 25-yr event
Inflow = 12.24 cfs @ 12.09 hrs, Volume= 0.889 af
Outflow = 2.22 cfs @ 12.54 hrs, Volume= 0.889 af, Atten= 82%, Lag= 27.3 min
Discarded = 0.46 cfs @ 12.54 hrs, Volume= 0.471 af
Primary = 1.76 cfs @ 12.54 hrs, Volume= 0.418 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 124.08' @ 12.54 hrs Surf.Area= 54,991 sf Storage= 15,050 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 94.7 min calculated for 0.889 af (100% of inflow)
Center-of-Mass det. time= 94.7 min (893.5 - 798.9)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	124.00'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.50' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir X 2.00** 0 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.46 cfs @ 12.54 hrs HW=124.08' (Free Discharge)
└**2=Exfiltration** (Controls 0.46 cfs)

Primary OutFlow Max=1.76 cfs @ 12.54 hrs HW=124.08' (Free Discharge)
└**1=Culvert** (Passes 1.76 cfs of 17.04 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Passes 1.76 cfs of 5.14 cfs potential flow)
└**3=Culvert** (Outlet Controls 1.76 cfs @ 1.62 fps)

Stage-Area-Storage for Pond 1P: Track Field East

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,218
123.92	54,991	11,438
123.93	54,991	11,658
123.94	54,991	11,878
123.95	54,991	12,098
123.96	54,991	12,318
123.97	54,991	12,538
123.98	54,991	12,758
123.99	54,991	12,978
124.00	54,991	13,198
124.01	54,991	13,429
124.02	54,991	13,661
124.03	54,991	13,892
124.04	54,991	14,124
124.05	54,991	14,355
124.06	54,991	14,587
124.07	54,991	14,818
124.08	54,991	15,050
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 2P: Track Field West

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.50' above defined flood level

Inflow Area = 2.124 ac, 39.83% Impervious, Inflow Depth = 4.80" for 25-yr event
Inflow = 11.59 cfs @ 12.09 hrs, Volume= 0.850 af
Outflow = 2.89 cfs @ 12.46 hrs, Volume= 0.850 af, Atten= 75%, Lag= 22.8 min
Discarded = 0.45 cfs @ 12.46 hrs, Volume= 0.467 af
Primary = 2.45 cfs @ 12.46 hrs, Volume= 0.383 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 124.00' @ 12.46 hrs Surf.Area= 54,991 sf Storage= 13,362 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 88.2 min calculated for 0.850 af (100% of inflow)
Center-of-Mass det. time= 88.2 min (881.1 - 793.0)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 3.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.52' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**3.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 4.4' Crest Height

Discarded OutFlow Max=0.45 cfs @ 12.46 hrs HW=124.00' (Free Discharge)
└**2=Exfiltration** (Controls 0.45 cfs)

Primary OutFlow Max=2.45 cfs @ 12.46 hrs HW=124.00' (Free Discharge)
└**1=Culvert** (Passes 2.45 cfs of 16.87 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Passes 2.45 cfs of 3.03 cfs potential flow)
└**3=Culvert** (Outlet Controls 2.45 cfs @ 1.49 fps)

Stage-Area-Storage for Pond 2P: Track Field West

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,230
123.92	54,991	11,461
123.93	54,991	11,693
123.94	54,991	11,924
123.95	54,991	12,156
123.96	54,991	12,387
123.97	54,991	12,619
123.98	54,991	12,850
123.99	54,991	13,074
124.00	54,991	13,294
124.01	54,991	13,514
124.02	54,991	13,734
124.03	54,991	13,954
124.04	54,991	14,174
124.05	54,991	14,394
124.06	54,991	14,614
124.07	54,991	14,834
124.08	54,991	15,054
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 3P: Detention Basin

[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 0.22'

Inflow Area = 7.131 ac, 16.89% Impervious, Inflow Depth = 2.52" for 25-yr event
Inflow = 13.26 cfs @ 12.19 hrs, Volume= 1.497 af
Outflow = 1.49 cfs @ 14.82 hrs, Volume= 1.494 af, Atten= 89%, Lag= 157.4 min
Primary = 1.49 cfs @ 14.82 hrs, Volume= 1.494 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 118.72' @ 14.82 hrs Surf.Area= 16,816 sf Storage= 37,510 cf

Plug-Flow detention time= 341.3 min calculated for 1.494 af (100% of inflow)
Center-of-Mass det. time= 339.7 min (1,163.4 - 823.6)

Volume	Invert	Avail.Storage	Storage Description
#1	116.00'	70,860 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	11,268	467.0	0	0	11,268
117.00	12,694	487.0	11,974	11,974	12,860
118.00	15,214	532.0	13,935	25,909	16,544
119.00	17,446	574.0	16,317	42,226	20,282
120.00	19,925	601.0	18,672	60,898	22,874
120.50	19,925	601.0	9,963	70,860	23,174

Device	Routing	Invert	Outlet Devices
#1	Device 2	116.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	116.00'	**12.0" Round Culvert** L= 15.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 116.00' / 115.48' S= 0.0347 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Device 2	119.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.49 cfs @ 14.82 hrs HW=118.72' (Free Discharge)
└**2=Culvert** (Passes 1.49 cfs of 5.64 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 1.49 cfs @ 7.57 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 3P: Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
116.00	11,268	0
116.05	11,337	565
116.10	11,407	1,134
116.15	11,476	1,706
116.20	11,546	2,281
116.25	11,617	2,860
116.30	11,687	3,443
116.35	11,757	4,029
116.40	11,828	4,619
116.45	11,899	5,212
116.50	11,970	5,809
116.55	12,042	6,409
116.60	12,113	7,013
116.65	12,185	7,620
116.70	12,257	8,231
116.75	12,330	8,846
116.80	12,402	9,464
116.85	12,475	10,086
116.90	12,548	10,712
116.95	12,621	11,341
117.00	12,694	11,974
117.05	12,815	12,612
117.10	12,936	13,255
117.15	13,057	13,905
117.20	13,180	14,561
117.25	13,303	15,223
117.30	13,426	15,891
117.35	13,550	16,566
117.40	13,675	17,246
117.45	13,800	17,933
117.50	13,925	18,626
117.55	14,052	19,326
117.60	14,179	20,032
117.65	14,306	20,744
117.70	14,434	21,462
117.75	14,563	22,187
117.80	14,692	22,918
117.85	14,821	23,656
117.90	14,952	24,401
117.95	15,083	25,152
118.00	15,214	25,909
118.05	15,322	26,672
118.10	15,430	27,441
118.15	15,539	28,215
118.20	15,648	28,995
118.25	15,758	29,780
118.30	15,868	30,571
118.35	15,978	31,367
118.40	16,088	32,169
118.45	16,200	32,976
118.50	16,311	33,789
118.55	16,423	34,607
118.60	16,535	35,431
118.65	16,647	36,260
118.70	16,760	37,096
118.75	16,874	37,936
118.80	16,987	38,783
118.85	17,101	39,635
118.90	17,216	40,493
118.95	17,331	41,357
119.00	17,446	42,226
119.05	17,566	43,101
119.10	17,686	43,983
119.15	17,807	44,870
119.20	17,929	45,764
119.25	18,050	46,663
119.30	18,172	47,569
119.35	18,295	48,480
119.40	18,418	49,398
119.45	18,541	50,322
119.50	18,665	51,252
119.55	18,789	52,189
119.60	18,914	53,131
119.65	19,039	54,080
119.70	19,164	55,035
119.75	19,290	55,996
119.80	19,416	56,964
119.85	19,543	57,938
119.90	19,670	58,918
119.95	19,797	59,905
120.00	**19,925**	60,898
120.05	19,925	61,894
120.10	19,925	62,890
120.15	19,925	63,887
120.20	19,925	64,883
120.25	19,925	65,879
120.30	19,925	66,875
120.35	19,925	67,872
120.40	19,925	68,868
120.45	19,925	69,864
120.50	19,925	**70,860**

Summary for Pond 4P: Baseball Field North

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.25' above defined flood level

Inflow Area = 1.664 ac, 5.79% Impervious, Inflow Depth = 4.05" for 25-yr event
Inflow = 7.86 cfs @ 12.09 hrs, Volume= 0.562 af
Outflow = 1.30 cfs @ 12.57 hrs, Volume= 0.562 af, Atten= 83%, Lag= 28.8 min
Discarded = 0.49 cfs @ 12.57 hrs, Volume= 0.412 af
Primary = 0.82 cfs @ 12.57 hrs, Volume= 0.150 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.75' @ 12.57 hrs Surf.Area= 66,230 sf Storage= 9,212 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 94.0 min calculated for 0.562 af (100% of inflow)
Center-of-Mass det. time= 94.0 min (906.1 - 812.2)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.49 cfs @ 12.57 hrs HW=123.75' (Free Discharge)
└**2=Exfiltration** (Controls 0.49 cfs)

Primary OutFlow Max=0.82 cfs @ 12.57 hrs HW=123.75' (Free Discharge)
└**1=Culvert** (Passes 0.82 cfs of 10.76 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.82 cfs @ 1.65 fps)
└**3=Culvert** (Passes 0.82 cfs of 2.22 cfs potential flow)

Stage-Area-Storage for Pond 4P: Baseball Field North

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 5P: Baseball Field South

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.25' above defined flood level

Inflow Area = 1.746 ac, 9.42% Impervious, Inflow Depth = 3.85" for 25-yr event
Inflow = 7.86 cfs @ 12.09 hrs, Volume= 0.559 af
Outflow = 1.28 cfs @ 12.57 hrs, Volume= 0.559 af, Atten= 84%, Lag= 29.2 min
Discarded = 0.47 cfs @ 12.57 hrs, Volume= 0.407 af
Primary = 0.81 cfs @ 12.57 hrs, Volume= 0.152 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.75' @ 12.57 hrs Surf.Area= 66,230 sf Storage= 9,181 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 96.0 min calculated for 0.559 af (100% of inflow)
Center-of-Mass det. time= 95.9 min (913.0 - 817.1)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.00'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.47 cfs @ 12.57 hrs HW=123.75' (Free Discharge)
└**2=Exfiltration** (Controls 0.47 cfs)

Primary OutFlow Max=0.81 cfs @ 12.57 hrs HW=123.75' (Free Discharge)
└**1=Culvert** (Passes 0.81 cfs of 10.75 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.81 cfs @ 1.64 fps)
└**3=Culvert** (Passes 0.81 cfs of 2.21 cfs potential flow)

Stage-Area-Storage for Pond 5P: Baseball Field South

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 6P: Infiltration Trench

Inflow Area = 1.060 ac, 59.82% Impervious, Inflow Depth = 5.03" for 25-yr event
Inflow = 5.98 cfs @ 12.08 hrs, Volume= 0.444 af
Outflow = 5.97 cfs @ 12.09 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.02 cfs @ 6.05 hrs, Volume= 0.097 af
Primary = 0.95 cfs @ 12.09 hrs, Volume= 0.231 af
Routed to Link DP-1 : Southeast Wetlands
Secondary = 4.99 cfs @ 12.09 hrs, Volume= 0.116 af
Routed to Link DP-2 : West Wetland

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.90' @ 12.09 hrs Surf.Area= 3,375 sf Storage= 3,911 cf

Plug-Flow detention time= 291.5 min calculated for 0.444 af (100% of inflow)
Center-of-Mass det. time= 291.5 min (1,078.0 - 786.6)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	4,050 cf	**5.00'W x 135.00'L x 3.00'H Prismatoid** x 5 10,125 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Secondary	121.80'	**50.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	119.00'	**0.270 in/hr Exfiltration over Surface area**
#3	Primary	121.00'	**6.0" Round 6" Perf Pipe** L= 150.0' Ke= 0.200 Inlet / Outlet Invert= 121.00' / 118.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 6.05 hrs HW=119.03' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.95 cfs @ 12.09 hrs HW=121.90' (Free Discharge)
↑**3=6" Perf Pipe** (Inlet Controls 0.95 cfs @ 4.84 fps)

Secondary OutFlow Max=4.95 cfs @ 12.09 hrs HW=121.90' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 4.95 cfs @ 1.02 fps)

Stage-Area-Storage for Pond 6P: Infiltration Trench

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
119.00	**3,375**	0
119.05	3,375	67
119.10	3,375	135
119.15	3,375	203
119.20	3,375	270
119.25	3,375	338
119.30	3,375	405
119.35	3,375	472
119.40	3,375	540
119.45	3,375	608
119.50	3,375	675
119.55	3,375	742
119.60	3,375	810
119.65	3,375	878
119.70	3,375	945
119.75	3,375	1,013
119.80	3,375	1,080
119.85	3,375	1,147
119.90	3,375	1,215
119.95	3,375	1,283
120.00	3,375	1,350
120.05	3,375	1,417
120.10	3,375	1,485
120.15	3,375	1,553
120.20	3,375	1,620
120.25	3,375	1,688
120.30	3,375	1,755
120.35	3,375	1,822
120.40	3,375	1,890
120.45	3,375	1,958
120.50	3,375	2,025
120.55	3,375	2,092
120.60	3,375	2,160
120.65	3,375	2,228
120.70	3,375	2,295
120.75	3,375	2,363
120.80	3,375	2,430
120.85	3,375	2,497
120.90	3,375	2,565
120.95	3,375	2,633
121.00	3,375	2,700
121.05	3,375	2,767
121.10	3,375	2,835
121.15	3,375	2,903
121.20	3,375	2,970
121.25	3,375	3,038
121.30	3,375	3,105
121.35	3,375	3,172
121.40	3,375	3,240
121.45	3,375	3,308
121.50	3,375	3,375
121.55	3,375	3,442
121.60	3,375	3,510
121.65	3,375	3,578
121.70	3,375	3,645
121.75	3,375	3,713
121.80	3,375	3,780
121.85	3,375	3,847
121.90	3,375	3,915
121.95	3,375	3,983
122.00	3,375	**4,050**

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 18.086 ac, 27.53% Impervious, Inflow Depth = 3.03" for 25-yr event
Inflow = 29.33 cfs @ 12.11 hrs, Volume= 4.564 af
Primary = 29.33 cfs @ 12.11 hrs, Volume= 4.564 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 0.731 ac, 20.88% Impervious, Inflow Depth = 6.06" for 25-yr event
Inflow = 6.91 cfs @ 12.10 hrs, Volume= 0.370 af
Primary = 6.91 cfs @ 12.10 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR1A: Track & Field East Runoff Area=101,344 sf 30.17% Impervious Runoff Depth=6.33"
Tc=6.0 min CN=85 Runoff=16.63 cfs 1.227 af

SubcatchmentPR1B: Track & Field West Runoff Area=92,527 sf 39.83% Impervious Runoff Depth=6.57"
Tc=6.0 min CN=87 Runoff=15.58 cfs 1.162 af

SubcatchmentPR1C: North of Track & Runoff Area=52,363 sf 32.47% Impervious Runoff Depth=6.21"
Tc=6.0 min CN=84 Runoff=8.47 cfs 0.622 af

SubcatchmentPR2: North of Fields Runoff Area=114,758 sf 25.76% Impervious Runoff Depth=5.86"
Flow Length=1,155' Tc=12.9 min CN=81 Runoff=14.26 cfs 1.286 af

SubcatchmentPR3A: Baseball Field North Runoff Area=72,480 sf 5.79% Impervious Runoff Depth=5.74"
Tc=6.0 min CN=80 Runoff=11.01 cfs 0.796 af

SubcatchmentPR3B: Baseball Field South Runoff Area=76,054 sf 9.42% Impervious Runoff Depth=5.50"
Tc=6.0 min CN=78 Runoff=11.14 cfs 0.801 af

SubcatchmentPR3C: North of Baseball Runoff Area=34,336 sf 29.82% Impervious Runoff Depth=6.33"
Tc=6.0 min CN=85 Runoff=5.63 cfs 0.416 af

SubcatchmentPR4: Fitness Center Runoff Area=55,755 sf 81.17% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=95 Runoff=10.08 cfs 0.802 af

SubcatchmentPR5: Tennis Courts Runoff Area=46,171 sf 59.82% Impervious Runoff Depth=6.80"
Tc=6.0 min CN=89 Runoff=7.95 cfs 0.601 af

SubcatchmentPR6: Direct to Wetlands Runoff Area=31,863 sf 20.88% Impervious Runoff Depth=5.86"
Flow Length=398' Tc=15.4 min CN=81 Runoff=3.71 cfs 0.357 af

SubcatchmentPR7: South of Field Runoff Area=142,056 sf 5.95% Impervious Runoff Depth=5.15"
Flow Length=474' Tc=13.8 min CN=75 Runoff=15.36 cfs 1.400 af

Pond 1P: Track Field East Peak Elev=124.39' Storage=21,867 cf Inflow=16.63 cfs 1.227 af
Discarded=0.51 cfs 0.553 af Primary=2.22 cfs 0.674 af Outflow=2.73 cfs 1.227 af

Pond 2P: Track Field West Peak Elev=124.26' Storage=19,044 cf Inflow=15.58 cfs 1.162 af
Discarded=0.49 cfs 0.540 af Primary=3.06 cfs 0.622 af Outflow=3.56 cfs 1.162 af

Pond 3P: Detention Basin Peak Elev=119.27' Storage=46,983 cf Inflow=19.27 cfs 2.336 af
Outflow=5.27 cfs 2.331 af

Pond 4P: Baseball Field North Peak Elev=123.90' Storage=13,115 cf Inflow=11.01 cfs 0.796 af
Discarded=0.52 cfs 0.493 af Primary=1.66 cfs 0.303 af Outflow=2.17 cfs 0.796 af

Pond 5P: Baseball Field South Peak Elev=123.90' Storage=13,217 cf Inflow=11.14 cfs 0.801 af
Discarded=0.50 cfs 0.487 af Primary=1.68 cfs 0.314 af Outflow=2.18 cfs 0.801 af

Pond 6P: Infiltration Trench Peak Elev=121.92' Storage=3,944 cf Inflow=7.95 cfs 0.601 af
Discarded=0.02 cfs 0.099 af Primary=0.97 cfs 0.314 af Secondary=6.95 cfs 0.187 af Outflow=7.94 cfs 0.601 af

Link DP-1: Southeast Wetlands Inflow=39.84 cfs 6.749 af
Primary=39.84 cfs 6.749 af

Link DP-2: West Wetland Inflow=9.64 cfs 0.544 af
Primary=9.64 cfs 0.544 af

Total Runoff Area = 18.818 ac Runoff Volume = 9.469 af Average Runoff Depth = 6.04"
72.73% Pervious = 13.685 ac 27.27% Impervious = 5.133 ac

Summary for Subcatchment PR1A: Track & Field East

Runoff = 16.63 cfs @ 12.09 hrs, Volume= 1.227 af, Depth= 6.33"
Routed to Pond 1P : Track Field East

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
4,418	74	>75% Grass cover, Good, HSG C
66,353	80	>75% Grass cover, Good, HSG D
2,011	98	Paved parking, HSG C
28,562	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
101,344	85	Weighted Average
70,771		69.83% Pervious Area
30,573		30.17% Impervious Area

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

Summary for Subcatchment PR1B: Track & Field West

Runoff = 15.58 cfs @ 12.08 hrs, Volume= 1.162 af, Depth= 6.57"
Routed to Pond 2P : Track Field West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
2,296	74	>75% Grass cover, Good, HSG C
53,380	80	>75% Grass cover, Good, HSG D
16,812	98	Paved parking, HSG C
20,039	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
92,527	87	Weighted Average
55,676		60.17% Pervious Area
36,851		39.83% Impervious Area

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

Summary for Subcatchment PR1C: North of Track & Field East

Runoff = 8.47 cfs @ 12.09 hrs, Volume= 0.622 af, Depth= 6.21"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
17,445	74	>75% Grass cover, Good, HSG C
17,914	80	>75% Grass cover, Good, HSG D
7,735	98	Paved parking, HSG C
9,269	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
52,363	84	Weighted Average
35,359		67.53% Pervious Area
17,004		32.47% Impervious Area

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

Summary for Subcatchment PR2: North of Fields

Runoff = 14.26 cfs @ 12.17 hrs, Volume= 1.286 af, Depth= 5.86"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
60,546	74	>75% Grass cover, Good, HSG C
24,646	80	>75% Grass cover, Good, HSG D
17,396	98	Paved parking, HSG C
1,061	98	Paved parking, HSG D
7,942	98	Roofs, HSG C
3,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
114,758	81	Weighted Average
85,192		74.24% Pervious Area
29,566		25.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
2.7	205	0.0320	1.25		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	900	0.0060	10.38	165.02	**Pipe Channel,** 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012 Concrete pipe, finished
12.9	1,155	Total			

Summary for Subcatchment PR3A: Baseball Field North

Runoff = 11.01 cfs @ 12.09 hrs, Volume= 0.796 af, Depth= 5.74"
Routed to Pond 4P : Baseball Field North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
10,897	74	>75% Grass cover, Good, HSG C
57,390	80	>75% Grass cover, Good, HSG D
1,799	98	Paved parking, HSG C
2,394	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
72,480	80	Weighted Average
68,287		94.21% Pervious Area
4,193		5.79% Impervious Area

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

Summary for Subcatchment PR3B: Baseball Field South

Runoff = 11.14 cfs @ 12.09 hrs, Volume= 0.801 af, Depth= 5.50"
Routed to Pond 5P : Baseball Field South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
50,918	74	>75% Grass cover, Good, HSG C
17,970	80	>75% Grass cover, Good, HSG D
6,012	98	Paved parking, HSG C
1,154	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
76,054	78	Weighted Average
68,888		90.58% Pervious Area
7,166		9.42% Impervious Area

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

Summary for Subcatchment PR3C: North of Baseball Field North

Runoff = 5.63 cfs @ 12.09 hrs, Volume= 0.416 af, Depth= 6.33"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
24,097	80	>75% Grass cover, Good, HSG D
0	98	Paved parking, HSG C
10,239	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
34,336	85	Weighted Average
24,097		70.18% Pervious Area
10,239		29.82% Impervious Area

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

Summary for Subcatchment PR4: Fitness Center

Runoff = 10.08 cfs @ 12.08 hrs, Volume= 0.802 af, Depth= 7.52"
Routed to Link DP-1 : Southeast Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
387	74	>75% Grass cover, Good, HSG C
10,114	80	>75% Grass cover, Good, HSG D
246	98	Paved parking, HSG C
2,643	98	Paved parking, HSG D
946	98	Roofs, HSG C
41,419	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
55,755	95	Weighted Average
10,501		18.83% Pervious Area
45,254		81.17% Impervious Area

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

Summary for Subcatchment PR5: Tennis Courts

Runoff = 7.95 cfs @ 12.08 hrs, Volume= 0.601 af, Depth= 6.80"
Routed to Pond 6P : Infiltration Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
9,849	74	>75% Grass cover, Good, HSG C
4,487	80	>75% Grass cover, Good, HSG D
23,259	98	Paved parking, HSG C
4,361	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,938	70	Woods, Good, HSG C
277	77	Woods, Good, HSG D
46,171	89	Weighted Average
18,551		40.18% Pervious Area
27,620		59.82% Impervious Area

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

Summary for Subcatchment PR6: Direct to Wetlands

Runoff = 3.71 cfs @ 12.20 hrs, Volume= 0.357 af, Depth= 5.86"
Routed to Link DP-2 : West Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
4,521	74	>75% Grass cover, Good, HSG C
7,576	80	>75% Grass cover, Good, HSG D
4,777	98	Paved parking, HSG C
1,877	98	Paved parking, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
3,895	70	Woods, Good, HSG C
9,217	77	Woods, Good, HSG D
31,863	81	Weighted Average
25,209		79.12% Pervious Area
6,654		20.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0780	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.75"
0.1	12	0.3330	2.89		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	105	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	176	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	55	0.1020	1.60		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	398	Total			

Summary for Subcatchment PR7: South of Field

[47] Hint: Peak is 927% of capacity of segment #4

Runoff = 15.36 cfs @ 12.19 hrs, Volume= 1.400 af, Depth= 5.15"
Routed to Pond 3P : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.12"

Area (sf)	CN	Description
95,083	74	>75% Grass cover, Good, HSG C
12,977	80	>75% Grass cover, Good, HSG D
6,534	98	Paved parking, HSG C
820	98	Paved parking, HSG D
1,100	98	Roofs, HSG C
0	98	Roofs, HSG D
25,542	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
142,056	75	Weighted Average
133,602		94.05% Pervious Area
8,454		5.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.75"
0.3	23	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.8	200	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	201	0.0080	2.11	1.66	**Pipe Channel, CMP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.025 Corrugated metal
13.8	474	Total			

Summary for Pond 1P: Track Field East

[44] Hint: Outlet device #3 is below defined storage
[95] Warning: Outlet Device #4 rise exceeded
[58] Hint: Peaked 2.89' above defined flood level

Inflow Area = 2.327 ac, 30.17% Impervious, Inflow Depth = 6.33" for 100-yr event
Inflow = 16.63 cfs @ 12.09 hrs, Volume= 1.227 af
Outflow = 2.73 cfs @ 12.56 hrs, Volume= 1.227 af, Atten= 84%, Lag= 28.3 min
Discarded = 0.51 cfs @ 12.56 hrs, Volume= 0.553 af
Primary = 2.22 cfs @ 12.56 hrs, Volume= 0.674 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 124.39' @ 12.56 hrs Surf.Area= 54,991 sf Storage= 21,867 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 105.9 min calculated for 1.227 af (100% of inflow)
Center-of-Mass det. time= 105.9 min (895.9 - 790.0)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	124.00'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.50' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir X 2.00** 0 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.51 cfs @ 12.56 hrs HW=124.39' (Free Discharge)
└**2=Exfiltration** (Controls 0.51 cfs)

Primary OutFlow Max=2.22 cfs @ 12.56 hrs HW=124.39' (Free Discharge)
└**1=Culvert** (Passes 2.22 cfs of 17.68 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Passes 2.22 cfs of 7.86 cfs potential flow)
└**3=Culvert** (Outlet Controls 2.22 cfs @ 2.03 fps)

Stage-Area-Storage for Pond 1P: Track Field East

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,218
123.92	54,991	11,438
123.93	54,991	11,658
123.94	54,991	11,878
123.95	54,991	12,098
123.96	54,991	12,318
123.97	54,991	12,538
123.98	54,991	12,758
123.99	54,991	12,978
124.00	54,991	13,198
124.01	54,991	13,429
124.02	54,991	13,661
124.03	54,991	13,892
124.04	54,991	14,124
124.05	54,991	14,355
124.06	54,991	14,587
124.07	54,991	14,818
124.08	54,991	15,050
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 2P: Track Field West

[44] Hint: Outlet device #3 is below defined storage
[95] Warning: Outlet Device #4 rise exceeded
[58] Hint: Peaked 2.76' above defined flood level

Inflow Area = 2.124 ac, 39.83% Impervious, Inflow Depth = 6.57" for 100-yr event
Inflow = 15.58 cfs @ 12.08 hrs, Volume= 1.162 af
Outflow = 3.56 cfs @ 12.48 hrs, Volume= 1.162 af, Atten= 77%, Lag= 23.9 min
Discarded = 0.49 cfs @ 12.48 hrs, Volume= 0.540 af
Primary = 3.06 cfs @ 12.48 hrs, Volume= 0.622 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 124.26' @ 12.48 hrs Surf.Area= 54,991 sf Storage= 19,044 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 90.5 min calculated for 1.162 af (100% of inflow)
Center-of-Mass det. time= 90.5 min (875.0 - 784.5)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	21,932 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 54,991 cf Overall - 160 cf Embedded = 54,831 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		22,092 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	54,991	0	0
124.40	54,991	54,991	54,991

Device	Routing	Invert	Outlet Devices
#1	Primary	119.32'	**18.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.32' / 118.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 3.00** L= 488.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 119.52' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.55'	**3.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 4.4' Crest Height

Discarded OutFlow Max=0.49 cfs @ 12.48 hrs HW=124.26' (Free Discharge)
└**2=Exfiltration** (Controls 0.49 cfs)

Primary OutFlow Max=3.06 cfs @ 12.48 hrs HW=124.26' (Free Discharge)
└**1=Culvert** (Passes 3.06 cfs of 17.42 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Passes 3.06 cfs of 5.03 cfs potential flow)
└**3=Culvert** (Outlet Controls 3.06 cfs @ 1.87 fps)

Stage-Area-Storage for Pond 2P: Track Field West

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**54,991**	0
123.41	54,991	220
123.42	54,991	440
123.43	54,991	660
123.44	54,991	880
123.45	54,991	1,100
123.46	54,991	1,320
123.47	54,991	1,540
123.48	54,991	1,760
123.49	54,991	1,980
123.50	54,991	2,200
123.51	54,991	2,420
123.52	54,991	2,640
123.53	54,991	2,860
123.54	54,991	3,079
123.55	54,991	3,299
123.56	54,991	3,519
123.57	54,991	3,739
123.58	54,991	3,959
123.59	54,991	4,179
123.60	54,991	4,399
123.61	54,991	4,619
123.62	54,991	4,839
123.63	54,991	5,059
123.64	54,991	5,279
123.65	54,991	5,499
123.66	54,991	5,719
123.67	54,991	5,939
123.68	54,991	6,159
123.69	54,991	6,379
123.70	54,991	6,599
123.71	54,991	6,819
123.72	54,991	7,039
123.73	54,991	7,259
123.74	54,991	7,479
123.75	54,991	7,699
123.76	54,991	7,919
123.77	54,991	8,139
123.78	54,991	8,359
123.79	54,991	8,579
123.80	54,991	8,799
123.81	54,991	9,019
123.82	54,991	9,238
123.83	54,991	9,458
123.84	54,991	9,678
123.85	54,991	9,898
123.86	54,991	10,118
123.87	54,991	10,338
123.88	54,991	10,558
123.89	54,991	10,778
123.90	54,991	10,998
123.91	54,991	11,230
123.92	54,991	11,461
123.93	54,991	11,693
123.94	54,991	11,924
123.95	54,991	12,156
123.96	54,991	12,387
123.97	54,991	12,619
123.98	54,991	12,850
123.99	54,991	13,074
124.00	54,991	13,294
124.01	54,991	13,514
124.02	54,991	13,734
124.03	54,991	13,954
124.04	54,991	14,174
124.05	54,991	14,394
124.06	54,991	14,614
124.07	54,991	14,834
124.08	54,991	15,054
124.09	54,991	15,274
124.10	54,991	15,493
124.11	54,991	15,713
124.12	54,991	15,933
124.13	54,991	16,153
124.14	54,991	16,373
124.15	54,991	16,593
124.16	54,991	16,813
124.17	54,991	17,033
124.18	54,991	17,253
124.19	54,991	17,473
124.20	54,991	17,693
124.21	54,991	17,913
124.22	54,991	18,133
124.23	54,991	18,353
124.24	54,991	18,573
124.25	54,991	18,793
124.26	54,991	19,013
124.27	54,991	19,233
124.28	54,991	19,453
124.29	54,991	19,673
124.30	54,991	19,893
124.31	54,991	20,113
124.32	54,991	20,333
124.33	54,991	20,553
124.34	54,991	20,773
124.35	54,991	20,993
124.36	54,991	21,213
124.37	54,991	21,433
124.38	54,991	21,652
124.39	54,991	21,872
124.40	54,991	**22,092**

Summary for Pond 3P: Detention Basin

[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 0.77'

Inflow Area = 7.131 ac, 16.89% Impervious, Inflow Depth = 3.93" for 100-yr event
Inflow = 19.27 cfs @ 12.19 hrs, Volume= 2.336 af
Outflow = 5.27 cfs @ 13.35 hrs, Volume= 2.331 af, Atten= 73%, Lag= 69.7 min
Primary = 5.27 cfs @ 13.35 hrs, Volume= 2.331 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 119.27' @ 13.35 hrs Surf.Area= 18,093 sf Storage= 46,983 cf

Plug-Flow detention time= 293.8 min calculated for 2.331 af (100% of inflow)
Center-of-Mass det. time= 292.6 min (1,112.3 - 819.7)

Volume	Invert	Avail.Storage	Storage Description
#1	116.00'	70,860 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	11,268	467.0	0	0	11,268
117.00	12,694	487.0	11,974	11,974	12,860
118.00	15,214	532.0	13,935	25,909	16,544
119.00	17,446	574.0	16,317	42,226	20,282
120.00	19,925	601.0	18,672	60,898	22,874
120.50	19,925	601.0	9,963	70,860	23,174

Device	Routing	Invert	Outlet Devices
#1	Device 2	116.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	116.00'	**12.0" Round Culvert** L= 15.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 116.00' / 115.48' S= 0.0347 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Device 2	119.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.27 cfs @ 13.35 hrs HW=119.27' (Free Discharge)
└**2=Culvert** (Passes 5.27 cfs of 6.29 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 1.64 cfs @ 8.36 fps)
  └**3=Orifice/Grate** (Weir Controls 3.62 cfs @ 1.69 fps)

Stage-Area-Storage for Pond 3P: Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
116.00	11,268	0
116.05	11,337	565
116.10	11,407	1,134
116.15	11,476	1,706
116.20	11,546	2,281
116.25	11,617	2,860
116.30	11,687	3,443
116.35	11,757	4,029
116.40	11,828	4,619
116.45	11,899	5,212
116.50	11,970	5,809
116.55	12,042	6,409
116.60	12,113	7,013
116.65	12,185	7,620
116.70	12,257	8,231
116.75	12,330	8,846
116.80	12,402	9,464
116.85	12,475	10,086
116.90	12,548	10,712
116.95	12,621	11,341
117.00	12,694	11,974
117.05	12,815	12,612
117.10	12,936	13,255
117.15	13,057	13,905
117.20	13,180	14,561
117.25	13,303	15,223
117.30	13,426	15,891
117.35	13,550	16,566
117.40	13,675	17,246
117.45	13,800	17,933
117.50	13,925	18,626
117.55	14,052	19,326
117.60	14,179	20,032
117.65	14,306	20,744
117.70	14,434	21,462
117.75	14,563	22,187
117.80	14,692	22,918
117.85	14,821	23,656
117.90	14,952	24,401
117.95	15,083	25,152
118.00	15,214	25,909
118.05	15,322	26,672
118.10	15,430	27,441
118.15	15,539	28,215
118.20	15,648	28,995
118.25	15,758	29,780
118.30	15,868	30,571
118.35	15,978	31,367
118.40	16,088	32,169
118.45	16,200	32,976
118.50	16,311	33,789
118.55	16,423	34,607
118.60	16,535	35,431
118.65	16,647	36,260
118.70	16,760	37,096
118.75	16,874	37,936
118.80	16,987	38,783
118.85	17,101	39,635
118.90	17,216	40,493
118.95	17,331	41,357
119.00	17,446	42,226
119.05	17,566	43,101
119.10	17,686	43,983
119.15	17,807	44,870
119.20	17,929	45,764
119.25	18,050	46,663
119.30	18,172	47,569
119.35	18,295	48,480
119.40	18,418	49,398
119.45	18,541	50,322
119.50	18,665	51,252
119.55	18,789	52,189
119.60	18,914	53,131
119.65	19,039	54,080
119.70	19,164	55,035
119.75	19,290	55,996
119.80	19,416	56,964
119.85	19,543	57,938
119.90	19,670	58,918
119.95	19,797	59,905
120.00	**19,925**	60,898
120.05	19,925	61,894
120.10	19,925	62,890
120.15	19,925	63,887
120.20	19,925	64,883
120.25	19,925	65,879
120.30	19,925	66,875
120.35	19,925	67,872
120.40	19,925	68,868
120.45	19,925	69,864
120.50	19,925	**70,860**

Summary for Pond 4P: Baseball Field North

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.40' above defined flood level

Inflow Area = 1.664 ac, 5.79% Impervious, Inflow Depth = 5.74" for 100-yr event
Inflow = 11.01 cfs @ 12.09 hrs, Volume= 0.796 af
Outflow = 2.17 cfs @ 12.52 hrs, Volume= 0.796 af, Atten= 80%, Lag= 26.3 min
Discarded = 0.52 cfs @ 12.52 hrs, Volume= 0.493 af
Primary = 1.66 cfs @ 12.52 hrs, Volume= 0.303 af
Routed to Link DP-1 : Southeast Wetlands

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.90' @ 12.52 hrs Surf.Area= 66,230 sf Storage= 13,115 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 94.4 min calculated for 0.796 af (100% of inflow)
Center-of-Mass det. time= 94.4 min (896.8 - 802.3)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.40'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.52 cfs @ 12.52 hrs HW=123.90' (Free Discharge)
└**2=Exfiltration** (Controls 0.52 cfs)

Primary OutFlow Max=1.66 cfs @ 12.52 hrs HW=123.90' (Free Discharge)
└**1=Culvert** (Passes 1.66 cfs of 11.24 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 1.66 cfs @ 2.10 fps)
└**3=Culvert** (Passes 1.66 cfs of 2.80 cfs potential flow)

Stage-Area-Storage for Pond 4P: Baseball Field North

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 5P: Baseball Field South

[44] Hint: Outlet device #3 is below defined storage
[58] Hint: Peaked 2.40' above defined flood level

Inflow Area = 1.746 ac, 9.42% Impervious, Inflow Depth = 5.50" for 100-yr event
Inflow = 11.14 cfs @ 12.09 hrs, Volume= 0.801 af
Outflow = 2.18 cfs @ 12.53 hrs, Volume= 0.801 af, Atten= 80%, Lag= 26.5 min
Discarded = 0.50 cfs @ 12.53 hrs, Volume= 0.487 af
Primary = 1.68 cfs @ 12.53 hrs, Volume= 0.314 af
Routed to Pond 3P : Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 123.90' @ 12.53 hrs Surf.Area= 66,230 sf Storage= 13,217 cf
Flood Elev= 121.50' Storage= 0 cf

Plug-Flow detention time= 96.2 min calculated for 0.800 af (100% of inflow)
Center-of-Mass det. time= 96.2 min (903.1 - 806.9)

Volume	Invert	Avail.Storage	Storage Description
#1	123.40'	26,428 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 66,230 cf Overall - 160 cf Embedded = 66,070 cf x 40.0% Voids
#2	123.90'	160 cf	**12.0" W x 1.0" H Box Pipe Storage** x 16 Inside #1 L= 120.0'
		26,588 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.40	66,230	0	0
124.40	66,230	66,230	66,230

Device	Routing	Invert	Outlet Devices
#1	Primary	121.40'	**18.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.40' / 120.40' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Discarded	123.40'	**0.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 121.00'
#3	Device 4	122.00'	**10.0" Round Culvert X 2.00** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 122.00' / 121.50' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#4	Device 1	123.50'	**2.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s) 2.3' Crest Height

Discarded OutFlow Max=0.50 cfs @ 12.53 hrs HW=123.90' (Free Discharge)
└**2=Exfiltration** (Controls 0.50 cfs)

Primary OutFlow Max=1.68 cfs @ 12.53 hrs HW=123.90' (Free Discharge)
└**1=Culvert** (Passes 1.68 cfs of 11.25 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 1.68 cfs @ 2.11 fps)
└**3=Culvert** (Passes 1.68 cfs of 2.81 cfs potential flow)

Stage-Area-Storage for Pond 5P: Baseball Field South

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
123.40	**66,230**	0
123.41	66,230	265
123.42	66,230	530
123.43	66,230	795
123.44	66,230	1,060
123.45	66,230	1,325
123.46	66,230	1,590
123.47	66,230	1,854
123.48	66,230	2,119
123.49	66,230	2,384
123.50	66,230	2,649
123.51	66,230	2,914
123.52	66,230	3,179
123.53	66,230	3,444
123.54	66,230	3,709
123.55	66,230	3,974
123.56	66,230	4,239
123.57	66,230	4,504
123.58	66,230	4,769
123.59	66,230	5,033
123.60	66,230	5,298
123.61	66,230	5,563
123.62	66,230	5,828
123.63	66,230	6,093
123.64	66,230	6,358
123.65	66,230	6,623
123.66	66,230	6,888
123.67	66,230	7,153
123.68	66,230	7,418
123.69	66,230	7,683
123.70	66,230	7,948
123.71	66,230	8,213
123.72	66,230	8,477
123.73	66,230	8,742
123.74	66,230	9,007
123.75	66,230	9,272
123.76	66,230	9,537
123.77	66,230	9,802
123.78	66,230	10,067
123.79	66,230	10,332
123.80	66,230	10,597
123.81	66,230	10,862
123.82	66,230	11,127
123.83	66,230	11,392
123.84	66,230	11,656
123.85	66,230	11,921
123.86	66,230	12,186
123.87	66,230	12,451
123.88	66,230	12,716
123.89	66,230	12,981
123.90	66,230	13,246
123.91	66,230	13,522
123.92	66,230	13,799
123.93	66,230	14,075
123.94	66,230	14,352
123.95	66,230	14,628
123.96	66,230	14,905
123.97	66,230	15,181
123.98	66,230	15,458
123.99	66,230	15,726
124.00	66,230	15,991
124.01	66,230	16,256
124.02	66,230	16,521
124.03	66,230	16,786
124.04	66,230	17,051
124.05	66,230	17,316
124.06	66,230	17,581
124.07	66,230	17,846
124.08	66,230	18,111
124.09	66,230	18,375
124.10	66,230	18,640
124.11	66,230	18,905
124.12	66,230	19,170
124.13	66,230	19,435
124.14	66,230	19,700
124.15	66,230	19,965
124.16	66,230	20,230
124.17	66,230	20,495
124.18	66,230	20,760
124.19	66,230	21,025
124.20	66,230	21,290
124.21	66,230	21,555
124.22	66,230	21,819
124.23	66,230	22,084
124.24	66,230	22,349
124.25	66,230	22,614
124.26	66,230	22,879
124.27	66,230	23,144
124.28	66,230	23,409
124.29	66,230	23,674
124.30	66,230	23,939
124.31	66,230	24,204
124.32	66,230	24,469
124.33	66,230	24,734
124.34	66,230	24,998
124.35	66,230	25,263
124.36	66,230	25,528
124.37	66,230	25,793
124.38	66,230	26,058
124.39	66,230	26,323
124.40	66,230	**26,588**

Summary for Pond 6P: Infiltration Trench

Inflow Area = 1.060 ac, 59.82% Impervious, Inflow Depth = 6.80" for 100-yr event
Inflow = 7.95 cfs @ 12.08 hrs, Volume= 0.601 af
Outflow = 7.94 cfs @ 12.09 hrs, Volume= 0.601 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.02 cfs @ 4.87 hrs, Volume= 0.099 af
Primary = 0.97 cfs @ 12.09 hrs, Volume= 0.314 af
Routed to Link DP-1 : Southeast Wetlands
Secondary = 6.95 cfs @ 12.09 hrs, Volume= 0.187 af
Routed to Link DP-2 : West Wetland

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.92' @ 12.09 hrs Surf.Area= 3,375 sf Storage= 3,944 cf

Plug-Flow detention time= 224.8 min calculated for 0.601 af (100% of inflow)
Center-of-Mass det. time= 224.8 min (1,003.4 - 778.6)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	4,050 cf	**5.00'W x 135.00'L x 3.00'H Prismatoid**x 5 10,125 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Secondary	121.80'	**50.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	119.00'	**0.270 in/hr Exfiltration over Surface area**
#3	Primary	121.00'	**6.0" Round 6" Perf Pipe** L= 150.0' Ke= 0.200 Inlet / Outlet Invert= 121.00' / 118.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 4.87 hrs HW=119.03' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.97 cfs @ 12.09 hrs HW=121.92' (Free Discharge)
↑**3=6" Perf Pipe** (Inlet Controls 0.97 cfs @ 4.93 fps)

Secondary OutFlow Max=6.91 cfs @ 12.09 hrs HW=121.92' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 6.91 cfs @ 1.14 fps)

Stage-Area-Storage for Pond 6P: Infiltration Trench

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
119.00	**3,375**	0
119.05	3,375	67
119.10	3,375	135
119.15	3,375	203
119.20	3,375	270
119.25	3,375	338
119.30	3,375	405
119.35	3,375	472
119.40	3,375	540
119.45	3,375	608
119.50	3,375	675
119.55	3,375	742
119.60	3,375	810
119.65	3,375	878
119.70	3,375	945
119.75	3,375	1,013
119.80	3,375	1,080
119.85	3,375	1,147
119.90	3,375	1,215
119.95	3,375	1,283
120.00	3,375	1,350
120.05	3,375	1,417
120.10	3,375	1,485
120.15	3,375	1,553
120.20	3,375	1,620
120.25	3,375	1,688
120.30	3,375	1,755
120.35	3,375	1,822
120.40	3,375	1,890
120.45	3,375	1,958
120.50	3,375	2,025
120.55	3,375	2,092
120.60	3,375	2,160
120.65	3,375	2,228
120.70	3,375	2,295
120.75	3,375	2,363
120.80	3,375	2,430
120.85	3,375	2,497
120.90	3,375	2,565
120.95	3,375	2,633
121.00	3,375	2,700
121.05	3,375	2,767
121.10	3,375	2,835
121.15	3,375	2,903
121.20	3,375	2,970
121.25	3,375	3,038
121.30	3,375	3,105
121.35	3,375	3,172
121.40	3,375	3,240
121.45	3,375	3,308
121.50	3,375	3,375
121.55	3,375	3,442
121.60	3,375	3,510
121.65	3,375	3,578
121.70	3,375	3,645
121.75	3,375	3,713
121.80	3,375	3,780
121.85	3,375	3,847
121.90	3,375	3,915
121.95	3,375	3,983
122.00	3,375	**4,050**

Summary for Link DP-1: Southeast Wetlands

Inflow Area = 18.086 ac, 27.53% Impervious, Inflow Depth = 4.48" for 100-yr event
Inflow = 39.84 cfs @ 12.10 hrs, Volume= 6.749 af
Primary = 39.84 cfs @ 12.10 hrs, Volume= 6.749 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-2: West Wetland

Inflow Area = 0.731 ac, 20.88% Impervious, Inflow Depth = 8.93" for 100-yr event
Inflow = 9.64 cfs @ 12.10 hrs, Volume= 0.544 af
Primary = 9.64 cfs @ 12.10 hrs, Volume= 0.544 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Standard 4

Long Term Pollution Prevention Plan & Operation and Maintenance Plan

OPERATION AND MAINTENANCE
&
LONG TERM POLLUTION PREVENTION PLAN
FOR POST-CONSTRUCTION STORM WATER CONTROLS

NORTHERN ESSEX COMMUNITY COLLEGE
ATHLETIC FIELD IMPROVEMENTS
HAVERHILL, MASSACHUSETTS

APRIL 15, 2026

GENERAL

The Best Management Practices (BMPs) used in the design of the Northern Essex Community College (NECC) Athletic Field project were chosen for their effectiveness at reducing peak discharge, treating the required Water Quality Volume for total suspended solids (TSS), and infiltrating groundwater. Routine maintenance is required for the BMPs, as proper maintenance is essential in achieving the desired result of improved water quality.

This Operations and Maintenance (O&M) and Long-Term Pollution Prevention Plan (LTPPP) is intended to cover the post-construction maintenance of the permanent BMPs[1] and site-specific pollution prevention.

MAINTENANCE REQUIREMENTS

Qualified personnel shall inspect all components of the stormwater management system as outlined below. To be considered "qualified", personnel should have a working knowledge of the maintenance requirements of storm water BMP's and must be approved by NECC. Qualified personnel shall be responsible for overseeing the required inspections and shall file annual reports with the City of Haverhill officials. Additionally, a copy of the Inspection/Maintenance Log, as further described herein, shall be provided to City of Haverhill officials on an annual basis, as required.

SUMMARY OF MAINTENANCE REQUIREMENTS

BMP	MIN. FREQUENCY	RESPONSIBLE PARTY
Road & Walkway Sweeping	once/quarter	NECC
Trash Removal	Inspect once/month Clean as necessary	NECC
Catch Basins	Inspect 4x/year Clean once/year	NECC
Turf Field	Inspect 4x/year Clean as necessary	NECC

[1] Operations and maintenance of temporary erosion and sedimentation controls utilized during construction will be covered by a *Stormwater Pollution Prevention Plan* as required by the National Pollutant Discharge Elimination System program of the Environmental Protection Agency, and is not part of this O&M Plan.

RESPONSIBILITY TO ADMINISTER O&M PLAN

During construction, the general contractor will be responsible for maintaining the stormwater management system in accordance with this O&M Plan until such time that ownership of the project or phases thereof are turned over to the owner. The owner is then responsible for maintaining the portions of the stormwater management system under their ownership in accordance with this O&M Plan. This section below (names and signatures) shall be updated with every change in ownership and/or person(s) responsible for administering/financing the O&M of the system.

Owner(s) of the stormwater management system:

Name: _____ Name: _____

Signature: _____ Signature: _____

Person(s) responsible for financing maintenance and emergency repairs:

_____

_____

INSPECTION AND MAINTENANCE LOG

A sample inspection and maintenance log to be used is attached to the end of this O&M Plan. At a minimum, any inspection and maintenance log used shall include the following items:

- Date activity performed
- Specific inspection/maintenance task
- Structural components inspected/maintained
- Staff person or contractor performing activity
- Supervisor verification of maintenance activity
- Recommended additional maintenance tasks

An Annual Report shall be submitted to the City of Haverhill to meet the requirements of the city's Stormwater Management and Erosion Control Regulations.

PROPOSED BMPS AND CORRESPONDING O&M REQUIREMENTS:

ROAD AND WALKAY SWEEPING:

Sweeping of impervious surfaces shall be conducted once per quarter. All sweepings shall be handled and disposed of in accordance with applicable local, state and federal guidelines and regulations.

TRASH REMOVAL:

The field areas shall be inspected for litter and trash monthly as part of overall site maintenance. Any accumulated trash, litter and discarded materials in these areas shall be removed.

No disposal of materials will be permitted within the landscaped areas or wooded areas on the Site. This prohibition applies to trash, fill material, construction debris, grass clippings, collected leaves and cut branches.

CATCH BASINS:

The catch basins shall be inspected four times per year for build-up of sediment, oil, and/or other debris which could decrease the effectiveness of the sumps. A qualified company specializing in the cleaning of catch basins shall perform the inspection of catch basins.

Typically, a dipstick tube equipped with a ball valve, such as a Sludge Judge®, is used to measure the approximate oil and sediment depth, and a vacuum truck is used to clean out the catch basin. Catch basins shall be cleaned once per year, or sooner if the depth of sediment is found to reach 12 inches. If visual inspection observes any evidence of hydrocarbons, the material shall be immediately cleaned and disposed of in accordance with all applicable local, state and federal guidelines and regulations.

As part of the inspection, catch basins should be inspected for structural soundness. Hoods and associated hardware should be inspected to ensure that they are correctly attached and functioning properly. Catch basins shall be repaired or replaced as necessary to ensure proper operation.

Frames and grates should be inspected and repaired or replaced as necessary to ensure proper operations.

SYNTHETIC SPORTS FIELD:

The groundwater recharge system consists of a bed of crushed stone located under the field surface. The purpose of the bed is to infiltrate stormwater runoff back into the groundwater, and as such it is important to preserve the integrity of the field surface.

It is important to occasionally inspect the field to ensure it will continue to function efficiently for the long term. The owner should complete the required maintenance as recommended by the manufacturer of the field components.

The field should be inspected annually. If the inspection determines that the field fails to fully drain within 72 hours of a storm event, the party responsible shall retain a qualified engineer to assess the reason for infiltration failure and to recommend corrective action for restoring infiltration function.

The 400-meter track and field includes a perimeter trench drain with eight sump outlets and

baskets to catch debris before it enters the drainage system. The sumps and baskets must be inspected quarterly and cleaned of any debris. A visual inspection shall include reporting any debris or sediment observed in the pipe.

The subsurface drainage system for the synthetic turf field is a closed system. Stormwater must pass through several layers of Mirafi 140N filter fabric before entering the infiltration field. However, the subsurface drainage system for the turf field includes four Nyloplast manholes. Each manhole has a removable turf cover that allows for visual inspection of the manhole, weir, and sump as necessary. The catch basin and sumps must be inspected quarterly and cleaned of any debris. Visual inspections shall include reporting any debris or sediments observed in the sump.

DRAIN MANHOLES

Inspect drainage manhole locations monthly for the first three months after construction to ensure proper functioning and correct any areas that have settled or experienced washouts. Inspect drain manholes annually after initial three-month period. Annual inspections should be supplemented after large storms, when washouts may occur.

DETENTION BASIN

- Detention basins should be inspected at least twice a year to ensure proper stabilization and function.
- Light equipment, which will not compact the underlying soil, should be used to remove the top layer. Inspect extended dry detention basins at least once per year to ensure that the basins are operating as intended.
- Inspect detention basins during and after major storms to determine if the basin is meeting the expected detention times.
- Examine the outlet structure for evidence of clogging or outflow release velocities that are greater than design flow. Potential problems that should be checked include: subsidence, erosion, cracking or tree growth on the embankment; damage to the emergency spillway; sediment accumulation around the outlet; inadequacy of the inlet/outlet channel erosion control measures; changes in the condition of the pilot channel; and erosion within the basin and banks. Make any necessary repairs immediately.
- During inspections, note any changes to the extended dry detention basin or the contributing watershed, because these could affect basin performance.
- Mow the upper-stage, side slopes, embankment, and emergency spillway at least twice per year. Also remove trash and debris at this time.
- Remove sediment from the extended dry detention basin as necessary, but at least once every 5 years. Providing an on-site sediment disposal area will reduce the overall sediment removal costs.

STORMWATER OUTFALLS

- Inspect outfall locations monthly for the first three months after construction to ensure proper functioning and correct any areas that have settled or experienced washouts.

- Inspect outfalls annually after initial three month period.
- Annual inspections should be supplemented after large storms, when washouts may occur.

INFILTRATION TRENCH

- Inspect and clean pretreatment BMPs every six months and after every major storm event (2 year return frequency). Check inlet and outlet pipes to determine if they are clogged. Remove accumulated sediment, trash, debris, leaves and grass clippings from mowing. Remove tree seedlings, before they become firmly established.
- Inspect the infiltration trench after the first several rainfall events, after all major storms, and on regularly scheduled dates every six months. If the top of the trench is grassed, it must be mowed on a seasonal basis. Grass height must be maintained to be no more than four inches. Routinely remove grass clippings leaves and accumulated sediment from the surface of the trench.

CONTECH STC 450i WATER QUALITY UNIT

The Contech STC 450i Water Quality Unit targets hydrocarbons and total suspended solids (TSS) in stormwater runoff. It improves water quality by removing contaminants through the gravitational settling of fine sediments and floatation of hydrocarbons while preventing the re-suspension or scour of previously captured pollutants. CDS Units shall be inspected monthly and maintained quarterly or as necessary.

LONG TERM POLLUTION PREVENTION:

MAINTENANCE OF LANDSCAPED AREAS:

Fertilizers used for landscaping and lawn areas shall be slow release, low-nitrogen types (<5%) and shall not be used within 25 feet of a wetland resource area, and pesticides/herbicides shall not be used within 100 feet of a wetland resource area. Furthermore, the use of any fertilizers, pesticides, and herbicides shall be in accordance with the manufacturer's recommendations.

WINTER MAINTENANCE OF WALKS AND DRIVES:

Snow storage shall take place on pervious surfaces to the extent practicable to allow the snowmelt to filter through the soil, leaving behind sand and debris that can be removed in the springtime. Snow shall not be stockpiled in drainage collection areas or conveyance channels as this may block the system causing flooding. Furthermore, snow shall not be stored in or within 25 feet of a wetland resource area. No road salt, sodium chloride, or other deicing chemicals shall be used on paved surfaces within 25 feet of a wetland resource area.

STORAGE OF WASTE PRODUCTS:

Any outdoor storage of waste products shall be covered to prevent rainfall from picking up contaminants from the waste. This requirement should include any dumpster(s) which shall

have the lid(s) closed when not being loaded or unloaded.

ILLICIT DISCHARGES:

There shall be no illicit discharges to the stormwater management system. Illicit discharges are defined by 310 CMR 10.04 as follows:

"Illicit discharge means a discharge that is not entirely comprised of stormwater. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated ground water, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents."
Prior to the discharge of stormwater runoff to the post-construction stormwater best management practices, an Illicit Discharge Compliance Statement shall be submitted to the Haverhill Conservation Commission verifying that no illicit discharges exist on the site.

EMERGENCY SPILLS

The owner shall provide personnel with a list of emergency contact phone numbers to use to report a spill. At a minimum the list should include the DEP Emergency Response Section, an environmental cleanup contractor such as Clean Harbors, Inc., the Haverhill Fire Department, and a contact person/phone number for the owner:

- DEP Emergency Response **1(888)304-1133**
- Clean Harbors, Inc. **1(800)645-8265**
- Haverhill Fire Department **911 or (978) 373-3833**
- Owner (Northern Essex Community College) **(978) 556-3922**

While the above-listed phone numbers are current as of the writing of this O&M Plan, the owner shall be responsible for verifying these numbers prior to distribution to the homeowners. Additionally, the owner shall update and redistribute a list of emergency contact phone numbers to the homeowners every other year, or sooner should any changes occur.

STORMWATER MANAGEMENT SYSTEM INSPECTION/MAINTENANCE LOG
Northern Essex Community College Lower Field

Date: _____

Name: _____

Supervisor Sign off: _____

STRUCTURAL COMPONENT	SPECIFIC MAINTENANCE OR INSPECTION TASK	REPAIR NEEDED?	RECOMMENDED ADDITIONAL MAINTENANCE AND COMMENTS

Water Quality Volume, Sediment Forebay Sizing and Phosphorous Removal

PR1A - 1P Required Water Quality Volume

Total Imp Area = 30,573 sf
Runoff Depth= 1 in
WQV = Impervious Area x Runoff Depth =116,963 sf x 1in x (1 ft/12 in)
WQV = 2,548 cf

PR1A - 1P Provided Water Quality Volume

Track Field= **3,095 cf** (Volume of gravel reservoir below weir)

PR1B - 2P Required Water Quality Volume

Total Imp Area = 36,851 sf
Runoff Depth= 1 in
WQV = Impervious Area x Runoff Depth =116,963 sf x 1in x (1 ft/12 in)
WQV = 3,071 cf

PR1B - 2P Provided Water Quality Volume

Track Field= **3,095 cf** (Volume of gravel reservoir below weir)

PR3A - 4P Required Water Quality Volume

Total Imp Area = 4,193 sf
Runoff Depth= 1 in
WQV = Impervious Area x Runoff Depth =116,963 sf x 1in x (1 ft/12 in)
WQV = 349 cf

PR3A - 4P Provided Water Quality Volume

Baseball Field= **2,649 cf** (Volume of gravel reservoir below weir)

PR3B - 5P Required Water Quality Volume

Total Imp Area = 7,166 sf
Runoff Depth= 1 in
WQV = Impervious Area x Runoff Depth =116,963 sf x 1in x (1 ft/12 in)
WQV = 597 cf

PR3B - 5P Provided Water Quality Volume

Baseball Field= **2,649 cf** (Volume of gravel reservoir below weir)

PR5 - 6P Required Water Quality Volume

Total Imp Area = 27,620 sf
Runoff Depth= 1 in
WQV = Impervious Area x Runoff Depth =116,963 sf x 1in x (1 ft/12 in)
WQV = 2,302 cf

PR5 - 6P Provided Water Quality Volume

Infiltration Trench= **2,700 cf** (Volume of trench below perforated pipe)

Sediment Forebay Size

Total Imp Area =	52,465 sf	(Impervious area to surface detention basin)
Runoff Depth=	0.1 in	
Required Forebay Volume =	Impervious Area x Runoff Depth =116,963 sf x 0.1in x (1 ft/12 in)	
Required Forebay Volume =	437 cf	
Provided =	**690 cf**	

Required TSS and Phosphorus Removal

Total Imp Area =	116,963 sf	
Runoff Depth=	1 in	
TSS &TP =	Impervious Area x Runoff Depth =116,963 sf x 1in x (1 ft/12 in)	
TSS &TP =	9,747 cf	

Provided TSS and Phosphorus Removal

Baseball Field=	5,298 cf	(Volume of gravel reservoir below weir)
Track Field=	6,190 cf	(Volume of gravel reservoir below weir)
Inf Trench=	2,700 cf	
TSS & TP =	11,488 cf	

Total Suspended Solid (TSS Removal) Worksheets

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR1A - Track & Field East

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Trench	**0.80**	**1.00**	**0.80**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**

Total TSS Removal = **80%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR1B - Tack & Field West

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Trench	0.80	1.00	0.80	0.20
Sediment Forebay	0.25	0.20	0.05	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15

Total TSS Removal = 85%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR3A - Baseball Field North

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Trench	**0.80**	**1.00**	**0.80**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**

Total TSS Removal = **80%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR3B - Baseball Field South

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Trench	**0.80**	**1.00**	**0.80**	**0.20**
Sediment Forebay	**0.25**	**0.20**	**0.05**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**

Total TSS Removal = **85%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR3C - North of Baseball Field

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
WQU 306	0.75	0.75	0.56	0.19
	0.00	0.19	0.00	0.19
	0.00	0.19	0.00	0.19
	0.00	0.19	0.00	0.19

Total TSS Removal = 81%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed

1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR4 - Fitness Center

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Rain Garden	**0.90**	**1.00**	**0.90**	**0.10**
	0.00	**0.10**	**0.00**	**0.10**
	0.00	**0.10**	**0.00**	**0.10**
	0.00	**0.10**	**0.00**	**0.10**
	0.00	**0.10**	**0.00**	**0.10**

Total TSS Removal = **90%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed

1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR5 - Tennis Courts

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Trench	**0.80**	**1.00**	**0.80**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**
	0.00	**0.20**	**0.00**	**0.20**

Total TSS Removal = **80%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: PR7 - South of Fields

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
WQU 306	0.75	0.75	0.56	0.19
Sediment Forebay	0.25	0.19	0.05	0.14
	0.00	0.14	0.00	0.14
	0.00	0.14	0.00	0.14

Total TSS Removal = 86%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: NECC Athletic Fields
Prepared By: CG
Date: 2/26/2026 rev 4/19/2026

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed

1. From MassDEP Stormwater Handbook Vol. 1

STC 450i Sizing Reports

Standard 8

Recommended Construction Period Pollution Prevention and Erosion and Sedimentation Controls

Construction Practices Maintenance/Evaluation Checklist

Standard 9

Operation and Maintenance Log

Drainage Operation and Maintenance Log

Site Maintenance Supervisor:_____ Date:_____

Routine △ Response to Rainfall Event____in △ Other _____

BMP	Frequency	Date Performed	Comments
Catch Basins and Drain Manholes	Inspect Quarterly		
	Clean as necessary		
Stormceptor STC450i	Monthly for first 3 months/Bi-annually after		
	Maintenance Quarterly and as necessary		
Pavement Areas (parking, driveways, service areas)	Monthly Sweeping		
	Trash & Litter Removal as necessary		
Landscaped & Vegetated Areas	Maintenance as necessary		
Tideflex Checkmate Inline Check Valve	Annual Inspections		
Infiltration Trench	Bi-Annual Inspections		
Detention Basin	Bi-Annual Inspections		
	Mow twice a year		
Turf Fields	Inspect Quarterly		
	Clean as necessary		

Inspection Form

Contech STC 450i Maintenance Guide

Checkmate Maintenance Guide

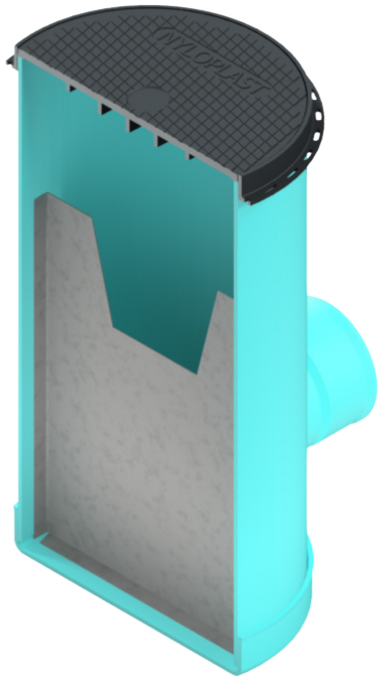
Nyloplast Weir Guide

Weir Structure

The Weir Structure is a Nyloplast® PVC or HP Polypropylene Basin with a panel or plate device secured inside the structure. The weir structures are manufactured to the precise plan design specifications and sent to the job site ready to install.

How the Weir Structure works?

- Stormwater flows into the Nyloplast PVC or HP Storm Manhole structure
- Water flow is diverted from the catch basin outlet, typically to a water quality device, to capture pollutants during the “first flush” of a storm event
- Weir Structure may also serve to restrict or regulate the flow of water exiting the drainage system. The restriction is determined by weir height and/or the orifice hole size in the weir plate

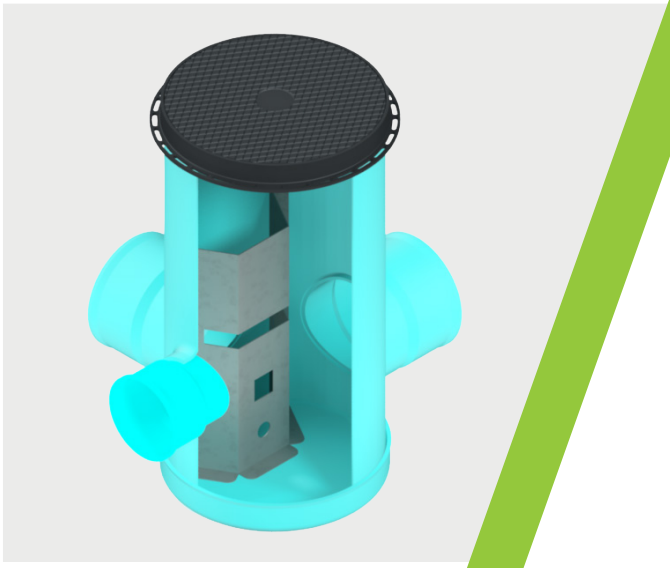


Benefits

- Simple and effective method to control water flow into a stormwater management system or water quality device
- Enhances ability of a water quality device to capture pollutants from storm event
- Allows for flexibility to re-direct water flow during a high-flow event
- Weir Structures can be customized for site-specific needs, including “key way slot” and “v-notch” weir designs, and high flow or low flow orifice hole designs to further regulate the flow of stormwater

Product Information

- Available for 24”, 30”, 36” and 48” (600, 750, 900 and 1200 mm) diameter HP Polypropylene Basin
- For use with 4”-36” (100-900 mm) watertight pipe connections
- Minimum sumps are required in Weir Structures
- Key measure is finish grade to top of weir device in drain basin
- Orifice hole diameter/placement based on direction from project engineer.



ADS Nyloplast™

adspipe.com

1-800-821-6710

Standard 10

Illicit Discharge Statement

Geotech Report

Pipe Sizing

				NECC Athletic Field Renovations (25-yr Storm)					PREPARED BY : BRENNAN CONSULTING				
									JOB NO 25527	BY: CG		DATE: 2/26/2026	
Outlet Structure	Drainage Area (acres)	Rainfall Intensity (in/hr)	Rational Coefficient	Peak Discharge (cfs)	Outlet Pipe Size (in)	Pipe Area (sf)	Wetted Perimeter (ft)	Hydraulic Radius (ft)	Manning's n	Pipe Slope (ft/ft)	Velocity (ft/s)	Capacity (cfs)	Peak Discharge (cfs)
CB 305A	0.38	6.3	0.66	1.56	12	0.787	3.14	0.251	0.012	0.01210	5.41	**4.26**	**1.56**
WQU 305	N/A	6.3	0.15	1.56	12	0.787	3.14	0.251	0.012	0.01010	4.95	**3.89**	**1.56**
AD 304	0.35	6.3	0.30	0.66	12	0.787	3.14	0.251	0.012	0.02400	7.62	**6.00**	**0.66**
FLD 306	N/A	6.3	N/A	0.82	18	1.771	4.71	0.376	0.012	0.01170	6.98	**12.35**	**0.82**
DMH 303	N/A	6.3	N/A	3.04	24	3.149	6.28	0.501	0.012	0.01120	8.27	**26.03**	**3.04**
CB 302A	0.89	6.3	0.33	1.83	12	0.787	3.14	0.251	0.012	0.01340	5.70	**4.48**	**1.83**
WQU 302	N/A	6.3	0.85	1.83	12	0.787	3.14	0.251	0.012	0.01040	5.02	**3.95**	**1.83**
DMH 301	N/A	6.3	N/A	4.87	24	3.149	6.28	0.501	0.012	0.01150	8.38	**26.38**	**4.87**
FLD 205	N/A	6.3	0.87	0.81	18	1.771	4.71	0.376	0.012	0.02320	9.82	**17.40**	**0.81**
CB 204A	0.18	6.3	0.42	0.48	12	0.787	3.14	0.251	0.012	0.01530	6.09	**4.79**	**0.48**
WQU 204	N/A	6.3	0.42	0.48	12	0.787	3.14	0.251	0.012	0.01010	4.95	**3.89**	**0.48**
DMH 203	N/A	6.3	N/A	1.29	18	1.771	4.71	0.376	0.012	0.01110	6.79	**12.03**	**1.29**
FLD 202	N/A	6.3	N/A	2.45	18	1.771	4.71	0.376	0.012	0.01100	6.76	**11.98**	**2.45**
DMH 201	N/A	6.3	N/A	3.74	24	3.149	6.28	0.501	0.012	0.01170	8.45	**26.61**	**3.74**
EX 2	0.76	6.3	0.50	2.41	12	0.787	3.14	0.251	0.012	0.03490	9.19	**7.24**	**2.41**
DMH 402	0.76	6.3	N/A	2.41	12	0.787	3.14	0.251	0.012	0.01120	5.21	**4.10**	**2.41**
DMH 401	0.76	6.3	N/A	2.41	12	0.787	3.14	0.251	0.012	0.01020	4.97	**3.91**	**2.41**
DMH 400	1.16	6.3	0.57	4.15	18	1.771	4.71	0.376	0.012	0.01250	7.21	**12.77**	**4.15**