September 6, 2019

Town of Parsonsfield
Attn: Planning Board
634 North Road
Parsonsfield, Maine 04047
planning@parsonsfield.org

Re: Watson Woods Subdivision – Peer Review

Dear Planning Board Members:

Per your request, CES, Inc. (CES) reviewed sections of the Watson Woods Subdivision Application prepared by Walsh Engineering Associates, Inc. Specifically, we were asked to review the following sections of the application for conformance with the Town of Parsonsfield Subdivision Ordinance:

- High Intensity Soil Survey
- Stormwater Management Plan
- Landscape Plan
- Wildlife Impact Study
- Sight Distance measurements at proposed driveways

We have reviewed the Final Application submission materials relative to the above sections, along with the Subdivision Ordinance requirements related to these sections. We have also measured the site distances at the proposed driveways, as marked by the Applicant. Based upon our review, we offer the following comments related to each section. Please note that our review was performed by licensed individuals for each appropriate section including; Certified Soil Scientist, Certified Wildlife Biologist, and Professional Engineers.

High Intensity Soil Survey

CES' Certified Soil Scientist reviewed the High Intensity Soil Survey report prepared by Mark Hampton Associates, Inc., to determine if it conforms with the requirements of the Subdivision Ordinance. By reference, the report was also reviewed to determine if conforms with the Maine Association of Professional Soil Scientists *Guidelines for Maine Certified Soil Scientists For Soil Identification and Mapping* (February 2004, revised 2009) ("the *Guidelines*").

The report provided by Hampton Associates consists of a review of the published soil map produced by the USDA – Natural Resources Conservation Service, completing test pits throughout the property, and compiling this data into a report, with a soils map and test pit exploration logs.

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The soils survey uses a methodology that is consistent with the *Guidelines*, and the resulting map is consistent with the requirements for the specified Class of soils map. The Soils Map for the Watson Woods Subdivision is divided into a Class A, High Intensity in the area of proposed lots; and Class C, Medium High Intensity, in the undeveloped area. The Ordinance specifies a high intensity soil survey for projects; however, a standard approach employed by Certified Soil Scientists and review agencies is to require High Intensity Soils mapping in areas of development, (such as Class A or B); while in undeveloped areas, Class C or D soils mapping is sufficient. The approach balances the utility and effort of a soil survey, such that more detailed soils data is gathered in areas proposed for use. As specified in Ordinance requirement 11.14, freshwater wetlands are shown on the Soils Map.

The High Intensity Soil survey report includes a cover letter and test pit exploration logs, as required by the Guidelines. The Guidelines also specify that a Soil Narrative Report be provided which includes information on the intended use of the property, the soil survey, and how limitations posed by the soils, if any, can be overcome. Such a narrative that provides interpretation of the High Intensity Soil survey was not provided in the review materials received by CES.

Stormwater Management Plan

The Stormwater Management Report and Drainage Analysis Plan, both prepared by Walsh Engineering and dated August 27, 2019 were reviewed for compliance with Article 11.15 – Storm Water Management and Article 12.4 – Storm Water Management Design Guidelines. The plan provided shows both the pre-development conditions and post-development conditions on the same plan at a scale of 1" = 150'. The time of concentration flow paths are not labeled, so we are not able to compare the plan with the provided HydroCAD output to verify that the model is correct and within compliance with the ordinance requirements that "peak discharge rates shall be limited to the predevelopment levels for the 2-year, 10-year, and 25-year frequency". The provided HydroCAD output includes the summaries for each node of the 2-year storm event, but only the node listing for the 10-year and 25-year storm events. In order to determine that the project will meet predevelopment levels, summaries of each node should be provided for all three storm events.

The ordinance requires that stormwater run-off from a Major Subdivision be treated in accordance with Stormwater Management for Maine: Best Management Practices (Stormwater BMP Manual), published by the Maine Department of Environmental Protection (MaineDEP), 1995, to achieve, by design, 40% reduction in total suspended solids. This standard is no longer used by the MaineDEP. The current MaineDEP Stormwater BMP Manual requires treatment for water quality based on treatment percentages of the development. In either case, the Applicant has not provided information to address stormwater quality

Landscape Plan

The proposed landscape plan appears to provide appropriate screening between the proposed house lots and North Road. It does not appear that the Subdivision Ordinance requires a landscape plan to be submitted, so we cannot provide an opinion as to whether or not the proposed plan meets any specific ordinance requirements.

Wildlife Impact Study

CES' Certified Wildlife Biologist reviewed the wildlife habitat report prepared by Jason Tome, a wildlife biologist with Jones Associates, to determine if it conforms with the requirements of Section 11.8C of the Subdivision Ordinance. This review included querying the Maine Department of Inland Fisheries and Wildlife (MDIFW) online habitat viewer, obtaining a list of federally-listed threatened and endangered species using the US Fish and Wildlife Service (USFWS) online viewer, evaluating aerial photographs, and reviewing the subdivision application.

The Wildlife Habitat Report relies on the appropriate databases for identifying significant wildlife habitats, as defined by the subdivision regulations. CES' independent review confirms the findings of Jones Associates with regard to the lack of State-designated significant wildlife habitats in or near the proposed subdivision. We requested information from the Town regarding important habitat areas identified in the comprehensive plan, but no maps were available that provided information that was different from MDIFW.

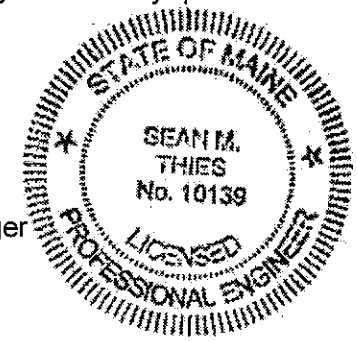
The Wildlife Habitat Report suggests a minimal risk to wildlife given, in part, the amount of land to be retained by the owner or put into common open space. We concur that the project impacts on wildlife have been minimized by avoiding wetland impacts and placing the lots adjacent to North Road.

Sight Distance Measurements

Site distances were measured by CES on August 27, 2019. There were two driveway locations where we measured less sight distance than the Applicant and MaineDOT. In both instances, vegetation (brush) was impacting the ability to meet the required distance of 450 feet. For the Lot 1/2 driveway, we measured 377 feet to the west. For Lot 3/4 driveway, we measured 425 feet to the east. With appropriate vegetation maintenance in the area between these two driveways, the required sight distance should be met.

Please let us know if you have any questions or require additional information.

Sincerely,
CES, Inc.



Sean M. Thies, PE
Senior Project Manager

SMT/ach/gdr

WALSH
ENGINEERING ASSOCIATES, INC.

File: 16149

September 10, 2019

Planning Board
Town of Parsonsfield
634 North Rd
Parsonsfield, ME 04047

RE: **RESPONSE TO COMMENTS BY CES INC., 9/6/19, WATSON WOODS**

Dear Board Members,

In response to the peer review comments we offer the following:

High Intensity Soils Survey

There are no soils in the building envelopes that require special construction techniques for residential homes and driveways. Attached are additional informational soil sheets from Mark Hampton Associates. Also enclosed are test pits for Lot 7 showing suitable soils for septic systems. These test pits have been added to the plans.

Stormwater Management

Attached is the updated Stormwater Report, included are the summary print outs of the 2, 10 and 25 year storms. The plan has been annotated to show the Tc Paths and the Hyrdocad Model has been corrected to match.

The report text has been modified to include a section on water quality. This project does not need a DEP Permit under Chapter 500 as single family homes on individual lots are exempt. We have provided a narrative on meeting the TSS standards from 1995 DEP Best Management Handbook. The use of buffers around the homes will meet that standard. Those have been shown on the plan all along.

Landscape Plan

No comment required.

Wildlife Impact Study

Not comment required.

Sight Distance Measurements

We have added a note to the plans requiring the lot owners to maintain the visibility by removing the brush.

Hopefully this addresses all of the Board's concerns.

Respectfully,

Thomas S. Greer, P.E.
Walsh Engineering Associates, Inc.

cc: Nathan Wadsworth, Amy McNally, Ralph Austin Esq., File
enc.

WALSH
ENGINEERING ASSOCIATES, INC.

STORMWATER MANAGEMENT REPORT
WATSON WOODS
PARSONSFIELD, MAINE

May 3, 2019
Revised: August 26, 2019
Revised: September 10, 2019
Revised: September 12, 2019

Project Description:

This project, located at the corner of Hussey Road and Route 160, is the division of one (1), 55.76-acre lot into eight (8) single-family residential lots, 8.66 acres of common open space, and 27.4 acres of remaining land, retained by the owner. The lots average 2.46 acres. The lots are accessed from North Road and Hussey Road. No roads will be created with this subdivision.

Surface Water:

The watershed consists of 116 acres. About half of that is on neighboring properties. The watershed has been divided into three (3) subcatchments for analysis.

Subcatchment #1 is along North Road from the start of the proposed lot #1 to the 24" culvert that crosses Hussey Road. This culvert is the first Point of Analysis (POA).

Subcatchment #2 is to the north of subcatchment #1 and covers the middle of proposed lots #6-8 and runs 280 feet along Hussey Road. It discharges at the 15" culvert that crosses Hussey Road. This culvert is POA #2.

Subcatchment #3 is the majority of the site and neighboring lots. The offsite area is wooded. The onsite area was recently logged and has been left to revegetate. This area drains to a 30" culvert that crosses Hussey Road. This culvert is POA #3.

Flooding:

The project is not located within the 100-year flood plain, as shown on the attached FEMA Flood Insurance Rate Map Community Panel 230154 0015 B.

Groundcover, Topography and Soils:

The site consists of Skerry, Brayton, and Becket soils. All three fall into the hydrologic soil group C. The ground cover onsite is naturally being revegetated from being logged. The watershed is the western side of an unnamed hill. The hill slopes from elevation 780 to elevation 518 at Hussey Road.

Alteration of Natural Drainage Ways and Land Cover:

The development of the lots will not alter the natural drainage ways for the site. There is a buffer along the front of the lots that treats stormwater from the project. The natural swale and wetlands down the middle of the site will remain in their existing conditions and will not be impacted. No wetland impacts are anticipated.

Methodology:

HydroCAD version 10.0 developed by HydroCAD Software Solutions LLC of Chocurua, NH is used to model the hydrology and hydraulics of the site and design the hydraulics of stormwater management measures and facilities.

Peak flows for the 2-year (3.3"), 10-year (4.9"), and 25-year (6.2") storm events in a 24-hour period are analyzed for pre- and post-developed conditions. Precipitation values used in the model are taken from the manual: *CHAPTER 500: STORMWATER MANAGEMENT, Appendix H.* The rainfall values used are for York County, Maine.

Times of concentration methods include TR-55 sheet flow and shallow concentrated flow. Runoff curve numbers are selected from Tables 2-2a and 2-2c of the SCS TR-55 manual, which are included in the HydroCAD software. Watershed subcatchments are as delineated on Drawing D1.0 for pre-developed and post-developed conditions. Modeling assumptions made for each subcatchment, culvert, and Best Management Practice (BMP) with the site in its pre- and post-developed conditions are summarized in the HydroCAD reports attached as **Appendices B and C**.

Proposed BMPs:

Standard erosion and sediment control will be used during the development of the lots. No other BMPs are required for this project. A level spreader will be utilized on Lot 7 to control the peak rate of runoff from the site.

Stormwater Quality:

The project is designed in accordance with the Stormwater Management for Maine: Best Management Practices published by Maine Department of Environmental Protection 1995. The 1995 Standards require 40% of TSS for the impervious surface. As noted in Section 6.2-Vegetated Buffers, of those standards, Table 6-1 gives removal standards for vegetated buffers. The subdivision plan has designated buffer area for lots as well as buffers along Hussey Road and Route 160.

The soils in this area of the subdivision are Hydrologic Group C. The buffers are considered "wooded" under those standards. Most buffer areas are a minimum of 50 feet along the fall line. With grades in the 4 to 15% range removal rates vary from 66% to 57%; 3 to 8% grades at the 66% and 8 to 15% grades at 57%, page 70 of the vegetated buffer section of the 1995 Regulations.

Each home will be graded to provide a uniform grade at the edge of the construction area, producing sheet flow conditions into the wooded area. Each home site will have approximately 3,500 to 4,500 sq. ft. of impervious area. Assuming a lot of 5,000 sq. ft. of impervious area, a buffer would have to have 1,250 sq. ft. or an area of 25'x50'. The following note has been added to the plan to ensure sheet flow of stormwater as it leaves the home site.

> *"The grading around the home is to be done such that stormwater runoff enters the woods in a sheet flow condition. Do not grade ditches around home."*

The current DEP Standards, Chapter 500 for Stormwater Management exempt this project from permit requirements. Single family homes on individual lots are exempt.

Water Quantity:

The development of this project will not have a significant impact on the peak rate of runoff from the site. See Table 1 for POA runoff values. See attached HydroCAD model for clarification.

TABLE 1

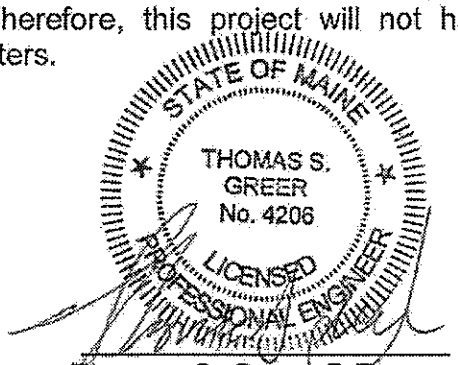
POINT OF ANALYSIS	*PEAK RATE OF RUNOFF (CFS)*					
	2-YR	*10-YR*	*25-YR*	*2-YR*	*10-YR*	*25-YR*
	PRE-DEVELOPMENT CONDITIONS			POST-DEVELOPMENT CONDITIONS		
POA # 1	3.81	8.06	11.81	3.32	7.35	10.95
POA # 2	2.13	4.79	6.66	1.70	3.98	5.80
POA # 3	25.89	67.48	106.57	25.84	67.34	106.35

WALSH

ENGINEERING ASSOCIATES, INC.

Conclusion:

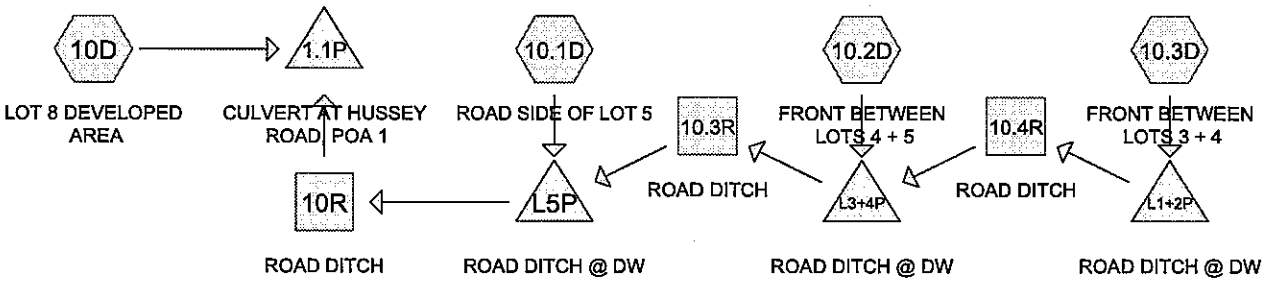
The HydroCAD model predicts that peak stormwater runoff rates at the points of analyses will be reduced compared to the existing conditions. Therefore, this project will not have a significant impact on adjacent properties or receiving waters.



Thomas S. Greer, P.E.

9/16/19

DEVELOPED CONDITIONS



Subcat Reach Pond Link

Routing Diagram for 16149 EX DEV 082619
Prepared by Walsh Engineering Associates, Inc., Printed 9/12/2019
HydroCAD® 10.00-25 s/n 02135 © 2019 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.457	74	>75% Grass cover, Good, HSG C (10.1D, 10.2D, 10.3D, 10D)
0.073	98	Existing Paved road, HSG C (10.2D)
0.252	98	Existing Paved roads, HSG C (10D)
0.075	98	Existing Paved roads, HSG C (10.1D)
0.094	96	Gravel surface, HSG C (10.1D, 10.2D, 10.3D, 10D)
0.118	98	Paved road, HSG C (10.3D)
0.068	98	Roofs, HSG C (10.1D, 10D)
4.335	72	Woods, HSG C (10.1D, 10.2D, 10.3D, 10D)
5.473	**75**	**TOTAL AREA**

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

Subcatchment10.1D: ROAD SIDE OF LOT Runoff Area=36,777 sf 12.09% Impervious Runoff Depth>1.18"
Flow Length=223' Tc=15.2 min CN=77 Runoff=0.93 cfs 0.083 af

Subcatchment10.2D: FRONT BETWEEN Runoff Area=13,940 sf 22.87% Impervious Runoff Depth>1.37"
Flow Length=180' Tc=7.8 min CN=80 Runoff=0.51 cfs 0.036 af

Subcatchment10.3D: FRONT BETWEEN Runoff Area=29,490 sf 17.37% Impervious Runoff Depth>1.17"
Flow Length=370' Tc=19.4 min CN=77 Runoff=0.67 cfs 0.066 af

Subcatchment10D: LOT 8 DEVELOPED Runoff Area=158,182 sf 8.08% Impervious Runoff Depth>0.99"
Flow Length=680' Tc=40.9 min CN=74 Runoff=2.17 cfs 0.300 af

Reach 10.3R: ROAD DITCH Avg. Flow Depth=0.09' Max Vel=1.41 fps Inflow=0.67 cfs 0.034 af
n=0.035 L=286.0' S=0.0311 '/' Capacity=221.09 cfs Outflow=0.65 cfs 0.034 af

Reach 10.4R: ROAD DITCH Avg. Flow Depth=0.09' Max Vel=1.21 fps Inflow=0.57 cfs 0.026 af
n=0.035 L=300.0' S=0.0230 '/' Capacity=190.07 cfs Outflow=0.55 cfs 0.026 af

Reach 10R: ROAD DITCH Avg. Flow Depth=0.10' Max Vel=2.20 fps Inflow=1.27 cfs 0.071 af
n=0.035 L=791.0' S=0.0618 '/' Capacity=268.99 cfs Outflow=1.18 cfs 0.071 af

Pond 1.1P: CULVERT AT HUSSEY ROAD, POA Peak Elev=515.27' Storage=72 cf Inflow=3.32 cfs 0.371 af
24.0" Round Culvert n=0.013 L=60.0' S=0.0383 '/' Outflow=3.32 cfs 0.370 af

Pond L1+2P: ROAD DITCH @ DW Peak Elev=585.50' Storage=11 cf Inflow=0.67 cfs 0.066 af
Discarded=0.10 cfs 0.040 af Primary=0.57 cfs 0.026 af Outflow=0.67 cfs 0.066 af

Pond L3+4P: ROAD DITCH @ DW Peak Elev=577.54' Storage=21 cf Inflow=0.77 cfs 0.063 af
Discarded=0.10 cfs 0.029 af Primary=0.67 cfs 0.034 af Outflow=0.77 cfs 0.063 af

Pond L5P: ROAD DITCH @ DW Peak Elev=567.79' Storage=30 cf Inflow=1.37 cfs 0.117 af
Discarded=0.10 cfs 0.046 af Primary=1.27 cfs 0.071 af Outflow=1.37 cfs 0.117 af

Total Runoff Area = 5.473 ac Runoff Volume = 0.486 af Average Runoff Depth = 1.06"
89.29% Pervious = 4.886 ac 10.71% Impervious = 0.586 ac

Summary for Subcatchment 10.1D: ROAD SIDE OF LOT 5

Runoff = 0.93 cfs @ 12.22 hrs, Volume= 0.083 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	3,269	98	Existing Paved roads, HSG C
	1,948	96	Gravel surface, HSG C
*	24,846	72	Woods, HSG C
*	1,176	98	Roofs, HSG C
	5,538	74	>75% Grass cover, Good, HSG C
	36,777	77	Weighted Average
	32,332		87.91% Pervious Area
	4,445		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	123	0.0325	1.26		**Shallow Concentrated Flow, B-C, ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
15.2	223	Total			

Summary for Subcatchment 10.2D: FRONT BETWEEN LOTS 4 + 5

Runoff = 0.51 cfs @ 12.12 hrs, Volume= 0.036 af, Depth> 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	3,188	98	Existing Paved road, HSG C
	883	96	Gravel surface, HSG C
*	8,832	72	Woods, HSG C
	1,037	74	>75% Grass cover, Good, HSG C
	13,940	80	Weighted Average
	10,752		77.13% Pervious Area
	3,188		22.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	30	0.0800	0.11		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
3.2	150	0.0240	0.77		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
7.8	180	Total			

Summary for Subcatchment 10.3D: FRONT BETWEEN LOTS 3 + 4

Runoff = 0.67 cfs @ 12.28 hrs, Volume= 0.066 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	5,121	98	Paved road, HSG C
*	22,925	72	Woods, HSG C
	611	96	Gravel surface, HSG C
	833	74	>75% Grass cover, Good, HSG C
	29,490	77	Weighted Average
	24,369		82.63% Pervious Area
	5,121		17.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
2.5	270	0.0323	1.80		**Shallow Concentrated Flow, B-C, TO ROAD DITCH** Nearly Bare & Untilled Kv= 10.0 fps
19.4	370	Total			

Summary for Subcatchment 10D: LOT 8 DEVELOPED AREA

Runoff = 2.17 cfs @ 12.61 hrs, Volume= 0.300 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	10,980	98	Existing Paved roads, HSG C
	657	96	Gravel surface, HSG C
*	132,233	72	Woods, HSG C
*	1,803	98	Roofs, HSG C
	12,509	74	>75% Grass cover, Good, HSG C
	158,182	74	Weighted Average
	145,399		91.92% Pervious Area
	12,783		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	300	0.0370	0.96		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.1	230	0.0350	0.94		**Shallow Concentrated Flow, C-D, ROAD DITCH** Woodland Kv= 5.0 fps
40.9	680	Total			

Summary for Reach 10.3R: ROAD DITCH

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 0.41" for 2-YEAR event
Inflow = 0.67 cfs @ 12.39 hrs, Volume= 0.034 af
Outflow = 0.65 cfs @ 12.48 hrs, Volume= 0.034 af, Atten= 2%, Lag= 5.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.41 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 7.9 min

Peak Storage= 133 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 221.09 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 286.0' Slope= 0.0311 '/'
Inlet Invert= 576.90', Outlet Invert= 568.00'

‡

Summary for Reach 10.4R: ROAD DITCH

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 0.47" for 2-YEAR event
Inflow = 0.57 cfs @ 12.29 hrs, Volume= 0.026 af
Outflow = 0.55 cfs @ 12.41 hrs, Volume= 0.026 af, Atten= 4%, Lag= 7.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.21 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 9.7 min

Peak Storage= 138 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 190.07 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 300.0' Slope= 0.0230 '/'
Inlet Invert= 584.90', Outlet Invert= 578.00'

‡

Summary for Reach 10R: ROAD DITCH

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 0.46" for 2-YEAR event
Inflow = 1.27 cfs @ 12.26 hrs, Volume= 0.071 af
Outflow = 1.18 cfs @ 12.47 hrs, Volume= 0.071 af, Atten= 7%, Lag= 12.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.20 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.89 fps, Avg. Travel Time= 14.8 min

Peak Storage= 425 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 268.99 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 791.0' Slope= 0.0618 '/'
Inlet Invert= 566.90', Outlet Invert= 518.00'

‡

Summary for Pond 1.1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.473 ac, 10.71% Impervious, Inflow Depth > 0.81" for 2-YEAR event
Inflow = 3.32 cfs @ 12.58 hrs, Volume= 0.371 af
Outflow = 3.32 cfs @ 12.58 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.2 min
Primary = 3.32 cfs @ 12.58 hrs, Volume= 0.370 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 515.27' @ 12.58 hrs Surf.Area= 89 sf Storage= 72 cf

Plug-Flow detention time= 0.9 min calculated for 0.370 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (828.6 - 828.1)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.31 cfs @ 12.58 hrs HW=515.27' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.31 cfs @ 2.51 fps)

Summary for Pond L1+2P: ROAD DITCH @ DW

Inflow Area =	0.677 ac, 17.37% Impervious, Inflow Depth > 1.17"		for 2-YEAR event	
Inflow =	0.67 cfs @	12.28 hrs, Volume=	0.066 af	
Outflow =	0.67 cfs @	12.29 hrs, Volume=	0.066 af, Atten= 0%, Lag= 0.3 min	
Discarded =	0.10 cfs @	11.85 hrs, Volume=	0.040 af	
Primary =	0.57 cfs @	12.29 hrs, Volume=	0.026 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 585.50' @ 12.29 hrs Surf.Area= 32 sf Storage= 11 cf

Plug-Flow detention time= 0.2 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (820.2 - 820.0)

Volume	Invert	Avail.Storage	Storage Description
#1	585.00'	488 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
585.00	10	0	0
586.00	55	33	33
588.00	400	455	488

Device	Routing	Invert	Outlet Devices
#1	Primary	585.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 585.00' / 584.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	587.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	585.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.85 hrs HW=585.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.57 cfs @ 12.29 hrs HW=585.50' (Free Discharge)
├**1=Culvert** (Barrel Controls 0.57 cfs @ 2.14 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L3+4P: ROAD DITCH @ DW

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 0.75" for 2-YEAR event
Inflow = 0.77 cfs @ 12.38 hrs, Volume= 0.063 af
Outflow = 0.77 cfs @ 12.39 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.10 cfs @ 11.80 hrs, Volume= 0.029 af
Primary = 0.67 cfs @ 12.39 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 577.54' @ 12.39 hrs Surf.Area= 47 sf Storage= 21 cf

Plug-Flow detention time= 0.4 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (784.7 - 784.3)

Volume	Invert	Avail.Storage	Storage Description
#1	577.00'	307 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
577.00	30	0	0
578.00	61	46	46
580.00	100	161	207
580.50	300	100	307

Device	Routing	Invert	Outlet Devices
#1	Primary	577.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 577.00' / 576.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	580.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	577.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.80 hrs HW=577.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.66 cfs @ 12.39 hrs HW=577.54' (Free Discharge)
├**1=Culvert** (Barrel Controls 0.66 cfs @ 2.23 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L5P: ROAD DITCH @ DW

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 0.76" for 2-YEAR event
Inflow = 1.37 cfs @ 12.25 hrs, Volume= 0.117 af
Outflow = 1.37 cfs @ 12.26 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.10 cfs @ 11.75 hrs, Volume= 0.046 af
Primary = 1.27 cfs @ 12.26 hrs, Volume= 0.071 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 567.79' @ 12.26 hrs Surf.Area= 46 sf Storage= 30 cf

Plug-Flow detention time= 0.3 min calculated for 0.117 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (798.8 - 798.5)

Volume	Invert	Avail.Storage	Storage Description
#1	567.00'	361 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
567.00	30	0	0
568.00	50	40	40
570.00	137	187	227
570.50	400	134	361

Device	Routing	Invert	Outlet Devices
#1	Primary	567.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 567.00' / 566.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	570.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	567.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.75 hrs HW=567.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.27 cfs @ 12.26 hrs HW=567.78' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.27 cfs @ 2.64 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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

Subcatchment10.1D: ROAD SIDE OF LOT Runoff Area=36,777 sf 12.09% Impervious Runoff Depth>2.35"
Flow Length=223' Tc=15.2 min CN=77 Runoff=1.88 cfs 0.166 af

Subcatchment10.2D: FRONT BETWEEN Runoff Area=13,940 sf 22.87% Impervious Runoff Depth>2.62"
Flow Length=180' Tc=7.8 min CN=80 Runoff=0.98 cfs 0.070 af

Subcatchment10.3D: FRONT BETWEEN Runoff Area=29,490 sf 17.37% Impervious Runoff Depth>2.35"
Flow Length=370' Tc=19.4 min CN=77 Runoff=1.37 cfs 0.133 af

Subcatchment10D: LOT 8 DEVELOPED Runoff Area=158,182 sf 8.08% Impervious Runoff Depth>2.09"
Flow Length=680' Tc=40.9 min CN=74 Runoff=4.70 cfs 0.632 af

Reach 10.3R: ROAD DITCH Avg. Flow Depth=0.15' Max Vel=1.93 fps Inflow=1.58 cfs 0.095 af
n=0.035 L=286.0' S=0.0311 '/' Capacity=221.09 cfs Outflow=1.56 cfs 0.095 af

Reach 10.4R: ROAD DITCH Avg. Flow Depth=0.14' Max Vel=1.61 fps Inflow=1.27 cfs 0.072 af
n=0.035 L=300.0' S=0.0230 '/' Capacity=190.07 cfs Outflow=1.24 cfs 0.072 af

Reach 10R: ROAD DITCH Avg. Flow Depth=0.18' Max Vel=3.09 fps Inflow=3.09 cfs 0.194 af
n=0.035 L=791.0' S=0.0618 '/' Capacity=268.99 cfs Outflow=2.97 cfs 0.193 af

Pond 1.1P: CULVERT AT HUSSEY ROAD, Peak Elev=515.79' Storage=124 cf Inflow=7.35 cfs 0.825 af
24.0" Round Culvert n=0.013 L=60.0' S=0.0383 '/' Outflow=7.35 cfs 0.825 af

Pond L1+2P: ROAD DITCH @ DW Peak Elev=585.78' Storage=22 cf Inflow=1.37 cfs 0.133 af
Discarded=0.10 cfs 0.061 af Primary=1.27 cfs 0.072 af Outflow=1.37 cfs 0.133 af

Pond L3+4P: ROAD DITCH @ DW Peak Elev=577.90' Storage=40 cf Inflow=1.68 cfs 0.142 af
Discarded=0.10 cfs 0.046 af Primary=1.58 cfs 0.095 af Outflow=1.68 cfs 0.142 af

Pond L5P: ROAD DITCH @ DW Peak Elev=568.58' Storage=76 cf Inflow=3.19 cfs 0.261 af
Discarded=0.10 cfs 0.068 af Primary=3.09 cfs 0.194 af Outflow=3.19 cfs 0.261 af

Total Runoff Area = 5.473 ac Runoff Volume = 1.000 af Average Runoff Depth = 2.19"
89.29% Pervious = 4.886 ac 10.71% Impervious = 0.586 ac

Summary for Subcatchment 10.1D: ROAD SIDE OF LOT 5

Runoff = 1.88 cfs @ 12.21 hrs, Volume= 0.166 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	3,269	98	Existing Paved roads, HSG C
	1,948	96	Gravel surface, HSG C
*	24,846	72	Woods, HSG C
*	1,176	98	Roofs, HSG C
	5,538	74	>75% Grass cover, Good, HSG C
	36,777	77	Weighted Average
	32,332		87.91% Pervious Area
	4,445		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	123	0.0325	1.26		**Shallow Concentrated Flow, B-C, ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
15.2	223	Total			

Summary for Subcatchment 10.2D: FRONT BETWEEN LOTS 4 + 5

Runoff = 0.98 cfs @ 12.11 hrs, Volume= 0.070 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	3,188	98	Existing Paved road, HSG C
	883	96	Gravel surface, HSG C
*	8,832	72	Woods, HSG C
	1,037	74	>75% Grass cover, Good, HSG C
	13,940	80	Weighted Average
	10,752		77.13% Pervious Area
	3,188		22.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	30	0.0800	0.11		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
3.2	150	0.0240	0.77		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
7.8	180	Total			

Summary for Subcatchment 10.3D: FRONT BETWEEN LOTS 3 + 4

Runoff = 1.37 cfs @ 12.27 hrs, Volume= 0.133 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	5,121	98	Paved road, HSG C
*	22,925	72	Woods, HSG C
	611	96	Gravel surface, HSG C
	833	74	>75% Grass cover, Good, HSG C
	29,490	77	Weighted Average
	24,369		82.63% Pervious Area
	5,121		17.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
2.5	270	0.0323	1.80		**Shallow Concentrated Flow, B-C, TO ROAD DITCH** Nearly Bare & Untilled Kv= 10.0 fps
19.4	370	Total			

Summary for Subcatchment 10D: LOT 8 DEVELOPED AREA

Runoff = 4.70 cfs @ 12.58 hrs, Volume= 0.632 af, Depth> 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	10,980	98	Existing Paved roads, HSG C
	657	96	Gravel surface, HSG C
*	132,233	72	Woods, HSG C
*	1,803	98	Roofs, HSG C
	12,509	74	>75% Grass cover, Good, HSG C
	158,182	74	Weighted Average
	145,399		91.92% Pervious Area
	12,783		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	300	0.0370	0.96		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.1	230	0.0350	0.94		**Shallow Concentrated Flow, C-D, ROAD DITCH** Woodland Kv= 5.0 fps
40.9	680	Total			

Summary for Reach 10.3R: ROAD DITCH

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 1.15" for 10-YEAR event
Inflow = 1.58 cfs @ 12.34 hrs, Volume= 0.095 af
Outflow = 1.56 cfs @ 12.41 hrs, Volume= 0.095 af, Atten= 1%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.93 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.66 fps, Avg. Travel Time= 7.3 min

Peak Storage= 232 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 221.09 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 286.0' Slope= 0.0311 '/'
Inlet Invert= 576.90', Outlet Invert= 568.00'

‡

Summary for Reach 10.4R: ROAD DITCH

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 1.27" for 10-YEAR event
Inflow = 1.27 cfs @ 12.28 hrs, Volume= 0.072 af
Outflow = 1.24 cfs @ 12.37 hrs, Volume= 0.072 af, Atten= 2%, Lag= 5.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.61 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.56 fps, Avg. Travel Time= 8.9 min

Peak Storage= 231 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 190.07 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 300.0' Slope= 0.0230 '/'
Inlet Invert= 584.90', Outlet Invert= 578.00'

‡

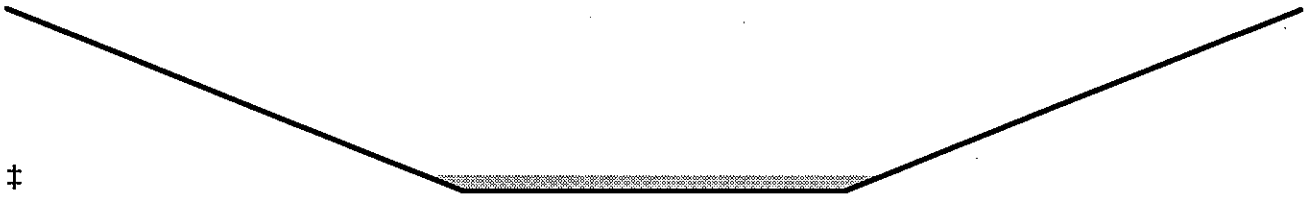
Summary for Reach 10R: ROAD DITCH

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 1.26" for 10-YEAR event
Inflow = 3.09 cfs @ 12.24 hrs, Volume= 0.194 af
Outflow = 2.97 cfs @ 12.39 hrs, Volume= 0.193 af, Atten= 4%, Lag= 8.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.09 fps, Min. Travel Time= 4.3 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 13.3 min

Peak Storage= 765 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 268.99 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 791.0' Slope= 0.0618 '/'
Inlet Invert= 566.90', Outlet Invert= 518.00'



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Summary for Pond 1.1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.473 ac, 10.71% Impervious, Inflow Depth > 1.81" for 10-YEAR event
Inflow = 7.35 cfs @ 12.51 hrs, Volume= 0.825 af
Outflow = 7.35 cfs @ 12.52 hrs, Volume= 0.825 af, Atten= 0%, Lag= 0.3 min
Primary = 7.35 cfs @ 12.52 hrs, Volume= 0.825 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 515.79' @ 12.52 hrs Surf.Area= 114 sf Storage= 124 cf

Plug-Flow detention time= 0.6 min calculated for 0.822 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (813.0 - 812.6)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.33 cfs @ 12.52 hrs HW=515.78' (Free Discharge)
└**1=Culvert** (Inlet Controls 7.33 cfs @ 3.16 fps)

Summary for Pond L1+2P: ROAD DITCH @ DW

Inflow Area =	0.677 ac, 17.37% Impervious, Inflow Depth >	2.35"	for 10-YEAR event	
Inflow =	1.37 cfs @	12.27 hrs, Volume=	0.133 af	
Outflow =	1.37 cfs @	12.28 hrs, Volume=	0.133 af, Atten= 0%, Lag= 0.3 min	
Discarded =	0.10 cfs @	11.50 hrs, Volume=	0.061 af	
Primary =	1.27 cfs @	12.28 hrs, Volume=	0.072 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 585.78' @ 12.28 hrs Surf.Area= 45 sf Storage= 22 cf

Plug-Flow detention time= 0.2 min calculated for 0.132 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (804.9 - 804.7)

Volume	Invert	Avail.Storage	Storage Description
#1	585.00'	488 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
585.00	10	0	0
586.00	55	33	33
588.00	400	455	488

Device	Routing	Invert	Outlet Devices
#1	Primary	585.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 585.00' / 584.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	587.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	585.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.50 hrs HW=585.05' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.26 cfs @ 12.28 hrs HW=585.78' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.26 cfs @ 2.64 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L3+4P: ROAD DITCH @ DW

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 1.70" for 10-YEAR event
Inflow = 1.68 cfs @ 12.34 hrs, Volume= 0.142 af
Outflow = 1.68 cfs @ 12.34 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.10 cfs @ 11.65 hrs, Volume= 0.046 af
Primary = 1.58 cfs @ 12.34 hrs, Volume= 0.095 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 577.90' @ 12.34 hrs Surf.Area= 58 sf Storage= 40 cf

Plug-Flow detention time= 0.4 min calculated for 0.142 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (774.8 - 774.5)

Volume	Invert	Avail.Storage	Storage Description
#1	577.00'	307 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
577.00	30	0	0
578.00	61	46	46
580.00	100	161	207
580.50	300	100	307

Device	Routing	Invert	Outlet Devices
#1	Primary	577.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 577.00' / 576.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	580.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	577.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.65 hrs HW=577.08' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.58 cfs @ 12.34 hrs HW=577.90' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.58 cfs @ 2.80 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L5P: ROAD DITCH @ DW

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 1.70" for 10-YEAR event
Inflow = 3.19 cfs @ 12.23 hrs, Volume= 0.261 af
Outflow = 3.19 cfs @ 12.24 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.10 cfs @ 11.25 hrs, Volume= 0.068 af
Primary = 3.09 cfs @ 12.24 hrs, Volume= 0.194 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 568.58' @ 12.24 hrs Surf.Area= 75 sf Storage= 76 cf

Plug-Flow detention time= 0.4 min calculated for 0.260 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (784.2 - 783.9)

Volume	Invert	Avail.Storage	Storage Description
#1	567.00'	361 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
567.00	30	0	0
568.00	50	40	40
570.00	137	187	227
570.50	400	134	361

Device	Routing	Invert	Outlet Devices
#1	Primary	567.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 567.00' / 566.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	570.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	567.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.25 hrs HW=567.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=3.08 cfs @ 12.24 hrs HW=568.58' (Free Discharge)
├**1=Culvert** (Barrel Controls 3.08 cfs @ 3.92 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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

Subcatchment10.1D: ROAD SIDE OF LOT Runoff Area=36,777 sf 12.09% Impervious Runoff Depth>3.41"
Flow Length=223' Tc=15.2 min CN=77 Runoff=2.71 cfs 0.240 af

Subcatchment10.2D: FRONT BETWEEN Runoff Area=13,940 sf 22.87% Impervious Runoff Depth>3.71"
Flow Length=180' Tc=7.8 min CN=80 Runoff=1.37 cfs 0.099 af

Subcatchment10.3D: FRONT BETWEEN Runoff Area=29,490 sf 17.37% Impervious Runoff Depth>3.40"
Flow Length=370' Tc=19.4 min CN=77 Runoff=1.98 cfs 0.192 af

Subcatchment10D: LOT 8 DEVELOPED Runoff Area=158,182 sf 8.08% Impervious Runoff Depth>3.09"
Flow Length=680' Tc=40.9 min CN=74 Runoff=6.94 cfs 0.934 af

Reach 10.3R: ROAD DITCH Avg. Flow Depth=0.18' Max Vel=2.23 fps Inflow=2.36 cfs 0.159 af
n=0.035 L=286.0' S=0.0311 '/' Capacity=221.09 cfs Outflow=2.34 cfs 0.159 af

Reach 10.4R: ROAD DITCH Avg. Flow Depth=0.17' Max Vel=1.86 fps Inflow=1.88 cfs 0.118 af
n=0.035 L=300.0' S=0.0230 '/' Capacity=190.07 cfs Outflow=1.84 cfs 0.118 af

Reach 10R: ROAD DITCH Avg. Flow Depth=0.22' Max Vel=3.58 fps Inflow=4.61 cfs 0.318 af
n=0.035 L=791.0' S=0.0618 '/' Capacity=268.99 cfs Outflow=4.50 cfs 0.318 af

Pond 1.1P: CULVERT AT HUSSEY ROAD, Peak Elev=516.23' Storage=180 cf Inflow=10.96 cfs 1.251 af
24.0" Round Culvert n=0.013 L=60.0' S=0.0383 '/' Outflow=10.95 cfs 1.251 af

Pond L1+2P: ROAD DITCH @ DW Peak Elev=586.01' Storage=33 cf Inflow=1.98 cfs 0.192 af
Discarded=0.10 cfs 0.074 af Primary=1.88 cfs 0.118 af Outflow=1.98 cfs 0.192 af

Pond L3+4P: ROAD DITCH @ DW Peak Elev=578.22' Storage=59 cf Inflow=2.46 cfs 0.217 af
Discarded=0.10 cfs 0.059 af Primary=2.36 cfs 0.159 af Outflow=2.46 cfs 0.217 af

Pond L5P: ROAD DITCH @ DW Peak Elev=569.89' Storage=212 cf Inflow=4.81 cfs 0.398 af
Discarded=0.10 cfs 0.081 af Primary=4.61 cfs 0.318 af Outflow=4.71 cfs 0.398 af

Total Runoff Area = 5.473 ac Runoff Volume = 1.464 af Average Runoff Depth = 3.21"
89.29% Pervious = 4.886 ac 10.71% Impervious = 0.586 ac

Summary for Subcatchment 10.1D: ROAD SIDE OF LOT 5

Runoff = 2.71 cfs @ 12.21 hrs, Volume= 0.240 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	3,269	98	Existing Paved roads, HSG C
	1,948	96	Gravel surface, HSG C
*	24,846	72	Woods, HSG C
*	1,176	98	Roofs, HSG C
	5,538	74	>75% Grass cover, Good, HSG C
	36,777	77	Weighted Average
	32,332		87.91% Pervious Area
	4,445		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	123	0.0325	1.26		**Shallow Concentrated Flow, B-C, ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
15.2	223	Total			

Summary for Subcatchment 10.2D: FRONT BETWEEN LOTS 4 + 5

Runoff = 1.37 cfs @ 12.11 hrs, Volume= 0.099 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	3,188	98	Existing Paved road, HSG C
	883	96	Gravel surface, HSG C
*	8,832	72	Woods, HSG C
	1,037	74	>75% Grass cover, Good, HSG C
	13,940	80	Weighted Average
	10,752		77.13% Pervious Area
	3,188		22.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	30	0.0800	0.11		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
3.2	150	0.0240	0.77		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
7.8	180	Total			

Summary for Subcatchment 10.3D: FRONT BETWEEN LOTS 3 + 4

Runoff = 1.98 cfs @ 12.27 hrs, Volume= 0.192 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	5,121	98	Paved road, HSG C
*	22,925	72	Woods, HSG C
	611	96	Gravel surface, HSG C
	833	74	>75% Grass cover, Good, HSG C
	29,490	77	Weighted Average
	24,369		82.63% Pervious Area
	5,121		17.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
2.5	270	0.0323	1.80		**Shallow Concentrated Flow, B-C, TO ROAD DITCH** Nearly Bare & Untilled Kv= 10.0 fps
19.4	370	Total			

Summary for Subcatchment 10D: LOT 8 DEVELOPED AREA

Runoff = 6.94 cfs @ 12.57 hrs, Volume= 0.934 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	10,980	98	Existing Paved roads, HSG C
	657	96	Gravel surface, HSG C
*	132,233	72	Woods, HSG C
*	1,803	98	Roofs, HSG C
	12,509	74	>75% Grass cover, Good, HSG C
	158,182	74	Weighted Average
	145,399		91.92% Pervious Area
	12,783		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	300	0.0370	0.96		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.1	230	0.0350	0.94		**Shallow Concentrated Flow, C-D, ROAD DITCH** Woodland Kv= 5.0 fps
40.9	680	Total			

Summary for Reach 10.3R: ROAD DITCH

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 1.91" for 25-YEAR event
Inflow = 2.36 cfs @ 12.33 hrs, Volume= 0.159 af
Outflow = 2.34 cfs @ 12.39 hrs, Volume= 0.159 af, Atten= 1%, Lag= 3.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.23 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 6.8 min

Peak Storage= 302 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 221.09 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 286.0' Slope= 0.0311 '/'
Inlet Invert= 576.90', Outlet Invert= 568.00'

‡

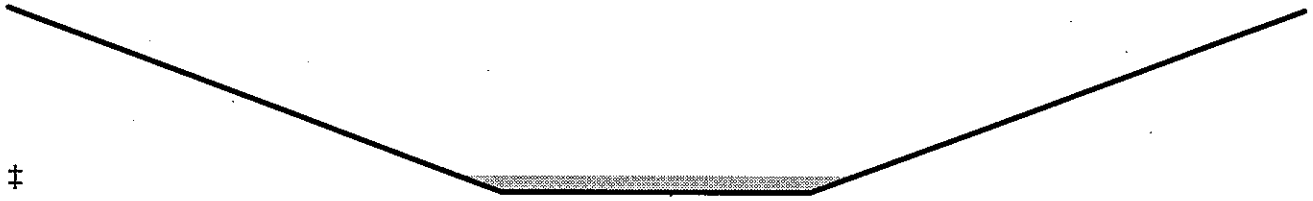
Summary for Reach 10.4R: ROAD DITCH

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 2.10" for 25-YEAR event
Inflow = 1.88 cfs @ 12.27 hrs, Volume= 0.118 af
Outflow = 1.84 cfs @ 12.35 hrs, Volume= 0.118 af, Atten= 2%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.86 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 8.4 min

Peak Storage= 299 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 190.07 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 300.0' Slope= 0.0230 '/'
Inlet Invert= 584.90', Outlet Invert= 578.00'



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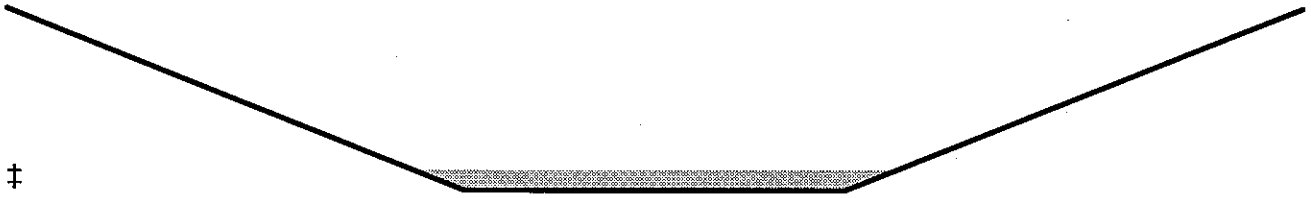
Summary for Reach 10R: ROAD DITCH

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 2.07" for 25-YEAR event
Inflow = 4.61 cfs @ 12.27 hrs, Volume= 0.318 af
Outflow = 4.50 cfs @ 12.38 hrs, Volume= 0.318 af, Atten= 2%, Lag= 6.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.58 fps, Min. Travel Time= 3.7 min
Avg. Velocity = 1.08 fps, Avg. Travel Time= 12.2 min

Peak Storage= 1,001 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 268.99 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 791.0' Slope= 0.0618 '/'
Inlet Invert= 566.90', Outlet Invert= 518.00'



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Summary for Pond 1.1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.473 ac, 10.71% Impervious, Inflow Depth > 2.74" for 25-YEAR event
Inflow = 10.96 cfs @ 12.50 hrs, Volume= 1.251 af
Outflow = 10.95 cfs @ 12.50 hrs, Volume= 1.251 af, Atten= 0%, Lag= 0.3 min
Primary = 10.95 cfs @ 12.50 hrs, Volume= 1.251 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 516.23' @ 12.50 hrs Surf.Area= 139 sf Storage= 180 cf

Plug-Flow detention time= 0.5 min calculated for 1.247 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (806.0 - 805.6)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.95 cfs @ 12.50 hrs HW=516.23' (Free Discharge)
└**1=Culvert** (Inlet Controls 10.95 cfs @ 3.64 fps)

Summary for Pond L1+2P: ROAD DITCH @ DW

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 3.40" for 25-YEAR event
Inflow = 1.98 cfs @ 12.27 hrs, Volume= 0.192 af
Outflow = 1.98 cfs @ 12.27 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.10 cfs @ 10.95 hrs, Volume= 0.074 af
Primary = 1.88 cfs @ 12.27 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 586.01' @ 12.27 hrs Surf.Area= 57 sf Storage= 33 cf

Plug-Flow detention time= 0.2 min calculated for 0.192 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (796.5 - 796.3)

Volume	Invert	Avail.Storage	Storage Description
#1	585.00'	488 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
585.00	10	0	0
586.00	55	33	33
588.00	400	455	488

Device	Routing	Invert	Outlet Devices
#1	Primary	585.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 585.00' / 584.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	587.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	585.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 10.95 hrs HW=585.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.86 cfs @ 12.27 hrs HW=586.00' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.86 cfs @ 2.93 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L3+4P: ROAD DITCH @ DW

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 2.61" for 25-YEAR event
Inflow = 2.46 cfs @ 12.32 hrs, Volume= 0.217 af
Outflow = 2.46 cfs @ 12.33 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.10 cfs @ 11.30 hrs, Volume= 0.059 af
Primary = 2.36 cfs @ 12.33 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 578.22' @ 12.33 hrs Surf.Area= 65 sf Storage= 59 cf

Plug-Flow detention time= 0.4 min calculated for 0.217 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (772.1 - 771.7)

Volume	Invert	Avail.Storage	Storage Description
#1	577.00'	307 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
577.00	30	0	0
578.00	61	46	46
580.00	100	161	207
580.50	300	100	307

Device	Routing	Invert	Outlet Devices
#1	Primary	577.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 577.00' / 576.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	580.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	577.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.30 hrs HW=577.05' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=2.35 cfs @ 12.33 hrs HW=578.21' (Free Discharge)
├**1=Culvert** (Barrel Controls 2.35 cfs @ 3.13 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L5P: ROAD DITCH @ DW

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 2.60" for 25-YEAR event
Inflow = 4.81 cfs @ 12.22 hrs, Volume= 0.398 af
Outflow = 4.71 cfs @ 12.27 hrs, Volume= 0.398 af, Atten= 2%, Lag= 2.6 min
Discarded = 0.10 cfs @ 10.60 hrs, Volume= 0.081 af
Primary = 4.61 cfs @ 12.27 hrs, Volume= 0.318 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 569.89' @ 12.27 hrs Surf.Area= 132 sf Storage= 212 cf

Plug-Flow detention time= 0.5 min calculated for 0.398 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (778.7 - 778.3)

Volume	Invert	Avail.Storage	Storage Description
#1	567.00'	361 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
567.00	30	0	0
568.00	50	40	40
570.00	137	187	227
570.50	400	134	361

Device	Routing	Invert	Outlet Devices
#1	Primary	567.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 567.00' / 566.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	570.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	567.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 10.60 hrs HW=567.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=4.58 cfs @ 12.27 hrs HW=569.86' (Free Discharge)
├**1=Culvert** (Inlet Controls 4.58 cfs @ 5.84 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4643

Watson Woods Subdivision
Hussey Road
Nathan Wadsworth
Parsonsfield, ME

Becket
(Oxyaquic Haplothods)

SETTING

PARENT MATERIAL:	Derived from compact loamy glacial till.
LANDFORM:	Till plains, hills and ridges.
POSITION IN LANDSCAPE:	Plains and middle levels.
SLOPE GRADIENT RANGES:	(C) 8-15%, (D) 15-25%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Well drained

TYPICAL PROFILE: Surface Layer: Dark reddish brown(5YR3/2) fine sandy loam, 0-5", weak fine granular structure, very friable, 5 percent stone fragments, abrupt wavy boundary
Subsurface Layer: Reddish brown(5YR 4/4), fine sandy loam, 5-24", weak fine granular structure, friable, 15 percent stone fragments, clear irregular boundary
Subsoil Layer: Olive brown(2.5Y 5/4), gravelly sandy loam 24-33", moderate medium granular structure, friable, 25 percent stone fragments, abrupt smooth boundary
Substratum: Olive (5Y 4/3), gravelly sandy loam, 33-65",massive, firm and brittle, few medium prominent masses of iron accumulation, 30 percent stone fragments

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderately Rapid
PERMEABILITY:	Moderate in solum, slow in substratum
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Skerry, Brayton

USE AND MANAGEMENT

Development: Other than slope there are few limiting factors for development for this soil.

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4643

Watson Woods Subdivision
Hussey Road
Nathan Wadsworth
Parsonsfield, ME

Skerry
(Aquic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from compact loamy glacial till.
LANDFORM:	Till plains, hills and ridges.
POSITION IN LANDSCAPE:	Plains and middle levels.
SLOPE GRADIENT RANGES:	(B) 3-8%, (C) 8-15%, (D) 15-25%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained

TYPICAL PROFILE: Surface Layer: Gray (10YR 6/1), fine sandy loam, 0-7", weak granular, friable, 10 percent rock fragments, abrupt broken boundary

Subsurface Layer: Dark reddish brown (5YR 3/3), fine sandy loam, 7-20", moderate medium granular, 60 percent friable 40 percent weakly cemented, 15 percent stone fragments, clear wavy boundary

Subsoil Layer: Yellow brown (10YR 5/4), stony fine sandy loam 20-28", massive, 80 percent friable, 20 percent weakly cemented, common fine prominent masses of iron accumulation and common and distinct grayish brown areas of iron depeltion, 20 percent stone fragments, clear smooth boundary

Substratum: Olive brown (2.5Y5/4), stony fine sandy loam, 28-65" massive and firm and single grain and loose, 25 percent stone fragments, sand lenses up to ½ inch thick

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderately Rapid
PERMEABILITY:	Moderate in solum, slow in substratum
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Becket, Dixfield, Brayton

USE AND MANAGEMENT

Development: The limiting factor for building development is wetness due to the presence of a seasonally high watertable on top of dense glacial basal till for a portion of the year. Proper foundation drainage or site modifications are recommended.

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4643

Watson Woods Subdivision
Hussey Road
Nathan Wadsworth
Parsonsfield, ME

Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL:	Derived from dense glacial till
LANDFORM:	Toeslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE:	Lower positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE: Surface Layer: Dark gray(10YR 3/1), fine sandy loam 0-5", weak fine and medium granular structure, very friable, 10 percent stone fragments, abrupt wavy boundary

Subsurface Layer: Gray (2.5 Y 5/2), gravelly fine sandy loam, 5-15", few medium masses of iron accumulation, weak very fine subangular blocky structure, friable, 20 percent stone fragments, abrupt wavy boundary

Subsoil Layer: Grayish brown (2.5 y 5/4) fine sandy loam, 15-24"weak platy structure, firm, many medium prominent masses of iron accumulation, 10 percent rock fragments, clear wavy boundary

Substratum: Olive (5Y 4/3) fine sandy loam, 24-65", massive, very firm, common medium distinct masses of iron accumulation, 10 percent rock fragments,

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Moderate and moderately slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Becket, Skerry, Lyman-Tunbridge

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of an extremely high watertable for a portion of the year. This soil is not suitable for development without alteration, which may require additional permitting.

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4643

September 8, 2019

Mr. Tom Greer
Pinkham & Greer Civil Engineers
28 Vannah Avenue
Portland, ME 04103

Re: Preliminary soil evaluation, Watson Woods Subdivision, Proposed Lot 7

Dear Tom,

I have completed a preliminary soil evaluation on a proposed lot 7 of the amended Watson Woods Subdivision. The soil evaluation was conducted in accordance with the Maine Subsurface Wastewater Disposal Rules dated August 2015, as amended. The soils found on the parcel are glacial till soils with a limiting factor at approximately 16 inches. I was able to find suitable soils and area for a septic system on the proposed lot. And in accordance with the Town of Parsonsfield zoning ordinance, I evaluated two test pits on the lot, one for the primary location and one for the reserve location.

The soils as evaluated meet the minimum requirements of the state rules and as such are suitable for the location of a septic system. The disposal bed for a 3 bedroom home would possibly be a 900 square feet stone bed, 20 feet wide and 45 feet long. In my opinion, there are suitable soils and area on the proposed lot for a septic system. A subsurface wastewater disposal design can be prepared at some future date.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton L.S.E., C.S.S.
Licensed Site Evaluator #263
Certified Soil Scientist #216

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

PAGE ___ OF ___

4643

FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Watson Woods Subdivision | Applicant Name: Nathan Woolsworth | Project Location (municipality): Parsonsfield

Exploration Symbol # TP7-1

☒ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–10	Sandy loam	Friable	Dark Brown	
10–20	Strong Sandy loam	Friable	Brown	
20–60	Strong Sandy loam	Firm	Olive	Common Distinct

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification: Profile 3 / Condition C

Slope: Percent 4

Limiting Factor: Depth 16" ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Skerry Mud

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: C

Exploration Symbol # TP7-2

☒ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–10	Sandy loam	Friable	Dark Brown	
10–20	Strong Sandy loam	Friable	Brown	
20–60	Strong Sandy loam	Firm	Olive	Common Distinct

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification: Profile 3 / Condition C

Slope: Percent 4

Limiting Factor: Depth 16" ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: SKERRY MUD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: C

Exploration Symbol # _____

☐ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification: Profile ___ / Condition ___

Slope: Percent ___

Limiting Factor: Depth ___" ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name:

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: ___

Exploration Symbol # _____

☐ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification: Profile ___ / Condition ___

Slope: Percent ___

Limiting Factor: Depth ___" ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name:

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: ___

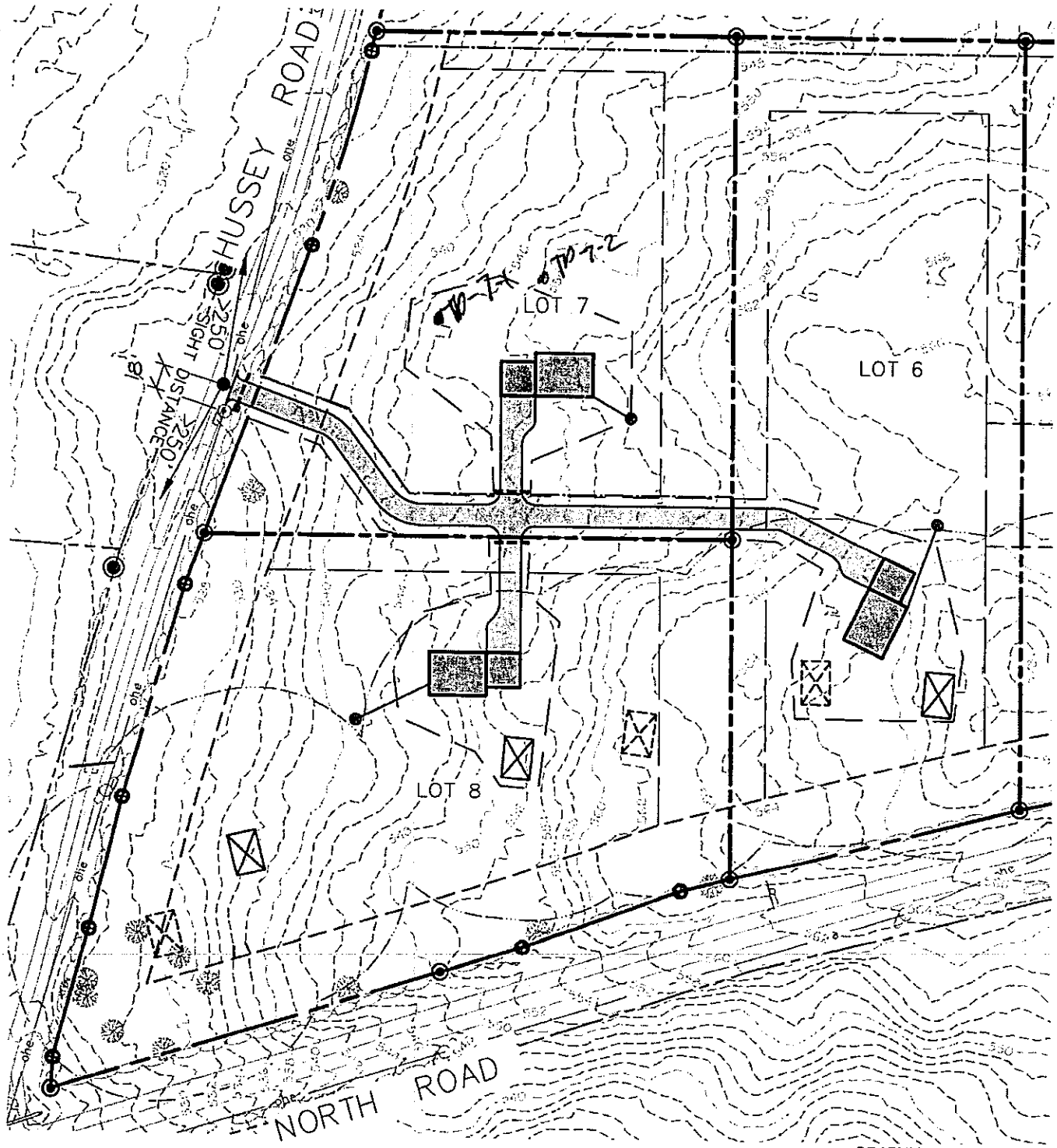
INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mary. Hampton | Date: 9/8/19

Name Printed: Mark J. Hampton | Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

affix professional seal



LOT GRADING AND HOUSE LOCATIONS ARE CONCEPTUAL ONLY.

WALSH
ENGINEERING ASSOCIATES, INC.
One Karen Dr., Suite 2A | Westbrook, Maine 04092
ph: 207.553.9898 | www.walsh-eng.com

WATSON WOODS SUBDIVISION

NORTH ROAD & HUSSEY ROAD
PARSONSFIELD, MAINE

Sheet Title: LOT 8

Job No.:	16149
Date:	8/26/19
Scale:	AS SHOWN
Drawn:	JWG
Checked:	TSG

Summary for Subcatchment 1S: SOUTH SIDE ALONG NORTH ROAD

Runoff = 3.81 cfs @ 12.44 hrs, Volume= 0.449 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	22,558	98	Paved road, HSG C
*	200,573	72	Woods, HSG C
	223,131	75	Weighted Average
	200,573		89.89% Pervious Area
	22,558		10.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0800	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	157	0.0380	0.97		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.2	391	0.0970	1.56		**Shallow Concentrated Flow, C-D, IN WOODS** Woodland Kv= 5.0 fps
1.4	230	0.0350	2.81		**Shallow Concentrated Flow, D-E, IN ROAD DITCH** Grassed Waterway Kv= 15.0 fps
29.4	878	Total			

Summary for Subcatchment 2S: AREA OF LOT 7+, ALONG HUSSEY ROAD

Runoff = 2.13 cfs @ 12.39 hrs, Volume= 0.240 af, Depth> 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	2,095	98	Paved road, HSG C
*	138,415	72	Woods, HSG C
	140,510	72	Weighted Average
	138,415		98.51% Pervious Area
	2,095		1.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		**Sheet Flow, A-B, NORTH IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
8.2	625	0.0640	1.26		**Shallow Concentrated Flow, B-C, NORTH WEST THROUGH** Woodland Kv= 5.0 fps
2.2	150	0.0130	1.14		**Shallow Concentrated Flow, C-D, SOUTH WEST IN ROAD DI** Nearly Bare & Untilled Kv= 10.0 fps
25.1	875	Total			

Summary for Subcatchment 3S: CENTRAL SITE PLUS OFF SITE

Runoff = 26.52 cfs @ 13.32 hrs, Volume= 6.107 af, Depth> 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	29,709	98	Paved roads, HSG C
*	4,691,008	68	Woods, HSG C
	4,720,717	68	Weighted Average
	4,691,008		99.37% Pervious Area
	29,709		0.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, SOUTH WEST THROUGH WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.7	1,580	0.0400	0.50		**Shallow Concentrated Flow, B-C, WEST THROUGH WOODS** Forest w/Heavy Litter Kv= 2.5 fps
3.8	2,045	0.0420	9.03	162.47	**Trap/Vee/Rect Channel Flow, C-D, NORTH WEST IN STREAM** Bot.W=5.00' D=2.00' Z= 2.0 '/' Top.W=13.00' n= 0.040 Winding stream, pools & shoals
88.1	3,775	Total			

Summary for Pond 1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.122 ac, 10.11% Impervious, Inflow Depth > 1.05" for 2-YEAR event
Inflow = 3.81 cfs @ 12.44 hrs, Volume= 0.449 af
Outflow = 3.81 cfs @ 12.44 hrs, Volume= 0.449 af, Atten= 0%, Lag= 0.2 min
Primary = 3.81 cfs @ 12.44 hrs, Volume= 0.449 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 515.34' @ 12.44 hrs Surf.Area= 92 sf Storage= 79 cf

Plug-Flow detention time= 0.9 min calculated for 0.447 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (832.8 - 832.3)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900

Summary for Subcatchment 1S: SOUTH SIDE ALONG NORTH ROAD

Runoff = 8.06 cfs @ 12.42 hrs, Volume= 0.929 af, Depth> 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	22,558	98	Paved road, HSG C
*	200,573	72	Woods, HSG C
	223,131	75	Weighted Average
	200,573		89.89% Pervious Area
	22,558		10.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0800	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	157	0.0380	0.97		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.2	391	0.0970	1.56		**Shallow Concentrated Flow, C-D, IN WOODS** Woodland Kv= 5.0 fps
1.4	230	0.0350	2.81		**Shallow Concentrated Flow, D-E, IN ROAD DITCH** Grassed Waterway Kv= 15.0 fps
29.4	878	Total			

Summary for Subcatchment 2S: AREA OF LOT 7+, ALONG HUSSEY ROAD

Runoff = 4.83 cfs @ 12.36 hrs, Volume= 0.522 af, Depth> 1.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	2,095	98	Paved road, HSG C
*	138,415	72	Woods, HSG C
	140,510	72	Weighted Average
	138,415		98.51% Pervious Area
	2,095		1.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		**Sheet Flow, A-B, NORTH IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
8.2	625	0.0640	1.26		**Shallow Concentrated Flow, B-C, NORTH WEST THROUGH** Woodland Kv= 5.0 fps
2.2	150	0.0130	1.14		**Shallow Concentrated Flow, C-D, SOUTH WEST IN ROAD DI** Nearly Bare & Untilled Kv= 10.0 fps
25.1	875	Total			

Summary for Subcatchment 3S: CENTRAL SITE PLUS OFF SITE

Runoff = 67.94 cfs @ 13.23 hrs, Volume= 14.425 af, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	29,709	98	Paved roads, HSG C
*	4,691,008	68	Woods, HSG C
	4,720,717	68	Weighted Average
	4,691,008		99.37% Pervious Area
	29,709		0.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, SOUTH WEST THROUGH WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.7	1,580	0.0400	0.50		**Shallow Concentrated Flow, B-C, WEST THROUGH WOODS** Forest w/Heavy Litter Kv= 2.5 fps
3.8	2,045	0.0420	9.03	162.47	**Trap/Vee/Rect Channel Flow, C-D, NORTH WEST IN STREAM** Bot.W=5.00' D=2.00' Z= 2.0 '/' Top.W=13.00' n= 0.040 Winding stream, pools & shoals
88.1	3,775	Total			

Summary for Pond 1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.122 ac, 10.11% Impervious, Inflow Depth > 2.18" for 10-YEAR event
Inflow = 8.06 cfs @ 12.42 hrs, Volume= 0.929 af
Outflow = 8.06 cfs @ 12.42 hrs, Volume= 0.929 af, Atten= 0%, Lag= 0.2 min
Primary = 8.06 cfs @ 12.42 hrs, Volume= 0.929 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 515.87' @ 12.42 hrs Surf.Area= 118 sf Storage= 134 cf

Plug-Flow detention time= 0.6 min calculated for 0.926 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (816.9 - 816.5)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.02 cfs @ 12.42 hrs HW=515.87' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 8.02 cfs @ 3.25 fps)

Summary for Pond 2P: CULVERT AT HUSSEY ROAD 15", POA 2

Inflow Area =	3.226 ac,	1.49% Impervious,	Inflow Depth >	1.94"	for 10-YEAR event
Inflow =	4.83 cfs @	12.36 hrs,	Volume=	0.522 af	
Outflow =	4.79 cfs @	12.40 hrs,	Volume=	0.522 af,	Atten= 1%, Lag= 1.9 min
Primary =	4.79 cfs @	12.40 hrs,	Volume=	0.522 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 525.78' @ 12.40 hrs Surf.Area= 273 sf Storage= 265 cf

Plug-Flow detention time= 0.9 min calculated for 0.520 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (819.8 - 819.1)

Volume	Invert	Avail.Storage	Storage Description
#1	524.00'	3,549 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
524.00	25	0	0
526.00	304	329	329
528.00	2,916	3,220	3,549

Device	Routing	Invert	Outlet Devices
#1	Primary	524.10'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 524.10' / 523.70' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.78 cfs @ 12.40 hrs HW=525.77' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 4.78 cfs @ 3.89 fps)

Summary for Pond 3P: CULVERT AT HUSSEY ROAD 32", POA 3

Inflow Area =	108.373 ac,	0.63% Impervious,	Inflow Depth >	1.60"	for 10-YEAR event
Inflow =	67.94 cfs @	13.23 hrs,	Volume=	14.425 af	
Outflow =	67.48 cfs @	13.30 hrs,	Volume=	14.383 af,	Atten= 1%, Lag= 4.6 min
Primary =	67.48 cfs @	13.30 hrs,	Volume=	14.383 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 523.00' @ 13.30 hrs Surf.Area= 10,193 sf Storage= 25,539 cf

Plug-Flow detention time= 6.1 min calculated for 14.383 af (100% of inflow)
Center-of-Mass det. time= 5.1 min (879.8 - 874.7)

Volume	Invert	Avail.Storage	Storage Description
#1	517.50'	66,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
517.50	450	0	0
518.00	925	344	344
520.00	3,810	4,735	5,079
522.00	7,710	11,520	16,599
524.00	12,683	20,393	36,992
526.00	17,300	29,983	66,975

Device	Routing	Invert	Outlet Devices
#1	Primary	517.90'	**32.0" Round Culvert** L= 31.0' Ke= 0.900 Inlet / Outlet Invert= 517.90' / 517.30' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 5.59 sf
#2	Primary	522.00'	**10.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=67.43 cfs @ 13.30 hrs HW=523.00' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 41.19 cfs @ 7.38 fps)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 26.24 cfs @ 2.63 fps)

n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.80 cfs @ 12.44 hrs HW=515.34' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.80 cfs @ 2.61 fps)

Summary for Pond 2P: CULVERT AT HUSSEY ROAD 15", POA 2

Inflow Area = 3.226 ac, 1.49% Impervious, Inflow Depth > 0.89" for 2-YEAR event
Inflow = 2.13 cfs @ 12.39 hrs, Volume= 0.240 af
Outflow = 2.13 cfs @ 12.40 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.7 min
Primary = 2.13 cfs @ 12.40 hrs, Volume= 0.240 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 524.93' @ 12.40 hrs Surf.Area= 155 sf Storage= 84 cf

Plug-Flow detention time= 1.0 min calculated for 0.239 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (836.7 - 836.1)

Volume	Invert	Avail.Storage	Storage Description
#1	524.00'	3,549 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
524.00	25	0	0
526.00	304	329	329
528.00	2,916	3,220	3,549

Device	Routing	Invert	Outlet Devices
#1	Primary	524.10'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 524.10' / 523.70' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.12 cfs @ 12.40 hrs HW=524.93' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 2.12 cfs @ 2.45 fps)

Summary for Pond 3P: CULVERT AT HUSSEY ROAD 32", POA 3

Inflow Area = 108.373 ac, 0.63% Impervious, Inflow Depth > 0.68" for 2-YEAR event
Inflow = 26.52 cfs @ 13.32 hrs, Volume= 6.107 af
Outflow = 25.89 cfs @ 13.47 hrs, Volume= 6.079 af, Atten= 2%, Lag= 9.3 min
Primary = 25.89 cfs @ 13.47 hrs, Volume= 6.079 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 520.72' @ 13.47 hrs Surf.Area= 5,216 sf Storage= 8,332 cf

Plug-Flow detention time= 5.2 min calculated for 6.079 af (100% of inflow)
Center-of-Mass det. time= 3.7 min (895.8 - 892.0)

Volume	Invert	Avail.Storage	Storage Description
#1	517.50'	66,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
517.50	450	0	0
518.00	925	344	344
520.00	3,810	4,735	5,079
522.00	7,710	11,520	16,599
524.00	12,683	20,393	36,992
526.00	17,300	29,983	66,975

Device	Routing	Invert	Outlet Devices
#1	Primary	517.90'	**32.0" Round Culvert** L= 31.0' Ke= 0.900 Inlet / Outlet Invert= 517.90' / 517.30' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 5.59 sf
#2	Primary	522.00'	**10.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=25.88 cfs @ 13.47 hrs HW=520.72' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 25.88 cfs @ 4.63 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: SOUTH SIDE ALONG NORTH ROAD

Runoff = 11.82 cfs @ 12.41 hrs, Volume= 1.364 af, Depth> 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	22,558	98	Paved road, HSG C
*	200,573	72	Woods, HSG C
	223,131	75	Weighted Average
	200,573		89.89% Pervious Area
	22,558		10.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0800	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	157	0.0380	0.97		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.2	391	0.0970	1.56		**Shallow Concentrated Flow, C-D, IN WOODS** Woodland Kv= 5.0 fps
1.4	230	0.0350	2.81		**Shallow Concentrated Flow, D-E, IN ROAD DITCH** Grassed Waterway Kv= 15.0 fps
29.4	878	Total			

Summary for Subcatchment 2S: AREA OF LOT 7+, ALONG HUSSEY ROAD

Runoff = 7.28 cfs @ 12.36 hrs, Volume= 0.783 af, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	2,095	98	Paved road, HSG C
*	138,415	72	Woods, HSG C
	140,510	72	Weighted Average
	138,415		98.51% Pervious Area
	2,095		1.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		**Sheet Flow, A-B, NORTH IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
8.2	625	0.0640	1.26		**Shallow Concentrated Flow, B-C, NORTH WEST THROUGH** Woodland Kv= 5.0 fps
2.2	150	0.0130	1.14		**Shallow Concentrated Flow, C-D, SOUTH WEST IN ROAD DI** Nearly Bare & Untilled Kv= 10.0 fps
25.1	875	Total			

Summary for Subcatchment 3S: CENTRAL SITE PLUS OFF SITE

Runoff = 107.26 cfs @ 13.21 hrs, Volume= 22.391 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	29,709	98	Paved roads, HSG C
*	4,691,008	68	Woods, HSG C
	4,720,717	68	Weighted Average
	4,691,008		99.37% Pervious Area
	29,709		0.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, SOUTH WEST THROUGH WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.7	1,580	0.0400	0.50		**Shallow Concentrated Flow, B-C, WEST THROUGH WOODS** Forest w/Heavy Litter Kv= 2.5 fps
3.8	2,045	0.0420	9.03	162.47	**Trap/Vee/Rect Channel Flow, C-D, NORTH WEST IN STREAM** Bot.W=5.00' D=2.00' Z= 2.0 '/' Top.W=13.00' n= 0.040 Winding stream, pools & shoals
88.1	3,775	Total			

Summary for Pond 1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.122 ac, 10.11% Impervious, Inflow Depth > 3.20" for 25-YEAR event
Inflow = 11.82 cfs @ 12.41 hrs, Volume= 1.364 af
Outflow = 11.81 cfs @ 12.42 hrs, Volume= 1.363 af, Atten= 0%, Lag= 0.5 min
Primary = 11.81 cfs @ 12.42 hrs, Volume= 1.363 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 516.37' @ 12.42 hrs Surf.Area= 147 sf Storage= 200 cf

Plug-Flow detention time= 0.5 min calculated for 1.359 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (808.4 - 808.0)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.76 cfs @ 12.42 hrs HW=516.36' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 11.76 cfs @ 3.76 fps)

Summary for Pond 2P: CULVERT AT HUSSEY ROAD 15", POA 2

Inflow Area =	3.226 ac,	1.49% Impervious,	Inflow Depth >	2.91"	for 25-YEAR event
Inflow =	7.28 cfs @	12.36 hrs,	Volume=	0.783 af	
Outflow =	6.66 cfs @	12.46 hrs,	Volume=	0.783 af,	Atten= 8%, Lag= 6.3 min
Primary =	6.66 cfs @	12.46 hrs,	Volume=	0.783 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 526.76' @ 12.46 hrs Surf.Area= 1,301 sf Storage= 942 cf

Plug-Flow detention time= 1.2 min calculated for 0.783 af (100% of inflow)
Center-of-Mass det. time= 1.0 min (811.2 - 810.2)

Volume	Invert	Avail.Storage	Storage Description
#1	524.00'	3,549 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
524.00	25	0	0
526.00	304	329	329
528.00	2,916	3,220	3,549

Device	Routing	Invert	Outlet Devices
#1	Primary	524.10'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 524.10' / 523.70' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.65 cfs @ 12.46 hrs HW=526.76' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 6.65 cfs @ 5.42 fps)

Summary for Pond 3P: CULVERT AT HUSSEY ROAD 32", POA 3

Inflow Area =	108.373 ac,	0.63% Impervious,	Inflow Depth >	2.48"	for 25-YEAR event
Inflow =	107.26 cfs @	13.21 hrs,	Volume=	22.391 af	
Outflow =	106.57 cfs @	13.27 hrs,	Volume=	22.335 af,	Atten= 1%, Lag= 3.6 min
Primary =	106.57 cfs @	13.27 hrs,	Volume=	22.335 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 523.76' @ 13.27 hrs Surf.Area= 12,085 sf Storage= 34,015 cf

Plug-Flow detention time= 5.8 min calculated for 22.261 af (99% of inflow)
Center-of-Mass det. time= 5.0 min (871.0 - 865.9)

Volume	Invert	Avail.Storage	Storage Description
#1	517.50'	66,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
517.50	450	0	0
518.00	925	344	344
520.00	3,810	4,735	5,079
522.00	7,710	11,520	16,599
524.00	12,683	20,393	36,992
526.00	17,300	29,983	66,975

Device	Routing	Invert	Outlet Devices
#1	Primary	517.90'	**32.0" Round Culvert** L= 31.0' Ke= 0.900 Inlet / Outlet Invert= 517.90' / 517.30' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 5.59 sf
#2	Primary	522.00'	**10.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=106.46 cfs @ 13.27 hrs HW=523.76' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 45.16 cfs @ 8.09 fps)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 61.30 cfs @ 3.49 fps)

Summary for Subcatchment 3D: CENTRAL SITE PLUS OFF SITE

Runoff = 26.46 cfs @ 13.32 hrs, Volume= 6.095 af, Depth> 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	29,709	98	Paved roads, HSG C
*	4,653,982	68	Woods, HSG C
*	7,598	98	Roofs & Driveways, HSG C
	11,283	74	>75% Grass cover, Good, HSG C
*	889	98	NEW Roofs, HSG C
*	7,627	74	NEW >75% Grass cover, Good, HSG C
	4,711,088	68	Weighted Average
	4,672,892		99.19% Pervious Area
	38,196		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, SOUTH WEST THROUGH WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.7	1,580	0.0400	0.50		**Shallow Concentrated Flow, B-C, WEST THROUGH WOODS** Forest w/Heavy Litter Kv= 2.5 fps
3.8	2,045	0.0420	9.03	162.47	**Trap/Vee/Rect Channel Flow, C-D, NORTH WEST IN STREAI** Bot.W=5.00' D=2.00' Z= 2.0 '/' Top.W=13.00' n= 0.040 Winding stream, pools & shoals
88.1	3,775	Total			

Summary for Subcatchment 10.1D: ROAD SIDE OF LOT 5

Runoff = 0.93 cfs @ 12.22 hrs, Volume= 0.083 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	3,269	98	Existing Paved roads, HSG C
	1,948	96	Gravel surface, HSG C
*	24,846	72	Woods, HSG C
*	1,176	98	Roofs, HSG C
	5,538	74	>75% Grass cover, Good, HSG C
	36,777	77	Weighted Average
	32,332		87.91% Pervious Area
	4,445		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	123	0.0325	1.26		**Shallow Concentrated Flow, B-C, ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
15.2	223	Total			

Summary for Subcatchment 10.2D: FRONT BETWEEN LOTS 4 + 5

Runoff = 0.51 cfs @ 12.12 hrs, Volume= 0.036 af, Depth> 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	3,188	98	Existing Paved road, HSG C
	883	96	Gravel surface, HSG C
*	8,832	72	Woods, HSG C
	1,037	74	>75% Grass cover, Good, HSG C
	13,940	80	Weighted Average
	10,752		77.13% Pervious Area
	3,188		22.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	30	0.0800	0.11		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
3.2	150	0.0240	0.77		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
7.8	180	Total			

Summary for Subcatchment 10.3D: FRONT BETWEEN LOTS 3 + 4

Runoff = 0.67 cfs @ 12.28 hrs, Volume= 0.066 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	5,121	98	Paved road, HSG C
*	22,925	72	Woods, HSG C
	611	96	Gravel surface, HSG C
	833	74	>75% Grass cover, Good, HSG C
	29,490	77	Weighted Average
	24,369		82.63% Pervious Area
	5,121		17.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
2.5	270	0.0323	1.80		**Shallow Concentrated Flow, B-C, TO ROAD DITCH** Nearly Bare & Untilled Kv= 10.0 fps
19.4	370	Total			

Summary for Subcatchment 10D: LOT 8 DEVELOPED AREA

Runoff = 1.97 cfs @ 12.72 hrs, Volume= 0.299 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	10,980	98	Existing Paved roads, HSG C
	657	96	Gravel surface, HSG C
*	132,233	72	Woods, HSG C
*	1,803	98	Roofs, HSG C
	12,509	74	>75% Grass cover, Good, HSG C
	158,182	74	Weighted Average
	145,399		91.92% Pervious Area
	12,783		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.1	755	0.0370	0.96		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.1	230	0.0350	0.94		**Shallow Concentrated Flow, C-D, ROAD DITCH** Woodland Kv= 5.0 fps
48.8	1,135	Total			

Summary for Subcatchment 20D: AREA OF LOT 7+, ALONG HUSSEY ROAD

Runoff = 1.00 cfs @ 12.26 hrs, Volume= 0.095 af, Depth> 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	2,508	98	Paved road, HSG C
*	36,946	72	Woods, HSG C
	4,675	74	>75% Grass cover, Good, HSG C
	744	98	Roofs, HSG C
*	2,114	98	EX. Paved roads, HSG C
	46,987	75	Weighted Average
	41,621		88.58% Pervious Area
	5,366		11.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, NORTHWEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.4	136	0.1000	1.58		**Shallow Concentrated Flow, NORTH WEST THROUGH WOOD** Woodland Kv= 5.0 fps
2.2	107	0.0130	0.80		**Shallow Concentrated Flow, SOUTH WEST IN ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
17.2	343	Total			

Summary for Subcatchment 21D: LOT 7

Runoff = 0.33 cfs @ 12.10 hrs, Volume= 0.023 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	1,889	98	Paved Driveway, HSG C
	143	98	Roofs, HSG C
	2,693	74	>75% Grass cover, Good, HSG C
	5,332	70	Woods, Good, HSG C
	10,057	77	Weighted Average
	8,025		79.80% Pervious Area
	2,032		20.20% Impervious Area

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

Summary for Subcatchment 22D: LOT 6 + 7

Runoff = 0.62 cfs @ 12.66 hrs, Volume= 0.089 af, Depth> 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	2,595	98	Paved Driveway, HSG C
	1,176	98	Roofs, HSG C
	7,117	74	>75% Grass cover, Good, HSG C
	38,952	70	Woods, Good, HSG C
	49,840	73	Weighted Average
	46,069		92.43% Pervious Area
	3,771		7.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.8	140	0.0286	0.06		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	76	0.0800	0.71		**Shallow Concentrated Flow, B-C** Forest w/Heavy Litter Kv= 2.5 fps
0.6	150	0.0666	3.87		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
44.2	366	Total			

Summary for Subcatchment 23D: BACK OF LOT 5

Runoff = 0.15 cfs @ 12.10 hrs, Volume= 0.010 af, Depth> 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	888	98	Roofs & Driveways, HSG C
	3,050	74	>75% Grass cover, Good, HSG C
	3,938	79	Weighted Average
	3,050		77.45% Pervious Area
	888		22.55% Impervious Area

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

Summary for Subcatchment 24D: LOT 6+8

Runoff = 0.52 cfs @ 12.25 hrs, Volume= 0.049 af, Depth> 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

	Area (sf)	CN	Description
*	3,038	98	Paved Driveway, HSG C
	858	98	Roofs, HSG C
	4,669	74	>75% Grass cover, Good, HSG C
	15,491	70	Woods, Good, HSG C
	24,056	75	Weighted Average
	20,160		83.80% Pervious Area
	3,896		16.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	30	0.1333	1.83		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.6	137	0.0729	4.05		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
16.9	217	Total			

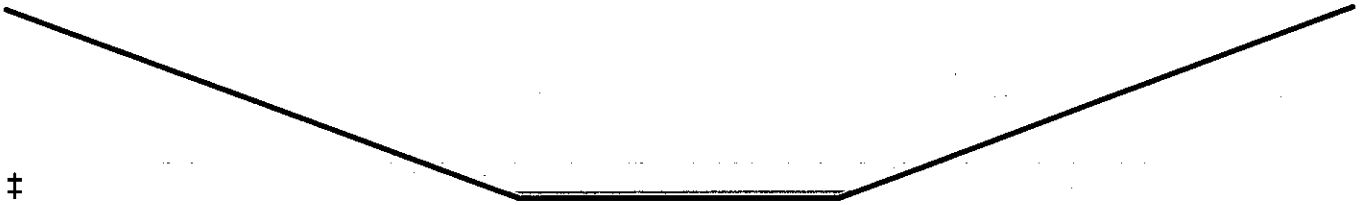
Summary for Reach 10.3R: ROAD DITCH

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 0.41" for 2-YEAR event
Inflow = 0.67 cfs @ 12.39 hrs, Volume= 0.034 af
Outflow = 0.65 cfs @ 12.48 hrs, Volume= 0.034 af, Atten= 2%, Lag= 5.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.41 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 7.9 min

Peak Storage= 133 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 221.09 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 286.0' Slope= 0.0311 '/'
Inlet Invert= 576.90', Outlet Invert= 568.00'



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Summary for Reach 10.4R: ROAD DITCH

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 0.47" for 2-YEAR event
Inflow = 0.57 cfs @ 12.29 hrs, Volume= 0.026 af
Outflow = 0.55 cfs @ 12.41 hrs, Volume= 0.026 af, Atten= 4%, Lag= 7.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.21 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 9.7 min

Peak Storage= 138 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 190.07 cfs

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.02 cfs @ 12.63 hrs HW=515.23' (Free Discharge)
↑**1=Culvert** (Inlet Controls 3.02 cfs @ 2.45 fps)

Summary for Pond 2.1P: CULVERT AT HUSSEY ROAD 15", POA 2

Inflow Area = 3.096 ac, 11.83% Impervious, Inflow Depth > 0.98" for 2-YEAR event
Inflow = 1.70 cfs @ 12.40 hrs, Volume= 0.252 af
Outflow = 1.70 cfs @ 12.41 hrs, Volume= 0.252 af, Atten= 0%, Lag= 0.6 min
Primary = 1.70 cfs @ 12.41 hrs, Volume= 0.252 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 524.83' @ 12.41 hrs Surf.Area= 141 sf Storage= 69 cf

Plug-Flow detention time= 1.0 min calculated for 0.251 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (844.5 - 843.9)

Volume	Invert	Avail.Storage	Storage Description
#1	524.00'	3,549 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
524.00	25	0	0
526.00	304	329	329
528.00	2,916	3,220	3,549

Device	Routing	Invert	Outlet Devices
#1	Primary	524.10'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 524.10' / 523.70' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.70 cfs @ 12.41 hrs HW=524.83' (Free Discharge)
↑**1=Culvert** (Inlet Controls 1.70 cfs @ 2.29 fps)

Summary for Pond 3.1P: CULVERT AT HUSSEY ROAD 32", POA 3

Inflow Area = 108.152 ac, 0.81% Impervious, Inflow Depth > 0.68" for 2-YEAR event
Inflow = 26.46 cfs @ 13.32 hrs, Volume= 6.095 af
Outflow = 25.84 cfs @ 13.47 hrs, Volume= 6.066 af, Atten= 2%, Lag= 9.3 min
Primary = 25.84 cfs @ 13.47 hrs, Volume= 6.066 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 520.72' @ 13.47 hrs Surf.Area= 5,205 sf Storage= 8,302 cf

Plug-Flow detention time= 5.2 min calculated for 6.066 af (100% of inflow)
Center-of-Mass det. time= 3.7 min (895.8 - 892.0)

Volume	Invert	Avail.Storage	Storage Description
#1	517.50'	66,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
517.50	450	0	0
518.00	925	344	344
520.00	3,810	4,735	5,079
522.00	7,710	11,520	16,599
524.00	12,683	20,393	36,992
526.00	17,300	29,983	66,975

Device	Routing	Invert	Outlet Devices
#1	Primary	517.90'	**32.0" Round Culvert** L= 31.0' Ke= 0.900 Inlet / Outlet Invert= 517.90' / 517.30' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 5.59 sf
#2	Primary	522.00'	**10.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=25.83 cfs @ 13.47 hrs HW=520.71' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 25.83 cfs @ 4.62 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 21P: LOT 7 DW CULVERT

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 1.01" for 2-YEAR event
Inflow = 0.99 cfs @ 12.44 hrs, Volume= 0.170 af
Outflow = 0.99 cfs @ 12.44 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.1 min
Primary = 0.99 cfs @ 12.44 hrs, Volume= 0.170 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 540.54' @ 12.44 hrs Surf.Area= 24 sf Storage= 11 cf

Plug-Flow detention time= 0.3 min calculated for 0.170 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (837.4 - 837.2)

Volume	Invert	Avail.Storage	Storage Description
#1	540.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
540.00	15	0	0
542.00	50	65	65
544.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	540.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 540.00' / 539.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.99 cfs @ 12.44 hrs HW=540.54' (Free Discharge)
↑**1=Culvert** (Inlet Controls 0.99 cfs @ 1.97 fps)

Summary for Pond 22P: LOT 7 DW CULVERT

Inflow Area = 1.235 ac, 8.66% Impervious, Inflow Depth > 0.96" for 2-YEAR event
Inflow = 0.65 cfs @ 12.70 hrs, Volume= 0.099 af
Outflow = 0.65 cfs @ 12.71 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.1 min
Primary = 0.65 cfs @ 12.71 hrs, Volume= 0.098 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 544.43' @ 12.71 hrs Surf.Area= 22 sf Storage= 8 cf

Plug-Flow detention time= 0.3 min calculated for 0.098 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (850.6 - 850.3)

Volume	Invert	Avail.Storage	Storage Description
#1	544.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.00	15	0	0
546.00	50	65	65
548.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	544.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 544.00' / 543.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.64 cfs @ 12.71 hrs HW=544.42' (Free Discharge)
↑**1=Culvert** (Inlet Controls 0.64 cfs @ 1.75 fps)

Summary for Pond 25P: LOT 8 DW CULVERT

Inflow Area = 0.552 ac, 16.20% Impervious, Inflow Depth > 1.06" for 2-YEAR event
Inflow = 0.52 cfs @ 12.25 hrs, Volume= 0.049 af
Outflow = 0.52 cfs @ 12.25 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.1 min
Primary = 0.52 cfs @ 12.25 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 544.38' @ 12.25 hrs Surf.Area= 22 sf Storage= 7 cf

Plug-Flow detention time= 0.5 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (823.1 - 822.8)

Volume	Invert	Avail.Storage	Storage Description
#1	544.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.00	15	0	0
546.00	50	65	65
548.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	544.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 544.00' / 543.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.51 cfs @ 12.25 hrs HW=544.38' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.51 cfs @ 1.65 fps)

Summary for Pond 26P: LEVEL SPREADER

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 1.01" for 2-YEAR event
Inflow = 0.99 cfs @ 12.44 hrs, Volume= 0.170 af
Outflow = 0.99 cfs @ 12.45 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.6 min
Primary = 0.99 cfs @ 12.45 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 539.06' @ 12.45 hrs Surf.Area= 495 sf Storage= 492 cf

Plug-Flow detention time= 29.4 min calculated for 0.159 af (94% of inflow)
Center-of-Mass det. time= 9.1 min (846.5 - 837.4)

Volume	Invert	Avail.Storage	Storage Description
#1	537.00'	1,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
537.00	25	0	0
538.00	210	118	118
540.00	747	957	1,075

Device	Routing	Invert	Outlet Devices
#1	Primary	539.00'	**25.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.98 cfs @ 12.45 hrs HW=539.06' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.98 cfs @ 0.63 fps)

Summary for Pond L1+2P: ROAD DITCH @ DW

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 1.17" for 2-YEAR event
Inflow = 0.67 cfs @ 12.28 hrs, Volume= 0.066 af
Outflow = 0.67 cfs @ 12.29 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.10 cfs @ 11.85 hrs, Volume= 0.040 af
Primary = 0.57 cfs @ 12.29 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 585.50' @ 12.29 hrs Surf.Area= 32 sf Storage= 11 cf

Plug-Flow detention time= 0.2 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (820.2 - 820.0)

Volume	Invert	Avail.Storage	Storage Description
#1	585.00'	488 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
585.00	10	0	0
586.00	55	33	33
588.00	400	455	488

Device	Routing	Invert	Outlet Devices
#1	Primary	585.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 585.00' / 584.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	587.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	585.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.85 hrs HW=585.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.57 cfs @ 12.29 hrs HW=585.50' (Free Discharge)
├**1=Culvert** (Barrel Controls 0.57 cfs @ 2.14 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L3+4P: ROAD DITCH @ DW

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 0.75" for 2-YEAR event
Inflow = 0.77 cfs @ 12.38 hrs, Volume= 0.063 af
Outflow = 0.77 cfs @ 12.39 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.10 cfs @ 11.80 hrs, Volume= 0.029 af
Primary = 0.67 cfs @ 12.39 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 577.54' @ 12.39 hrs Surf.Area= 47 sf Storage= 21 cf

Plug-Flow detention time= 0.4 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (784.7 - 784.3)

Volume	Invert	Avail.Storage	Storage Description
#1	577.00'	307 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
577.00	30	0	0
578.00	61	46	46
580.00	100	161	207
580.50	300	100	307

Device	Routing	Invert	Outlet Devices
#1	Primary	577.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 577.00' / 576.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	580.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	577.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.80 hrs HW=577.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.66 cfs @ 12.39 hrs HW=577.54' (Free Discharge)
├**1=Culvert** (Barrel Controls 0.66 cfs @ 2.23 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L5P: ROAD DITCH @ DW

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 0.76" for 2-YEAR event
Inflow = 1.37 cfs @ 12.25 hrs, Volume= 0.117 af
Outflow = 1.37 cfs @ 12.26 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.10 cfs @ 11.75 hrs, Volume= 0.046 af
Primary = 1.27 cfs @ 12.26 hrs, Volume= 0.071 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 567.79' @ 12.26 hrs Surf.Area= 46 sf Storage= 30 cf

Plug-Flow detention time= 0.3 min calculated for 0.117 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (798.8 - 798.5)

Volume	Invert	Avail.Storage	Storage Description
#1	567.00'	361 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
567.00	30	0	0
568.00	50	40	40
570.00	137	187	227
570.50	400	134	361

Device	Routing	Invert	Outlet Devices
#1	Primary	567.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 567.00' / 566.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	570.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	567.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.75 hrs HW=567.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.27 cfs @ 12.26 hrs HW=567.78' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.27 cfs @ 2.64 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 3D: CENTRAL SITE PLUS OFF SITE

Runoff = 67.80 cfs @ 13.23 hrs, Volume= 14.396 af, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	29,709	98	Paved roads, HSG C
*	4,653,982	68	Woods, HSG C
*	7,598	98	Roofs & Driveways, HSG C
	11,283	74	>75% Grass cover, Good, HSG C
*	889	98	NEW Roofs, HSG C
*	7,627	74	NEW >75% Grass cover, Good, HSG C
	4,711,088	68	Weighted Average
	4,672,892		99.19% Pervious Area
	38,196		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, SOUTH WEST THROUGH WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.7	1,580	0.0400	0.50		**Shallow Concentrated Flow, B-C, WEST THROUGH WOODS** Forest w/Heavy Litter Kv= 2.5 fps
3.8	2,045	0.0420	9.03	162.47	**Trap/Vee/Rect Channel Flow, C-D, NORTH WEST IN STREAM** Bot.W=5.00' D=2.00' Z= 2.0 '/' Top.W=13.00' n= 0.040 Winding stream, pools & shoals
88.1	3,775	Total			

Summary for Subcatchment 10.1D: ROAD SIDE OF LOT 5

Runoff = 1.88 cfs @ 12.21 hrs, Volume= 0.166 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	3,269	98	Existing Paved roads, HSG C
	1,948	96	Gravel surface, HSG C
*	24,846	72	Woods, HSG C
*	1,176	98	Roofs, HSG C
	5,538	74	>75% Grass cover, Good, HSG C
	36,777	77	Weighted Average
	32,332		87.91% Pervious Area
	4,445		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	123	0.0325	1.26		**Shallow Concentrated Flow, B-C, ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
15.2	223	Total			

Summary for Subcatchment 10.2D: FRONT BETWEEN LOTS 4 + 5

Runoff = 0.98 cfs @ 12.11 hrs, Volume= 0.070 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	3,188	98	Existing Paved road, HSG C
	883	96	Gravel surface, HSG C
*	8,832	72	Woods, HSG C
	1,037	74	>75% Grass cover, Good, HSG C
	13,940	80	Weighted Average
	10,752		77.13% Pervious Area
	3,188		22.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	30	0.0800	0.11		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
3.2	150	0.0240	0.77		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
7.8	180	Total			

Summary for Subcatchment 10.3D: FRONT BETWEEN LOTS 3 + 4

Runoff = 1.37 cfs @ 12.27 hrs, Volume= 0.133 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	5,121	98	Paved road, HSG C
*	22,925	72	Woods, HSG C
	611	96	Gravel surface, HSG C
	833	74	>75% Grass cover, Good, HSG C
	29,490	77	Weighted Average
	24,369		82.63% Pervious Area
	5,121		17.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
2.5	270	0.0323	1.80		**Shallow Concentrated Flow, B-C, TO ROAD DITCH** Nearly Bare & Untilled Kv= 10.0 fps
19.4	370	Total			

Summary for Subcatchment 10D: LOT 8 DEVELOPED AREA

Runoff = 4.26 cfs @ 12.68 hrs, Volume= 0.630 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	10,980	98	Existing Paved roads, HSG C
	657	96	Gravel surface, HSG C
*	132,233	72	Woods, HSG C
*	1,803	98	Roofs, HSG C
	12,509	74	>75% Grass cover, Good, HSG C
	158,182	74	Weighted Average
	145,399		91.92% Pervious Area
	12,783		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.1	755	0.0370	0.96		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.1	230	0.0350	0.94		**Shallow Concentrated Flow, C-D, ROAD DITCH** Woodland Kv= 5.0 fps
48.8	1,135	Total			

Summary for Subcatchment 20D: AREA OF LOT 7+, ALONG HUSSEY ROAD

Runoff = 2.12 cfs @ 12.24 hrs, Volume= 0.197 af, Depth> 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	2,508	98	Paved road, HSG C
*	36,946	72	Woods, HSG C
	4,675	74	>75% Grass cover, Good, HSG C
	744	98	Roofs, HSG C
*	2,114	98	EX. Paved roads, HSG C
	46,987	75	Weighted Average
	41,621		88.58% Pervious Area
	5,366		11.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, NORTHWEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.4	136	0.1000	1.58		**Shallow Concentrated Flow, NORTH WEST THROUGH WOO** Woodland Kv= 5.0 fps
2.2	107	0.0130	0.80		**Shallow Concentrated Flow, SOUTH WEST IN ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
17.2	343	Total			

Summary for Subcatchment 21D: LOT 7

Runoff = 0.67 cfs @ 12.09 hrs, Volume= 0.045 af, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	1,889	98	Paved Driveway, HSG C
	143	98	Roofs, HSG C
	2,693	74	>75% Grass cover, Good, HSG C
	5,332	70	Woods, Good, HSG C
	10,057	77	Weighted Average
	8,025		79.80% Pervious Area
	2,032		20.20% Impervious Area

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

Summary for Subcatchment 22D: LOT 6 + 7

Runoff = 1.36 cfs @ 12.63 hrs, Volume= 0.191 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	2,595	98	Paved Driveway, HSG C
	1,176	98	Roofs, HSG C
	7,117	74	>75% Grass cover, Good, HSG C
	38,952	70	Woods, Good, HSG C
	49,840	73	Weighted Average
	46,069		92.43% Pervious Area
	3,771		7.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.8	140	0.0286	0.06		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	76	0.0800	0.71		**Shallow Concentrated Flow, B-C** Forest w/Heavy Litter Kv= 2.5 fps
0.6	150	0.0666	3.87		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
44.2	366	Total			

Summary for Subcatchment 23D: BACK OF LOT 5

Runoff = 0.28 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	888	98	Roofs & Driveways, HSG C
	3,050	74	>75% Grass cover, Good, HSG C
	3,938	79	Weighted Average
	3,050		77.45% Pervious Area
	888		22.55% Impervious Area

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

Summary for Subcatchment 24D: LOT 6+8

Runoff = 1.10 cfs @ 12.24 hrs, Volume= 0.101 af, Depth> 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.90"

	Area (sf)	CN	Description
*	3,038	98	Paved Driveway, HSG C
	858	98	Roofs, HSG C
	4,669	74	>75% Grass cover, Good, HSG C
	15,491	70	Woods, Good, HSG C
	24,056	75	Weighted Average
	20,160		83.80% Pervious Area
	3,896		16.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	30	0.1333	1.83		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.6	137	0.0729	4.05		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
16.9	217	Total			

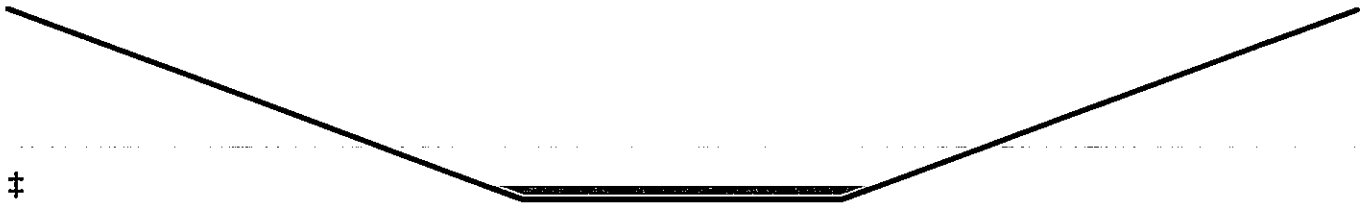
Summary for Reach 10.3R: ROAD DITCH

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 1.15" for 10-YEAR event
Inflow = 1.58 cfs @ 12.34 hrs, Volume= 0.095 af
Outflow = 1.56 cfs @ 12.41 hrs, Volume= 0.095 af, Atten= 1%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.93 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.66 fps, Avg. Travel Time= 7.3 min

Peak Storage= 232 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 221.09 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 286.0' Slope= 0.0311 '/'
Inlet Invert= 576.90', Outlet Invert= 568.00'



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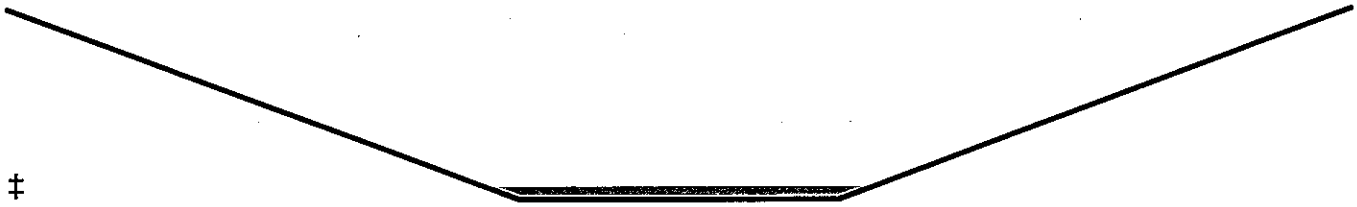
Summary for Reach 10.4R: ROAD DITCH

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 1.27" for 10-YEAR event
Inflow = 1.27 cfs @ 12.28 hrs, Volume= 0.072 af
Outflow = 1.24 cfs @ 12.37 hrs, Volume= 0.072 af, Atten= 2%, Lag= 5.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.61 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.56 fps, Avg. Travel Time= 8.9 min

Peak Storage= 231 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 190.07 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 300.0' Slope= 0.0230 '/'
Inlet Invert= 584.90', Outlet Invert= 578.00'



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Summary for Reach 10R: ROAD DITCH

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 1.26" for 10-YEAR event
Inflow = 3.09 cfs @ 12.24 hrs, Volume= 0.194 af
Outflow = 2.97 cfs @ 12.39 hrs, Volume= 0.193 af, Atten= 4%, Lag= 8.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.09 fps, Min. Travel Time= 4.3 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 13.3 min

Peak Storage= 765 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 268.99 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 791.0' Slope= 0.0618 '/'
Inlet Invert= 566.90', Outlet Invert= 518.00'

‡

Summary for Reach 22R: THROUGH WOODS

Inflow Area = 0.090 ac, 22.55% Impervious, Inflow Depth > 2.53" for 10-YEAR event
Inflow = 0.28 cfs @ 12.09 hrs, Volume= 0.019 af
Outflow = 0.14 cfs @ 12.72 hrs, Volume= 0.018 af, Atten= 51%, Lag= 37.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.17 fps, Min. Travel Time= 26.8 min
Avg. Velocity = 0.07 fps, Avg. Travel Time= 66.2 min

Peak Storage= 222 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 5.31 cfs

5.00' x 1.00' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 280.0' Slope= 0.0357 '/'
Inlet Invert= 568.00', Outlet Invert= 558.00'

‡

Summary for Reach 24R: THROUGH WOODS

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 2.05" for 10-YEAR event
Inflow = 2.18 cfs @ 12.44 hrs, Volume= 0.345 af
Outflow = 2.18 cfs @ 12.54 hrs, Volume= 0.342 af, Atten= 0%, Lag= 5.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.41 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.20 fps, Avg. Travel Time= 8.2 min

Peak Storage= 527 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 1.00' Flow Area= 30.0 sf, Capacity= 33.23 cfs

25.00' x 1.00' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 5.0 '/' Top Width= 35.00'
Length= 100.0' Slope= 0.1100 '/'
Inlet Invert= 539.00', Outlet Invert= 528.00'

‡

Summary for Pond 1.1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.473 ac, 10.71% Impervious, Inflow Depth > 1.81" for 10-YEAR event
Inflow = 6.63 cfs @ 12.56 hrs, Volume= 0.823 af
Outflow = 6.63 cfs @ 12.57 hrs, Volume= 0.823 af, Atten= 0%, Lag= 0.2 min
Primary = 6.63 cfs @ 12.57 hrs, Volume= 0.823 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 515.70' @ 12.57 hrs Surf.Area= 110 sf Storage= 115 cf

Plug-Flow detention time= 0.6 min calculated for 0.820 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (817.6 - 817.3)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.61 cfs @ 12.57 hrs HW=515.70' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 6.61 cfs @ 3.06 fps)

Summary for Pond 2.1P: CULVERT AT HUSSEY ROAD 15", POA 2

Inflow Area = 3.096 ac, 11.83% Impervious, Inflow Depth > 2.09" for 10-YEAR event
Inflow = 3.99 cfs @ 12.30 hrs, Volume= 0.539 af
Outflow = 3.98 cfs @ 12.32 hrs, Volume= 0.538 af, Atten= 0%, Lag= 1.4 min
Primary = 3.98 cfs @ 12.32 hrs, Volume= 0.538 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 525.45' @ 12.32 hrs Surf.Area= 228 sf Storage= 183 cf

Plug-Flow detention time= 0.8 min calculated for 0.538 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (825.1 - 824.5)

Volume	Invert	Avail.Storage	Storage Description
#1	524.00'	3,549 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
524.00	25	0	0
526.00	304	329	329
528.00	2,916	3,220	3,549

Device	Routing	Invert	Outlet Devices
#1	Primary	524.10'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 524.10' / 523.70' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.96 cfs @ 12.32 hrs HW=525.44' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.96 cfs @ 3.22 fps)

Summary for Pond 3.1P: CULVERT AT HUSSEY ROAD 32", POA 3

Inflow Area = 108.152 ac, 0.81% Impervious, Inflow Depth > 1.60" for 10-YEAR event
Inflow = 67.80 cfs @ 13.23 hrs, Volume= 14.396 af
Outflow = 67.34 cfs @ 13.30 hrs, Volume= 14.353 af, Atten= 1%, Lag= 4.6 min
Primary = 67.34 cfs @ 13.30 hrs, Volume= 14.353 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 523.00' @ 13.30 hrs Surf.Area= 10,186 sf Storage= 25,508 cf

Plug-Flow detention time= 6.1 min calculated for 14.306 af (99% of inflow)
Center-of-Mass det. time= 5.1 min (879.8 - 874.7)

Volume	Invert	Avail.Storage	Storage Description
#1	517.50'	66,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
517.50	450	0	0
518.00	925	344	344
520.00	3,810	4,735	5,079
522.00	7,710	11,520	16,599
524.00	12,683	20,393	36,992
526.00	17,300	29,983	66,975

Device	Routing	Invert	Outlet Devices
#1	Primary	517.90'	**32.0" Round Culvert** L= 31.0' Ke= 0.900 Inlet / Outlet Invert= 517.90' / 517.30' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 5.59 sf
#2	Primary	522.00'	**10.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=67.29 cfs @ 13.30 hrs HW=523.00' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 41.18 cfs @ 7.37 fps)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 26.11 cfs @ 2.62 fps)

Summary for Pond 21P: LOT 7 DW CULVERT

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 2.11" for 10-YEAR event
Inflow = 2.18 cfs @ 12.43 hrs, Volume= 0.355 af
Outflow = 2.18 cfs @ 12.43 hrs, Volume= 0.355 af, Atten= 0%, Lag= 0.2 min
Primary = 2.18 cfs @ 12.43 hrs, Volume= 0.355 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 540.85' @ 12.43 hrs Surf.Area= 30 sf Storage= 19 cf

Plug-Flow detention time= 0.2 min calculated for 0.354 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (820.9 - 820.8)

Volume	Invert	Avail.Storage	Storage Description
#1	540.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
540.00	15	0	0
542.00	50	65	65
544.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	540.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 540.00' / 539.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.18 cfs @ 12.43 hrs HW=540.84' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 2.18 cfs @ 2.47 fps)

Summary for Pond 22P: LOT 7 DW CULVERT

Inflow Area = 1.235 ac, 8.66% Impervious, Inflow Depth > 2.04" for 10-YEAR event
Inflow = 1.50 cfs @ 12.64 hrs, Volume= 0.209 af
Outflow = 1.50 cfs @ 12.65 hrs, Volume= 0.209 af, Atten= 0%, Lag= 0.1 min
Primary = 1.50 cfs @ 12.65 hrs, Volume= 0.209 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 544.68' @ 12.65 hrs Surf.Area= 27 sf Storage= 14 cf

Plug-Flow detention time= 0.3 min calculated for 0.209 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (833.1 - 833.0)

Volume	Invert	Avail.Storage	Storage Description
#1	544.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.00	15	0	0
546.00	50	65	65
548.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	544.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 544.00' / 543.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.50 cfs @ 12.65 hrs HW=544.68' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.50 cfs @ 2.21 fps)

Summary for Pond 25P: LOT 8 DW CULVERT

Inflow Area = 0.552 ac, 16.20% Impervious, Inflow Depth > 2.19" for 10-YEAR event
Inflow = 1.10 cfs @ 12.24 hrs, Volume= 0.101 af
Outflow = 1.10 cfs @ 12.24 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.1 min
Primary = 1.10 cfs @ 12.24 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 544.57' @ 12.24 hrs Surf.Area= 25 sf Storage= 11 cf

Plug-Flow detention time= 0.4 min calculated for 0.101 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (807.0 - 806.8)

Volume	Invert	Avail.Storage	Storage Description
#1	544.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.00	15	0	0
546.00	50	65	65
548.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	544.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 544.00' / 543.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.09 cfs @ 12.24 hrs HW=544.57' (Free Discharge)
↑**1=Culvert** (Inlet Controls 1.09 cfs @ 2.02 fps)

Summary for Pond 26P: LEVEL SPREADER

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 2.11" for 10-YEAR event
Inflow = 2.18 cfs @ 12.43 hrs, Volume= 0.355 af
Outflow = 2.18 cfs @ 12.44 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.3 min
Primary = 2.18 cfs @ 12.44 hrs, Volume= 0.345 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 539.11' @ 12.44 hrs Surf.Area= 507 sf Storage= 514 cf

Plug-Flow detention time= 16.4 min calculated for 0.345 af (97% of inflow)
Center-of-Mass det. time= 5.9 min (826.8 - 820.9)

Volume	Invert	Avail.Storage	Storage Description
#1	537.00'	1,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
537.00	25	0	0
538.00	210	118	118
540.00	747	957	1,075

Device	Routing	Invert	Outlet Devices
#1	Primary	539.00'	**25.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.17 cfs @ 12.44 hrs HW=539.11' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.17 cfs @ 0.82 fps)

Summary for Pond L1+2P: ROAD DITCH @ DW

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 2.35" for 10-YEAR event
Inflow = 1.37 cfs @ 12.27 hrs, Volume= 0.133 af
Outflow = 1.37 cfs @ 12.28 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.10 cfs @ 11.50 hrs, Volume= 0.061 af
Primary = 1.27 cfs @ 12.28 hrs, Volume= 0.072 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 585.78' @ 12.28 hrs Surf.Area= 45 sf Storage= 22 cf

Plug-Flow detention time= 0.2 min calculated for 0.132 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (804.9 - 804.7)

Volume	Invert	Avail.Storage	Storage Description
#1	585.00'	488 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
585.00	10	0	0
586.00	55	33	33
588.00	400	455	488

Device	Routing	Invert	Outlet Devices
#1	Primary	585.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 585.00' / 584.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	587.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	585.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.50 hrs HW=585.05' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.26 cfs @ 12.28 hrs HW=585.78' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.26 cfs @ 2.64 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L3+4P: ROAD DITCH @ DW

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 1.70" for 10-YEAR event
Inflow = 1.68 cfs @ 12.34 hrs, Volume= 0.142 af
Outflow = 1.68 cfs @ 12.34 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.10 cfs @ 11.65 hrs, Volume= 0.046 af
Primary = 1.58 cfs @ 12.34 hrs, Volume= 0.095 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 577.90' @ 12.34 hrs Surf.Area= 58 sf Storage= 40 cf

Plug-Flow detention time= 0.4 min calculated for 0.142 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (774.8 - 774.5)

Volume	Invert	Avail.Storage	Storage Description
#1	577.00'	307 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
577.00	30	0	0
578.00	61	46	46
580.00	100	161	207
580.50	300	100	307

Device	Routing	Invert	Outlet Devices
#1	Primary	577.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 577.00' / 576.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	580.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	577.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.65 hrs HW=577.08' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.58 cfs @ 12.34 hrs HW=577.90' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.58 cfs @ 2.80 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L5P: ROAD DITCH @ DW

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 1.70" for 10-YEAR event
Inflow = 3.19 cfs @ 12.23 hrs, Volume= 0.261 af
Outflow = 3.19 cfs @ 12.24 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.10 cfs @ 11.25 hrs, Volume= 0.068 af
Primary = 3.09 cfs @ 12.24 hrs, Volume= 0.194 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 568.58' @ 12.24 hrs Surf.Area= 75 sf Storage= 76 cf

Plug-Flow detention time= 0.4 min calculated for 0.260 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (784.2 - 783.9)

Volume	Invert	Avail.Storage	Storage Description
#1	567.00'	361 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
567.00	30	0	0
568.00	50	40	40
570.00	137	187	227
570.50	400	134	361

Device	Routing	Invert	Outlet Devices
#1	Primary	567.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 567.00' / 566.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	570.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	567.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.25 hrs HW=567.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=3.08 cfs @ 12.24 hrs HW=568.58' (Free Discharge)
├**1=Culvert** (Barrel Controls 3.08 cfs @ 3.92 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 3D: CENTRAL SITE PLUS OFF SITE

Runoff = 107.04 cfs @ 13.21 hrs, Volume= 22.345 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	29,709	98	Paved roads, HSG C
*	4,653,982	68	Woods, HSG C
*	7,598	98	Roofs & Driveways, HSG C
	11,283	74	>75% Grass cover, Good, HSG C
*	889	98	NEW Roofs, HSG C
*	7,627	74	NEW >75% Grass cover, Good, HSG C
	4,711,088	68	Weighted Average
	4,672,892		99.19% Pervious Area
	38,196		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, SOUTH WEST THROUGH WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.7	1,580	0.0400	0.50		**Shallow Concentrated Flow, B-C, WEST THROUGH WOODS** Forest w/Heavy Litter Kv= 2.5 fps
3.8	2,045	0.0420	9.03	162.47	**Trap/Vee/Rect Channel Flow, C-D, NORTH WEST IN STREAI** Bot.W=5.00' D=2.00' Z= 2.0 '/' Top.W=13.00' n= 0.040 Winding stream, pools & shoals
88.1	3,775	Total			

Summary for Subcatchment 10.1D: ROAD SIDE OF LOT 5

Runoff = 2.71 cfs @ 12.21 hrs, Volume= 0.240 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	3,269	98	Existing Paved roads, HSG C
	1,948	96	Gravel surface, HSG C
*	24,846	72	Woods, HSG C
*	1,176	98	Roofs, HSG C
	5,538	74	>75% Grass cover, Good, HSG C
	36,777	77	Weighted Average
	32,332		87.91% Pervious Area
	4,445		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	123	0.0325	1.26		**Shallow Concentrated Flow, B-C, ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
15.2	223	Total			

Summary for Subcatchment 10.2D: FRONT BETWEEN LOTS 4 + 5

Runoff = 1.37 cfs @ 12.11 hrs, Volume= 0.099 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	3,188	98	Existing Paved road, HSG C
	883	96	Gravel surface, HSG C
*	8,832	72	Woods, HSG C
	1,037	74	>75% Grass cover, Good, HSG C
	13,940	80	Weighted Average
	10,752		77.13% Pervious Area
	3,188		22.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	30	0.0800	0.11		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
3.2	150	0.0240	0.77		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
7.8	180	Total			

Summary for Subcatchment 10.3D: FRONT BETWEEN LOTS 3 + 4

Runoff = 1.98 cfs @ 12.27 hrs, Volume= 0.192 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	5,121	98	Paved road, HSG C
*	22,925	72	Woods, HSG C
	611	96	Gravel surface, HSG C
	833	74	>75% Grass cover, Good, HSG C
	29,490	77	Weighted Average
	24,369		82.63% Pervious Area
	5,121		17.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A-B, WEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
2.5	270	0.0323	1.80		**Shallow Concentrated Flow, B-C, TO ROAD DITCH** Nearly Bare & Untilled Kv= 10.0 fps
19.4	370	Total			

Summary for Subcatchment 10D: LOT 8 DEVELOPED AREA

Runoff = 6.32 cfs @ 12.67 hrs, Volume= 0.931 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	10,980	98	Existing Paved roads, HSG C
	657	96	Gravel surface, HSG C
*	132,233	72	Woods, HSG C
*	1,803	98	Roofs, HSG C
	12,509	74	>75% Grass cover, Good, HSG C
	158,182	74	Weighted Average
	145,399		91.92% Pervious Area
	12,783		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0660	0.08		**Sheet Flow, A-B, WEST IN WOODS** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.1	755	0.0370	0.96		**Shallow Concentrated Flow, B-C, IN WOODS** Woodland Kv= 5.0 fps
4.1	230	0.0350	0.94		**Shallow Concentrated Flow, C-D, ROAD DITCH** Woodland Kv= 5.0 fps
48.8	1,135	Total			

Summary for Subcatchment 20D: AREA OF LOT 7+, ALONG HUSSEY ROAD

Runoff = 3.11 cfs @ 12.24 hrs, Volume= 0.288 af, Depth> 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	2,508	98	Paved road, HSG C
*	36,946	72	Woods, HSG C
	4,675	74	>75% Grass cover, Good, HSG C
	744	98	Roofs, HSG C
*	2,114	98	EX. Paved roads, HSG C
	46,987	75	Weighted Average
	41,621		88.58% Pervious Area
	5,366		11.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, NORTHWEST IN WOODS** Woods: Light underbrush n= 0.400 P2= 3.30"
1.4	136	0.1000	1.58		**Shallow Concentrated Flow, NORTH WEST THROUGH WOOD** Woodland Kv= 5.0 fps
2.2	107	0.0130	0.80		**Shallow Concentrated Flow, SOUTH WEST IN ROAD DITCH** Short Grass Pasture Kv= 7.0 fps
17.2	343	Total			

Summary for Subcatchment 21D: LOT 7

Runoff = 0.97 cfs @ 12.09 hrs, Volume= 0.066 af, Depth> 3.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	1,889	98	Paved Driveway, HSG C
	143	98	Roofs, HSG C
	2,693	74	>75% Grass cover, Good, HSG C
	5,332	70	Woods, Good, HSG C
	10,057	77	Weighted Average
	8,025		79.80% Pervious Area
	2,032		20.20% Impervious Area

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

Summary for Subcatchment 22D: LOT 6 + 7

Runoff = 2.04 cfs @ 12.62 hrs, Volume= 0.285 af, Depth> 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	2,595	98	Paved Driveway, HSG C
	1,176	98	Roofs, HSG C
	7,117	74	>75% Grass cover, Good, HSG C
	38,952	70	Woods, Good, HSG C
	49,840	73	Weighted Average
	46,069		92.43% Pervious Area
	3,771		7.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.8	140	0.0286	0.06		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	76	0.0800	0.71		**Shallow Concentrated Flow, B-C** Forest w/Heavy Litter Kv= 2.5 fps
0.6	150	0.0666	3.87		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
44.2	366	Total			

Summary for Subcatchment 23D: BACK OF LOT 5

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.027 af, Depth> 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	888	98	Roofs & Driveways, HSG C
	3,050	74	>75% Grass cover, Good, HSG C
	3,938	79	Weighted Average
	3,050		77.45% Pervious Area
	888		22.55% Impervious Area

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

Summary for Subcatchment 24D: LOT 6+8

Runoff = 1.61 cfs @ 12.24 hrs, Volume= 0.148 af, Depth> 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

	Area (sf)	CN	Description
*	3,038	98	Paved Driveway, HSG C
	858	98	Roofs, HSG C
	4,669	74	>75% Grass cover, Good, HSG C
	15,491	70	Woods, Good, HSG C
	24,056	75	Weighted Average
	20,160		83.80% Pervious Area
	3,896		16.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	30	0.1333	1.83		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.6	137	0.0729	4.05		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
16.9	217	Total			

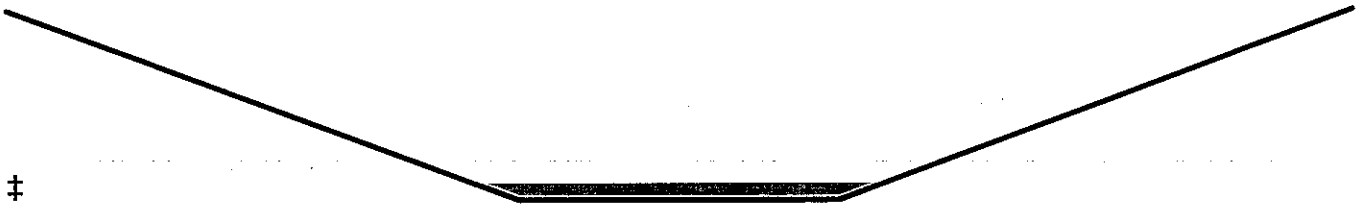
Summary for Reach 10.3R: ROAD DITCH

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 1.91" for 25-YEAR event
Inflow = 2.36 cfs @ 12.33 hrs, Volume= 0.159 af
Outflow = 2.34 cfs @ 12.39 hrs, Volume= 0.159 af, Atten= 1%, Lag= 3.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.23 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 6.8 min

Peak Storage= 302 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 221.09 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 286.0' Slope= 0.0311 '/'
Inlet Invert= 576.90', Outlet Invert= 568.00'



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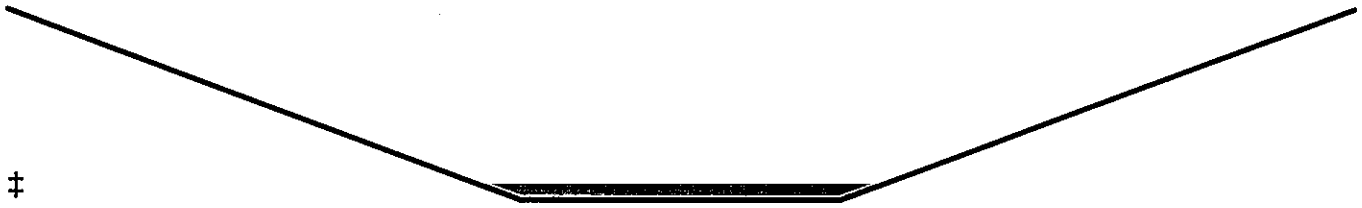
Summary for Reach 10.4R: ROAD DITCH

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 2.10" for 25-YEAR event
Inflow = 1.88 cfs @ 12.27 hrs, Volume= 0.118 af
Outflow = 1.84 cfs @ 12.35 hrs, Volume= 0.118 af, Atten= 2%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.86 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 8.4 min

Peak Storage= 299 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 2.00' Flow Area= 26.0 sf, Capacity= 190.07 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 300.0' Slope= 0.0230 '/'
Inlet Invert= 584.90', Outlet Invert= 578.00'



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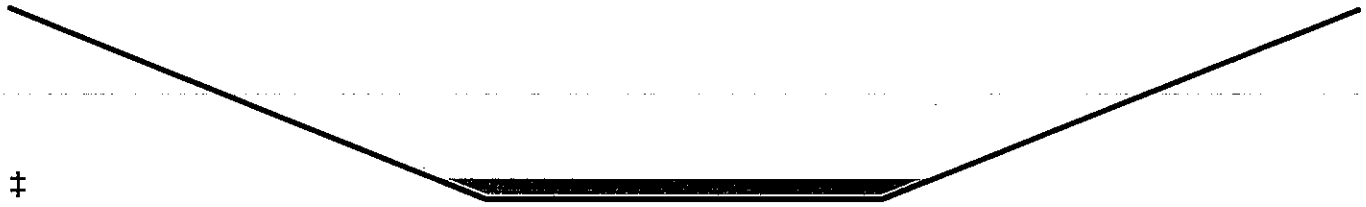
Summary for Reach 10R: ROAD DITCH

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 2.07" for 25-YEAR event
Inflow = 4.61 cfs @ 12.27 hrs, Volume= 0.318 af
Outflow = 4.50 cfs @ 12.38 hrs, Volume= 0.318 af, Atten= 2%, Lag= 6.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.58 fps, Min. Travel Time= 3.7 min
Avg. Velocity = 1.08 fps, Avg. Travel Time= 12.2 min

Peak Storage= 1,001 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 268.99 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 791.0' Slope= 0.0618 '/'
Inlet Invert= 566.90', Outlet Invert= 518.00'



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Summary for Reach 22R: THROUGH WOODS

Inflow Area = 0.090 ac, 22.55% Impervious, Inflow Depth > 3.62" for 25-YEAR event
Inflow = 0.40 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.21 cfs @ 12.63 hrs, Volume= 0.026 af, Atten= 47%, Lag= 32.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.20 fps, Min. Travel Time= 23.1 min
Avg. Velocity = 0.08 fps, Avg. Travel Time= 60.8 min

Peak Storage= 294 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 5.31 cfs

5.00' x 1.00' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 280.0' Slope= 0.0357 '/'
Inlet Invert= 568.00', Outlet Invert= 558.00'

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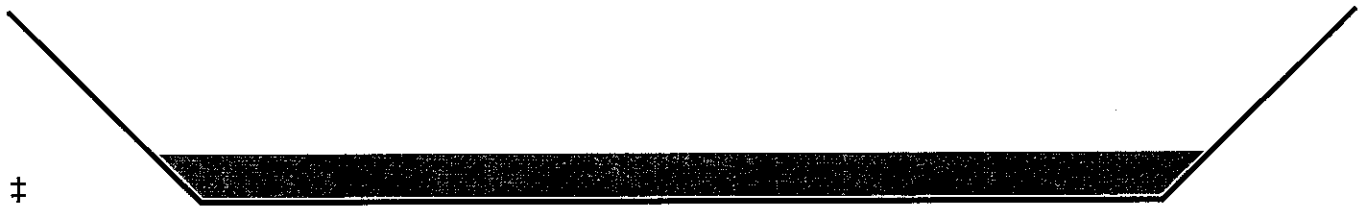
Summary for Reach 24R: THROUGH WOODS

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 3.05" for 25-YEAR event
Inflow = 3.27 cfs @ 12.46 hrs, Volume= 0.514 af
Outflow = 3.27 cfs @ 12.54 hrs, Volume= 0.510 af, Atten= 0%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.48 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.23 fps, Avg. Travel Time= 7.3 min

Peak Storage= 677 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.26'
Bank-Full Depth= 1.00' Flow Area= 30.0 sf, Capacity= 33.23 cfs

25.00' x 1.00' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 5.0 '/' Top Width= 35.00'
Length= 100.0' Slope= 0.1100 '/'
Inlet Invert= 539.00', Outlet Invert= 528.00'



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Summary for Pond 1.1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.473 ac, 10.71% Impervious, Inflow Depth > 2.74" for 25-YEAR event
Inflow = 9.86 cfs @ 12.54 hrs, Volume= 1.249 af
Outflow = 9.86 cfs @ 12.54 hrs, Volume= 1.248 af, Atten= 0%, Lag= 0.3 min
Primary = 9.86 cfs @ 12.54 hrs, Volume= 1.248 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 516.09' @ 12.54 hrs Surf.Area= 130 sf Storage= 161 cf

Plug-Flow detention time= 0.5 min calculated for 1.244 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (810.6 - 810.2)

Volume	Invert	Avail.Storage	Storage Description
#1	514.00'	520 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.00	25	0	0
516.00	125	150	150
518.00	245	370	520

Device	Routing	Invert	Outlet Devices
#1	Primary	514.40'	**24.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 514.40' / 512.10' S= 0.0383 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=9.85 cfs @ 12.54 hrs HW=516.08' (Free Discharge)
↑**1=Culvert** (Inlet Controls 9.85 cfs @ 3.49 fps)

Summary for Pond 2.1P: CULVERT AT HUSSEY ROAD 15", POA 2

Inflow Area = 3.096 ac, 11.83% Impervious, Inflow Depth > 3.10" for 25-YEAR event
Inflow = 5.98 cfs @ 12.28 hrs, Volume= 0.799 af
Outflow = 5.80 cfs @ 12.35 hrs, Volume= 0.799 af, Atten= 3%, Lag= 4.3 min
Primary = 5.80 cfs @ 12.35 hrs, Volume= 0.799 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 526.27' @ 12.35 hrs Surf.Area= 659 sf Storage= 460 cf

Plug-Flow detention time= 0.9 min calculated for 0.796 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (815.5 - 814.7)

Volume	Invert	Avail.Storage	Storage Description
#1	524.00'	3,549 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
524.00	25	0	0
526.00	304	329	329
528.00	2,916	3,220	3,549

Device	Routing	Invert	Outlet Devices
#1	Primary	524.10'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 524.10' / 523.70' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.80 cfs @ 12.35 hrs HW=526.27' (Free Discharge)
↑**1=Culvert** (Inlet Controls 5.80 cfs @ 4.73 fps)

Summary for Pond 3.1P: CULVERT AT HUSSEY ROAD 32", POA 3

Inflow Area = 108.152 ac, 0.81% Impervious, Inflow Depth > 2.48" for 25-YEAR event
Inflow = 107.04 cfs @ 13.21 hrs, Volume= 22.345 af
Outflow = 106.35 cfs @ 13.27 hrs, Volume= 22.289 af, Atten= 1%, Lag= 3.6 min
Primary = 106.35 cfs @ 13.27 hrs, Volume= 22.289 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 523.76' @ 13.27 hrs Surf.Area= 12,076 sf Storage= 33,969 cf

Plug-Flow detention time= 5.8 min calculated for 22.289 af (100% of inflow)
Center-of-Mass det. time= 5.0 min (871.0 - 865.9)

Volume	Invert	Avail.Storage	Storage Description
#1	517.50'	66,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
517.50	450	0	0
518.00	925	344	344
520.00	3,810	4,735	5,079
522.00	7,710	11,520	16,599
524.00	12,683	20,393	36,992
526.00	17,300	29,983	66,975

Device	Routing	Invert	Outlet Devices
#1	Primary	517.90'	**32.0" Round Culvert** L= 31.0' Ke= 0.900 Inlet / Outlet Invert= 517.90' / 517.30' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 5.59 sf
#2	Primary	522.00'	**10.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=106.24 cfs @ 13.27 hrs HW=523.75' (Free Discharge)
└**1=Culvert** (Inlet Controls 45.14 cfs @ 8.08 fps)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 61.10 cfs @ 3.48 fps)

Summary for Pond 21P: LOT 7 DW CULVERT

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 3.12" for 25-YEAR event
Inflow = 3.27 cfs @ 12.45 hrs, Volume= 0.524 af
Outflow = 3.27 cfs @ 12.45 hrs, Volume= 0.524 af, Atten= 0%, Lag= 0.2 min
Primary = 3.27 cfs @ 12.45 hrs, Volume= 0.524 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 541.11' @ 12.45 hrs Surf.Area= 34 sf Storage= 28 cf

Plug-Flow detention time= 0.2 min calculated for 0.523 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (812.2 - 812.0)

Volume	Invert	Avail.Storage	Storage Description
#1	540.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
540.00	15	0	0
542.00	50	65	65
544.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	540.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 540.00' / 539.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.27 cfs @ 12.45 hrs HW=541.11' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.27 cfs @ 2.84 fps)

Summary for Pond 22P: LOT 7 DW CULVERT

Inflow Area =	1.235 ac,	8.66% Impervious,	Inflow Depth > 3.02"	for 25-YEAR event
Inflow =	2.25 cfs @	12.62 hrs, Volume=	0.311 af	
Outflow =	2.25 cfs @	12.62 hrs, Volume=	0.311 af, Atten= 0%, Lag= 0.1 min	
Primary =	2.25 cfs @	12.62 hrs, Volume=	0.311 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 544.86' @ 12.62 hrs Surf.Area= 30 sf Storage= 19 cf

Plug-Flow detention time= 0.2 min calculated for 0.310 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (824.0 - 823.9)

Volume	Invert	Avail.Storage	Storage Description
#1	544.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.00	15	0	0
546.00	50	65	65
548.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	544.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 544.00' / 543.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.24 cfs @ 12.62 hrs HW=544.86' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 2.24 cfs @ 2.49 fps)

Summary for Pond 25P: LOT 8 DW CULVERT

Inflow Area = 0.552 ac, 16.20% Impervious, Inflow Depth > 3.21" for 25-YEAR event
Inflow = 1.61 cfs @ 12.24 hrs, Volume= 0.148 af
Outflow = 1.61 cfs @ 12.24 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.1 min
Primary = 1.61 cfs @ 12.24 hrs, Volume= 0.148 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 544.70' @ 12.24 hrs Surf.Area= 27 sf Storage= 15 cf

Plug-Flow detention time= 0.3 min calculated for 0.148 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (798.4 - 798.2)

Volume	Invert	Avail.Storage	Storage Description
#1	544.00'	315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.00	15	0	0
546.00	50	65	65
548.00	200	250	315

Device	Routing	Invert	Outlet Devices
#1	Primary	544.00'	**15.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 544.00' / 543.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.59 cfs @ 12.24 hrs HW=544.70' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.59 cfs @ 2.25 fps)

Summary for Pond 26P: LEVEL SPREADER

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 3.12" for 25-YEAR event
Inflow = 3.27 cfs @ 12.45 hrs, Volume= 0.524 af
Outflow = 3.27 cfs @ 12.46 hrs, Volume= 0.514 af, Atten= 0%, Lag= 0.3 min
Primary = 3.27 cfs @ 12.46 hrs, Volume= 0.514 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 539.14' @ 12.46 hrs Surf.Area= 516 sf Storage= 530 cf

Plug-Flow detention time= 12.2 min calculated for 0.512 af (98% of inflow)
Center-of-Mass det. time= 5.0 min (817.1 - 812.2)

Volume	Invert	Avail.Storage	Storage Description
#1	537.00'	1,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
537.00	25	0	0
538.00	210	118	118
540.00	747	957	1,075

Device	Routing	Invert	Outlet Devices
#1	Primary	539.00'	**25.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=3.26 cfs @ 12.46 hrs HW=539.14' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.26 cfs @ 0.94 fps)

Summary for Pond L1+2P: ROAD DITCH @ DW

Inflow Area = 0.677 ac, 17.37% Impervious, Inflow Depth > 3.40" for 25-YEAR event
Inflow = 1.98 cfs @ 12.27 hrs, Volume= 0.192 af
Outflow = 1.98 cfs @ 12.27 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.10 cfs @ 10.95 hrs, Volume= 0.074 af
Primary = 1.88 cfs @ 12.27 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 586.01' @ 12.27 hrs Surf.Area= 57 sf Storage= 33 cf

Plug-Flow detention time= 0.2 min calculated for 0.192 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (796.5 - 796.3)

Volume	Invert	Avail.Storage	Storage Description
#1	585.00'	488 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
585.00	10	0	0
586.00	55	33	33
588.00	400	455	488

Device	Routing	Invert	Outlet Devices
#1	Primary	585.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 585.00' / 584.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	587.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	585.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 10.95 hrs HW=585.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.86 cfs @ 12.27 hrs HW=586.00' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.86 cfs @ 2.93 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond L3+4P: ROAD DITCH @ DW

Inflow Area = 0.997 ac, 19.13% Impervious, Inflow Depth > 2.61" for 25-YEAR event
Inflow = 2.46 cfs @ 12.32 hrs, Volume= 0.217 af
Outflow = 2.46 cfs @ 12.33 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.10 cfs @ 11.30 hrs, Volume= 0.059 af
Primary = 2.36 cfs @ 12.33 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 578.22' @ 12.33 hrs Surf.Area= 65 sf Storage= 59 cf

Plug-Flow detention time= 0.4 min calculated for 0.217 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (772.1 - 771.7)

Volume	Invert	Avail.Storage	Storage Description
#1	577.00'	307 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
577.00	30	0	0
578.00	61	46	46
580.00	100	161	207
580.50	300	100	307

Device	Routing	Invert	Outlet Devices
#1	Primary	577.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 577.00' / 576.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	580.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	577.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 11.30 hrs HW=577.05' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=2.35 cfs @ 12.33 hrs HW=578.21' (Free Discharge)
├**1=Culvert** (Barrel Controls 2.35 cfs @ 3.13 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 21.00'
Length= 300.0' Slope= 0.0230 '/'
Inlet Invert= 584.90', Outlet Invert= 578.00'

‡

Summary for Reach 10R: ROAD DITCH

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 0.46" for 2-YEAR event
Inflow = 1.27 cfs @ 12.26 hrs, Volume= 0.071 af
Outflow = 1.18 cfs @ 12.47 hrs, Volume= 0.071 af, Atten= 7%, Lag= 12.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.20 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.89 fps, Avg. Travel Time= 14.8 min

Peak Storage= 425 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 268.99 cfs

5.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 791.0' Slope= 0.0618 '/'
Inlet Invert= 566.90', Outlet Invert= 518.00'

‡

Summary for Reach 22R: THROUGH WOODS

Inflow Area = 0.090 ac, 22.55% Impervious, Inflow Depth > 1.30" for 2-YEAR event
Inflow = 0.15 cfs @ 12.10 hrs, Volume= 0.010 af
Outflow = 0.06 cfs @ 12.97 hrs, Volume= 0.009 af, Atten= 59%, Lag= 52.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.13 fps, Min. Travel Time= 36.3 min
Avg. Velocity = 0.06 fps, Avg. Travel Time= 77.1 min

Peak Storage= 128 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 5.31 cfs

5.00' x 1.00' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 280.0' Slope= 0.0357 '/'
Inlet Invert= 568.00', Outlet Invert= 558.00'

‡

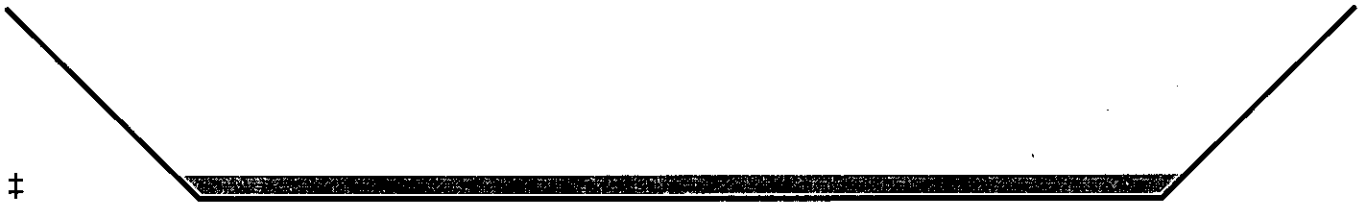
Summary for Reach 24R: THROUGH WOODS

Inflow Area = 2.018 ac, 12.05% Impervious, Inflow Depth > 0.95" for 2-YEAR event
Inflow = 0.99 cfs @ 12.45 hrs, Volume= 0.159 af
Outflow = 0.99 cfs @ 12.59 hrs, Volume= 0.157 af, Atten= 1%, Lag= 8.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.31 fps, Min. Travel Time= 5.5 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 10.4 min

Peak Storage= 323 cf @ 12.50 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 30.0 sf, Capacity= 33.23 cfs

25.00' x 1.00' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 5.0 '/' Top Width= 35.00'
Length= 100.0' Slope= 0.1100 '/'
Inlet Invert= 539.00', Outlet Invert= 528.00'



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Summary for Pond 1.1P: CULVERT AT HUSSEY ROAD, POA 1

Inflow Area = 5.473 ac, 10.71% Impervious, Inflow Depth > 0.81" for 2-YEAR event
Inflow = 3.03 cfs @ 12.63 hrs, Volume= 0.370 af
Outflow = 3.03 cfs @ 12.63 hrs, Volume= 0.369 af, Atten= 0%, Lag= 0.2 min
Primary = 3.03 cfs @ 12.63 hrs, Volume= 0.369 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 515.23' @ 12.63 hrs Surf.Area= 87 sf Storage= 69 cf

Plug-Flow detention time= 0.9 min calculated for 0.368 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (833.4 - 832.9)

Summary for Pond L5P: ROAD DITCH @ DW

Inflow Area = 1.841 ac, 15.90% Impervious, Inflow Depth > 2.60" for 25-YEAR event
Inflow = 4.81 cfs @ 12.22 hrs, Volume= 0.398 af
Outflow = 4.71 cfs @ 12.27 hrs, Volume= 0.398 af, Atten= 2%, Lag= 2.6 min
Discarded = 0.10 cfs @ 10.60 hrs, Volume= 0.081 af
Primary = 4.61 cfs @ 12.27 hrs, Volume= 0.318 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 569.89' @ 12.27 hrs Surf.Area= 132 sf Storage= 212 cf

Plug-Flow detention time= 0.5 min calculated for 0.398 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (778.7 - 778.3)

Volume	Invert	Avail.Storage	Storage Description
#1	567.00'	361 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
567.00	30	0	0
568.00	50	40	40
570.00	137	187	227
570.50	400	134	361

Device	Routing	Invert	Outlet Devices
#1	Primary	567.00'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 567.00' / 566.90' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	570.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	567.00'	**0.10 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.10 cfs @ 10.60 hrs HW=567.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=4.58 cfs @ 12.27 hrs HW=569.86' (Free Discharge)
├**1=Culvert** (Inlet Controls 4.58 cfs @ 5.84 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)