



March 14, 2018

Ms. Darlene Wynne, Asst. Planning Director  
Beverly City Hall  
191 Cabot Street  
Beverly, MA 01915

Via Hand Delivery

**Subject: OSRD Site Plan & Definitive Subdivision  
Application for Hickory Hill Way  
(20, 30 & 40 Webster Avenue)**

Dear Ms. Wynne:

On behalf of the Applicant, Benco LLC, please find enclosed revised project plans for the subject application. The revisions address comments received from various City boards, commission and departments. A summary of the plan revisions follows:

Roadway Width – The proposed pavement width was reduced from 24-feet to 20-feet. Minor revisions to the proposed grading and utilities occurred to be consistent with the roadway width reduction. The typical roadway section was also revised.

Sidewalk – The proposed sidewalk along the private way was extended to the duplex parking area. A 4-foot wide sidewalk was added to the common driveway up to the Lot 5 driveway as discussed at our February 21<sup>st</sup> meeting.

Crosswalk – A crosswalk with handicap accessible ramps and signage was added in Webster Avenue to connect the proposed sidewalk to the existing sidewalk along the east side of Webster Avenue. A crosswalk with handicap accessible ramps was also added at the bottom of the common driveway. Handicap Ramp and Sign Details have been added to the Sheet C-10 of the project plan set.

Infiltration Basin Design, Landscaping & Ownership – The proposed basin has been moved further away from the wetland by approximately 10 feet. The shape of the basin was also revised to better blend with the landscape. The previously proposed safety fence has been removed from around the basin. A dozen white pine screening trees have been added to the basin perimeter.

Drainage calculations have been revised to address the basin shape and

impervious surfaces changes. A summary of the HydroCAD results and report is enclosed.

The basin is no longer included in the open space which is to be conveyed to the Essex County Greenbelt. The basin parcel (Parcel B) will be owned by the Homeowners Association.

Webster Avenue Sewer & Drainage – On February 21st and 22<sup>nd</sup> the existing municipal sewer and drain lines in front of 30 Webster Avenue were inspected and cleaned to Goodwin Road and Chubbs Brook. Copies of the video inspection and reports have been provided to the Public Services Department and City Engineering Department.

The sewer and drain lines were in good condition except for a clay drain line in Webster Avenue which contained multiple cracks. The existing catchbasin along the east side of Webster Avenue was collapsing and its grate was broken. The plan set has been revised to include replacing collapsing catchbasin and cracked drain line.

Webster Avenue Improvements – A meeting with Commissioner Mike Collins was held at the site on March 12<sup>th</sup> to discuss the comments in his February 13<sup>th</sup> email. Three dead trees from along Webster Avenue are to be removed and the shoulder regraded to convey runoff to existing drainage structures. A note reflecting the same has been added to the plan set.

Water & Sewer Layout – The water and sewer stubs to the existing 5-family residence at 20 Webster Avenue were modified. The intent is for the existing utility service to remain active, if possible, and provide stubs outside of the right-of-way for future connections. The stubs will mitigate the need to cut into the private roadway at a future date, if necessary. The existing services for 30 & 40 Webster Avenue are not anticipated to be impacted by the proposed roadway so provisions for upgrade are not warranted.

Trail Connection – The location of a future walking trail connection through the proposed Access Easement on Lot 4 has been added to the plans as discussed at our February 21<sup>st</sup> meeting.

Rip Rap Embankment Detail – A detail of the proposed Rip Rap Embankment has been added to Sheet C-10. The embankment

construction incorporates filter fabric and crushed stone bedding layer to minimize potential erosion.

Street Lights – Thirteen (13) street lights along the roadway and common driveway sidewalks have been added to the plan set. The street lights are to consist of 8-inch diameter concrete bollard style lights.

Comprehensive List of Waivers –The waivers are as follows:

OSRD Ordinance

1. *Section 300-54.F(3)(b)[2]* – Buffer Areas
  - a. Omit 25' Tract Buffer along Private Way
  - b. Reduce 100' Wetland A Buffer to 35-feet
  - c. Reduce 100' Wetland E Buffer to 25-feet
2. *Section 300-54.F(3)(b)[8]* – Relief for Mapping Trees Greater than 10" DBH. Trees Greater than 15" Were Mapped.
3. *Section 300-54.G(4)* – Setbacks
  - a. Reduce Lots 4 & 5 Rear Yard Setback from 25' to 10'
  - b. Reduce Lot 6 Rear Yard Setback from 25' to 20'
  - c. Reduce Lots 7 & 8 Side Yard Setback from 10' to 7'
4. *Section 300-54.G(5)* – Reduce Pavement Width to from 24' to 20'.
5. *Section 300-54.H(1)(c)* – Non-Contiguous Open Space Parcel.
6. *Section 300-54.H(1)(e)* – Open Space Management Plan. Defer to Greenbelt.

Definitive Subdivision Regulations

7. *Section III.C.2.d* – Relief for mapping trees greater than 6" DBH.
8. *Section IV.A.2.b* – Reduce Centerline Radius from 300' to 100'.
9. *Section IV.A.2.c* – Reduce Reverse Curve Tangent from 150' to 50'.
10. *Section IV.A.3* – Reduce Right-of-Way Width from 50' to 40' and Pavement Width from 32' to 20'.
10. *Section IV.A.4b* – Increase Centerline Grade from 6% to 8%.
11. *Section IV.A.5.a* –Increase Dead-End Street from 500' to 750'.

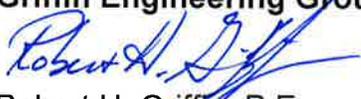
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12. *Section IV.A.5.b* – Provide Hammerhead Turn Area Instead of Cul-de-Sac.
13. *Section IV.D* – Reduce Drainage Easement from 20' to 15'.
14. *Section V.D.2* – Reduce Sidewalks to One-Side Only.
15. *Section V.G.1* – Street Trees on One-Side Only and in Right-of-Way.
16. *Section V.K* – No Fire Alarm System.

We look forward to meeting with you and the Board to describe this plan further. Should you have any questions or comments or require additional information, please do not hesitate to contact the undersigned.

Very truly yours,  
**Griffin Engineering Group, LLC**



Robert H. Griffin, P.E.

Enclosure: Revised Project Plans (4 Full Size, 17 Reduced, 1 Electronic)  
Revised HydroCAD Drainage Calculations Results  
HydroCAD Report (2 Copies)

Cc: Benco LLC w/ Enclosures  
Atty. Tom Alexander w/ Enclosures

## **Revised HydroCAD Drainage Calculation Results**

Note: There were no revisions made to Subcatchments 1 and 3. Therefore, Tables 1, 3, 6 & 8 were not revised. Refer to December 20, 2017, Stormwater Management Report.

**Table 2 : Comparison of Pre-Development and Post Development Peak Runoff Rates (cfs) Towards the Southerly Catchbasin**

<u>Subcatchment 2</u>	Storm Frequency			
	2-Year	10-Year	25-Year	100-Year
Pre-Development	2.37	4.74	6.37	8.42
Post-Development	1.18	3.62	6.11	8.15

**Table 4 : Comparison of Pre-Development and Post Development Peak Runoff Rates (cfs) Towards Wetland E**

<u>Subcatchment 4</u>	Storm Frequency			
	2-Year	10-Year	25-Year	100-Year
Pre-Development	1.61	3.64	5.09	6.96
Post-Development	1.58	3.23	4.38	5.95

**Table 5 : Comparison of Pre-Development and Post Development Peak Runoff Rates (cfs) Towards Wetland A**

<u>Subcatchment 5</u>	Storm Frequency			
	2-Year	10-Year	25-Year	100-Year
Pre-Development	2.51	6.02	8.59	11.91
Post-Development	1.74	4.41	7.29	11.51

Note: Exfiltration from the basin was ignored to conservatively compare pre-development and post-development conditions and reflect winter frozen basin bottom conditions.

**Table 7 : Comparison of Pre-Development and Post Development Peak Runoff Volume (cf) Towards the Southerly Catchbasin**

<u>Subcatchment 2</u>	Storm Frequency			
	2-Year	10-Year	25-Year	100-Year
Pre-Development	8,510	16,488	22,085	29,233
Post-Development	4,202	10,042	14,356	20,024

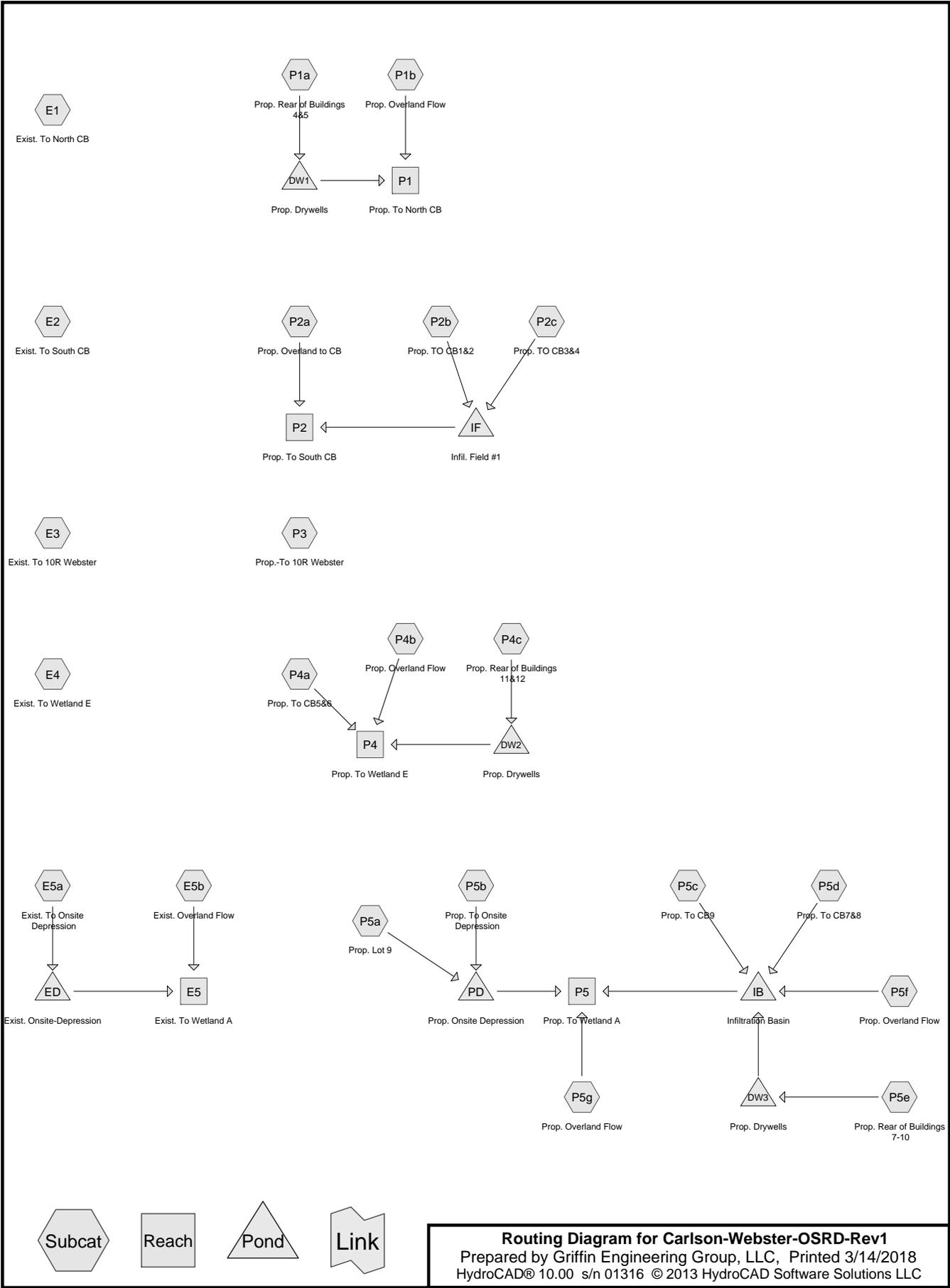
**Table 9 : Comparison of Pre-Development and Post Development Peak Runoff Volume (cf) Towards Wetland E**

<u>Subcatchment 4</u>	Storm Frequency			
	2-Year	10-Year	25-Year	100-Year
Pre-Development	7,195	15,085	20,801	28,231
Post-Development	6,746	13,382	18,069	24,074

**Table 10 : Comparison of Pre-Development and Post Development Peak Runoff Volume (cf) Towards Wetland A**

<u>Subcatchment 5</u>	Storm Frequency			
	2-Year	10-Year	25-Year	100-Year
Pre-Development	10,468	22,739	31,758	43,571
Post-Development	6,887	18,406	28,811	42,981

Note: Exfiltration from basin bottom allowed.



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Type III 24-hr 2-yr Rainfall=3.10"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points x 3  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

<b>Subcatchment E1: Exist. To North CB</b>	Runoff Area=114,974 sf 7.29% Impervious Runoff Depth=0.97" Flow Length=568' Tc=14.2 min CN=74 Runoff=2.17 cfs 9,316 cf
<b>Subcatchment E2: Exist. To South CB</b>	Runoff Area=89,505 sf 11.68% Impervious Runoff Depth=1.14" Flow Length=254' Tc=9.3 min CN=77 Runoff=2.37 cfs 8,510 cf
<b>Subcatchment E3: Exist. To 10R Webster</b>	Runoff Area=6,692 sf 0.00% Impervious Runoff Depth=0.87" Tc=6.0 min CN=72 Runoff=0.14 cfs 484 cf
<b>Subcatchment E4: Exist. To Wetland E</b>	Runoff Area=99,439 sf 4.37% Impervious Runoff Depth=0.87" Flow Length=449' Tc=14.6 min CN=72 Runoff=1.61 cfs 7,195 cf
<b>Subcatchment E5a: Exist. To Onsite</b>	Runoff Area=91,650 sf 3.96% Impervious Runoff Depth=0.92" Flow Length=218' Tc=15.1 min CN=73 Runoff=1.58 cfs 7,022 cf
<b>Subcatchment E5b: Exist. Overland Flow</b>	Runoff Area=163,030 sf 0.56% Impervious Runoff Depth=0.77" Flow Length=433' Tc=10.9 min CN=70 Runoff=2.51 cfs 10,468 cf
<b>Subcatchment P1a: Prop. Rear of</b>	Runoff Area=2,983 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.21 cfs 713 cf
<b>Subcatchment P1b: Prop. Overland Flow</b>	Runoff Area=107,966 sf 7.76% Impervious Runoff Depth=0.97" Flow Length=460' Tc=12.6 min CN=74 Runoff=2.13 cfs 8,748 cf
<b>Subcatchment P2a: Prop. Overland to CB</b>	Runoff Area=33,649 sf 22.34% Impervious Runoff Depth=1.39" Flow Length=188' Tc=7.7 min CN=81 Runoff=1.18 cfs 3,900 cf
<b>Subcatchment P2b: Prop. TO CB1&amp;2</b>	Runoff Area=25,328 sf 21.34% Impervious Runoff Depth=1.14" Flow Length=258' Tc=9.3 min CN=77 Runoff=0.67 cfs 2,408 cf
<b>Subcatchment P2c: Prop. TO CB3&amp;4</b>	Runoff Area=22,957 sf 29.11% Impervious Runoff Depth=1.33" Flow Length=252' Tc=8.5 min CN=80 Runoff=0.74 cfs 2,536 cf
<b>Subcatchment P3: Prop.-To 10R Webster</b>	Runoff Area=6,170 sf 0.00% Impervious Runoff Depth=0.92" Tc=6.0 min CN=73 Runoff=0.14 cfs 473 cf
<b>Subcatchment P4a: Prop. To CB5&amp;6</b>	Runoff Area=18,035 sf 30.92% Impervious Runoff Depth=1.60" Flow Length=205' Tc=7.1 min CN=84 Runoff=0.75 cfs 2,403 cf
<b>Subcatchment P4b: Prop. Overland Flow</b>	Runoff Area=56,676 sf 0.00% Impervious Runoff Depth=0.92" Flow Length=444' Tc=13.7 min CN=73 Runoff=1.01 cfs 4,343 cf
<b>Subcatchment P4c: Prop. Rear of</b>	Runoff Area=1,788 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.12 cfs 427 cf
<b>Subcatchment P5a: Prop. Lot 9</b>	Runoff Area=8,086 sf 46.83% Impervious Runoff Depth=1.67" Flow Length=68' Slope=0.0100 '/' Tc=14.1 min CN=85 Runoff=0.28 cfs 1,127 cf

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Type III 24-hr 2-yr Rainfall=3.10"

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<b>Subcatchment P5b: Prop. To Onsite</b>	Runoff Area=58,152 sf 3.78% Impervious Runoff Depth=0.92" Flow Length=152' Tc=9.1 min CN=73 Runoff=1.20 cfs 4,456 cf
<b>Subcatchment P5c: Prop. To CB9</b>	Runoff Area=19,536 sf 60.63% Impervious Runoff Depth=1.99" Flow Length=303' Tc=11.5 min CN=89 Runoff=0.87 cfs 3,240 cf
<b>Subcatchment P5d: Prop. To CB7&amp;8</b>	Runoff Area=47,033 sf 47.75% Impervious Runoff Depth=1.67" Tc=6.0 min CN=85 Runoff=2.12 cfs 6,556 cf
<b>Subcatchment P5e: Prop. Rear of</b>	Runoff Area=3,576 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.25 cfs 855 cf
<b>Subcatchment P5f: Prop. Overland Flow</b>	Runoff Area=52,398 sf 0.00% Impervious Runoff Depth=0.87" Flow Length=311' Tc=10.2 min CN=72 Runoff=0.97 cfs 3,791 cf
<b>Subcatchment P5g: Prop. Overland Flow</b>	Runoff Area=100,956 sf 0.00% Impervious Runoff Depth=0.82" Flow Length=309' Tc=10.0 min CN=71 Runoff=1.74 cfs 6,887 cf
<b>Reach E5: Exist. To Wetland A</b>	Inflow=2.51 cfs 10,468 cf Outflow=2.51 cfs 10,468 cf
<b>Reach P1: Prop. To North CB</b>	Inflow=2.13 cfs 8,748 cf Outflow=2.13 cfs 8,748 cf
<b>Reach P2: Prop. To South CB</b>	Inflow=1.18 cfs 4,202 cf Outflow=1.18 cfs 4,202 cf
<b>Reach P4: Prop. To Wetland E</b>	Inflow=1.58 cfs 6,746 cf Outflow=1.58 cfs 6,746 cf
<b>Reach P5: Prop. To Wetland A</b>	Inflow=1.74 cfs 15,331 cf Outflow=1.74 cfs 15,331 cf
<b>Pond DW1: Prop. Drywells</b>	Peak Elev=90.25' Storage=713 cf Inflow=0.21 cfs 713 cf Outflow=0.00 cfs 0 cf
<b>Pond DW2: Prop. Drywells</b>	Peak Elev=60.93' Storage=427 cf Inflow=0.12 cfs 427 cf Outflow=0.00 cfs 0 cf
<b>Pond DW3: Prop. Drywells</b>	Peak Elev=60.93' Storage=855 cf Inflow=0.25 cfs 855 cf Outflow=0.00 cfs 0 cf
<b>Pond ED: Exist. Onsite-Depression</b>	Peak Elev=69.50' Storage=7,022 cf Inflow=1.58 cfs 7,022 cf Outflow=0.00 cfs 0 cf
<b>Pond IB: Infiltration Basin</b>	Peak Elev=56.77' Storage=7,463 cf Inflow=3.72 cfs 13,587 cf Outflow=0.33 cfs 8,444 cf
<b>Pond IF: Infil. Field #1</b>	Peak Elev=37.43' Storage=1,425 cf Inflow=1.41 cfs 4,944 cf Discarded=0.19 cfs 4,642 cf Primary=0.26 cfs 302 cf Outflow=0.45 cfs 4,944 cf

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**Pond PD: Prop. Onsite Depression**

Peak Elev=69.45' Storage=5,583 cf Inflow=1.46 cfs 5,583 cf  
8.0" Round Culvert n=0.013 L=175.0' S=0.0300 '/' Outflow=0.00 cfs 0 cf

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**Summary for Subcatchment E1: Exist. To North CB**

Runoff = 2.17 cfs @ 12.21 hrs, Volume= 9,316 cf, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 11,010	86	Cart Path
95,584	70	Woods, Good, HSG C
114,974	74	Weighted Average
106,594		92.71% Pervious Area
8,380		7.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
4.3	468	0.1293	1.80		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
14.2	568	Total			

**Summary for Subcatchment E2: Exist. To South CB**

Runoff = 2.37 cfs @ 12.14 hrs, Volume= 8,510 cf, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 3,511	98	Ledge
* 6,016	98	Buildings & Stairs
* 12,247	96	Gravel Driveways
* 925	98	Concrete Driveway Gutters
11,500	74	>75% Grass cover, Good, HSG C
55,306	70	Woods, Good, HSG C
89,505	77	Weighted Average
79,053		88.32% Pervious Area
10,452		11.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.2450	0.21		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	154	0.0860	2.05		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
9.3	254	Total			

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**Summary for Subcatchment E3: Exist. To 10R Webster**

Runoff = 0.14 cfs @ 12.10 hrs, Volume= 484 cf, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
2,996	74	>75% Grass cover, Good, HSG C
3,696	70	Woods, Good, HSG C
6,692	72	Weighted Average
6,692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment E4: Exist. To Wetland E**

Runoff = 1.61 cfs @ 12.22 hrs, Volume= 7,195 cf, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 2,611	98	Buildings & Stairs
* 1,734	98	Tennis Court
* 1,500	96	Gravel Driveways
8,680	74	>75% Grass cover, Good, HSG C
84,914	70	Woods, Good, HSG C
99,439	72	Weighted Average
95,094		95.63% Pervious Area
4,345		4.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
5.8	349	0.0401	1.00		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
14.6	449	Total			

**Summary for Subcatchment E5a: Exist. To Onsite Depression**

Runoff = 1.58 cfs @ 12.23 hrs, Volume= 7,022 cf, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

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	Area (sf)	CN	Description
*	2,196	98	Buildings & Stairs
*	1,430	98	Tennis Court
*	4,200	96	Gravel Driveways
*	3,480	86	Cart Path
	5,150	74	>75% Grass cover, Good, HSG C
	75,194	70	Woods, Good, HSG C
	91,650	73	Weighted Average
	88,024		96.04% Pervious Area
	3,626		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0600	0.12		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	118	0.1610	2.01		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
15.1	218	Total			

**Summary for Subcatchment E5b: Exist. Overland Flow**

Runoff = 2.51 cfs @ 12.17 hrs, Volume= 10,468 cf, Depth= 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
*	918	98	Tennis Court
	162,112	70	Woods, Good, HSG C
	163,030	70	Weighted Average
	162,112		99.44% Pervious Area
	918		0.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.3000	0.23		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
3.5	333	0.1020	1.60		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
10.9	433	Total			

**Summary for Subcatchment P1a: Prop. Rear of Buildings 4&5**

Runoff = 0.21 cfs @ 12.08 hrs, Volume= 713 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

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Area (sf)	CN	Description
* 2,983	98	Building Roof
2,983		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P1b: Prop. Overland Flow**

Runoff = 2.13 cfs @ 12.19 hrs, Volume= 8,748 cf, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 5,286	86	Cart path
25,100	74	>75% Grass cover, Good, HSG C
69,200	70	Woods, Good, HSG C
107,966	74	Weighted Average
99,586		92.24% Pervious Area
8,380		7.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	75	0.1200	2.42		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
2.2	285	0.1800	2.12		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
12.6	460	Total			

**Summary for Subcatchment P2a: Prop. Overland to CB**

Runoff = 1.18 cfs @ 12.11 hrs, Volume= 3,900 cf, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

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	Area (sf)	CN	Description
*	3,511	98	Ledge
*	4,005	98	Existing Buildings
*	4,268	96	Gravel Driveway
	9,565	74	>75% Grass cover, Good, HSG C
	12,300	70	Woods, Good, HSG C
	33,649	81	Weighted Average
	26,133		77.66% Pervious Area
	7,516		22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.3500	0.24		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	88	0.0625	1.75		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
7.7	188	Total			

**Summary for Subcatchment P2b: Prop. TO CB1&2**

Runoff = 0.67 cfs @ 12.14 hrs, Volume= 2,408 cf, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
*	5,405	98	Pavement
	6,096	74	>75% Grass cover, Good, HSG C
	13,827	70	Woods, Good, HSG C
	25,328	77	Weighted Average
	19,923		78.66% Pervious Area
	5,405		21.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2200	2.35		<b>Shallow Concentrated Flow, Woods. - Conc. Flow</b> Woodland Kv= 5.0 fps
0.4	106	0.0425	4.18		<b>Shallow Concentrated Flow, Pavement- Conc. Flow</b> Paved Kv= 20.3 fps
9.3	258	Total			

**Summary for Subcatchment P2c: Prop. TO CB3&4**

Runoff = 0.74 cfs @ 12.12 hrs, Volume= 2,536 cf, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

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	Area (sf)	CN	Description
*	1,439	98	Existing Building
*	5,243	98	Pavement
	8,422	74	>75% Grass cover, Good, HSG C
	7,853	70	Woods, Good, HSG C
	22,957	80	Weighted Average
	16,275		70.89% Pervious Area
	6,682		29.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	62	0.2340	0.19		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.4	38	0.1050	0.27		<b>Sheet Flow, Grass- Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.5	152	0.0660	5.22		<b>Shallow Concentrated Flow, Pavment- Conc. Flow</b> Paved Kv= 20.3 fps
8.5	252	Total			

**Summary for Subcatchment P3: Prop.-To 10R Webster**

Runoff = 0.14 cfs @ 12.10 hrs, Volume= 473 cf, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
5,170	74	>75% Grass cover, Good, HSG C
1,000	70	Woods, Good, HSG C
6,170	73	Weighted Average
6,170		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P4a: Prop. To CB5&6**

Runoff = 0.75 cfs @ 12.10 hrs, Volume= 2,403 cf, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

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Area (sf)	CN	Description
* 573	98	Existing Buildings
* 2,734	96	Gravel Driveway
* 5,003	98	Pavment
7,210	74	>75% Grass cover, Good, HSG C
2,515	70	Woods, Good, HSG C
18,035	84	Weighted Average
12,459		69.08% Pervious Area
5,576		30.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0550	0.25		<b>Sheet Flow, Grass/Gravel - Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.4	55	0.1100	2.32		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.1	50	0.0800	5.74		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
7.1	205	Total			

**Summary for Subcatchment P4b: Prop. Overland Flow**

Runoff = 1.01 cfs @ 12.20 hrs, Volume= 4,343 cf, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 2,823	96	Rip Rap Slope
23,008	74	>75% Grass cover, Good, HSG C
30,845	70	Woods, Good, HSG C
56,676	73	Weighted Average
56,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	117	0.0340	0.92		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
2.0	187	0.0480	1.53		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.8	40	0.0250	0.79		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
13.7	444	Total			

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**Summary for Subcatchment P4c: Prop. Rear of Buildings 11&12**

Runoff = 0.12 cfs @ 12.08 hrs, Volume= 427 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 1,788	98	Building Roof
1,788		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5a: Prop. Lot 9**

Runoff = 0.28 cfs @ 12.20 hrs, Volume= 1,127 cf, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 1,142	98	Building Roof
* 2,645	98	Driveway & Walkway
4,299	74	>75% Grass cover, Good, HSG C
8,086	85	Weighted Average
4,299		53.17% Pervious Area
3,787		46.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	68	0.0100	0.08		<b>Sheet Flow, Grass -Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"

**Summary for Subcatchment P5b: Prop. To Onsite Depression**

Runoff = 1.20 cfs @ 12.14 hrs, Volume= 4,456 cf, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

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Type III 24-hr 2-yr Rainfall=3.10"

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Area (sf)	CN	Description
* 2,196	98	Buildings & Stairs
* 4,200	96	Gravel Driveways
3,067	74	>75% Grass cover, Good, HSG C
48,689	70	Woods, Good, HSG C
58,152	73	Weighted Average
55,956		96.22% Pervious Area
2,196		3.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.2000	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2110	2.30		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
9.1	152	Total			

**Summary for Subcatchment P5c: Prop. To CB9**

Runoff = 0.87 cfs @ 12.16 hrs, Volume= 3,240 cf, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 3,897	98	Buildings
* 7,948	98	Pavement & Walkways
7,691	74	>75% Grass cover, Good, HSG C
19,536	89	Weighted Average
7,691		39.37% Pervious Area
11,845		60.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	70	0.0200	0.11		<b>Sheet Flow, Woods - Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"
0.6	233	0.1000	6.42		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
11.5	303	Total			

**Summary for Subcatchment P5d: Prop. To CB7&8**

Runoff = 2.12 cfs @ 12.09 hrs, Volume= 6,556 cf, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

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	Area (sf)	CN	Description
*	8,568	98	Buildings
*	13,891	98	Pavement & Walkways
	23,141	74	>75% Grass cover, Good, HSG C
	1,433	70	Woods, Good, HSG C
	47,033	85	Weighted Average
	24,574		52.25% Pervious Area
	22,459		47.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5e: Prop. Rear of Buildings 7-10**

Runoff = 0.25 cfs @ 12.08 hrs, Volume= 855 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
*	3,576	98	Building Roof
	3,576		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5f: Prop. Overland Flow**

Runoff = 0.97 cfs @ 12.16 hrs, Volume= 3,791 cf, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
	24,885	74	>75% Grass cover, Good, HSG C
	27,513	70	Woods, Good, HSG C
	52,398	72	Weighted Average
	52,398		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.2400	0.21		<b>Sheet Flow, Grass - Sheet Flow</b>
					Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	211	0.0560	1.66		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b>
					Short Grass Pasture Kv= 7.0 fps
10.2	311	Total			

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**Summary for Subcatchment P5g: Prop. Overland Flow**

Runoff = 1.74 cfs @ 12.15 hrs, Volume= 6,887 cf, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
16,729	74	>75% Grass cover, Good, HSG C
84,227	70	Woods, Good, HSG C
100,956	71	Weighted Average
100,956		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.5	209	0.2060	2.27		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
10.0	309	Total			

**Summary for Reach E5: Exist. To Wetland A**

Inflow Area = 254,680 sf, 1.78% Impervious, Inflow Depth = 0.49" for 2-yr event  
 Inflow = 2.51 cfs @ 12.17 hrs, Volume= 10,468 cf  
 Outflow = 2.51 cfs @ 12.17 hrs, Volume= 10,468 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P1: Prop. To North CB**

Inflow Area = 110,949 sf, 10.24% Impervious, Inflow Depth = 0.95" for 2-yr event  
 Inflow = 2.13 cfs @ 12.19 hrs, Volume= 8,748 cf  
 Outflow = 2.13 cfs @ 12.19 hrs, Volume= 8,748 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P2: Prop. To South CB**

Inflow Area = 81,934 sf, 23.93% Impervious, Inflow Depth = 0.62" for 2-yr event  
 Inflow = 1.18 cfs @ 12.11 hrs, Volume= 4,202 cf  
 Outflow = 1.18 cfs @ 12.11 hrs, Volume= 4,202 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

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## Summary for Reach P4: Prop. To Wetland E

Inflow Area = 76,499 sf, 9.63% Impervious, Inflow Depth = 1.06" for 2-yr event  
 Inflow = 1.58 cfs @ 12.16 hrs, Volume= 6,746 cf  
 Outflow = 1.58 cfs @ 12.16 hrs, Volume= 6,746 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Reach P5: Prop. To Wetland A

Inflow Area = 289,737 sf, 15.14% Impervious, Inflow Depth > 0.63" for 2-yr event  
 Inflow = 1.74 cfs @ 12.15 hrs, Volume= 15,331 cf  
 Outflow = 1.74 cfs @ 12.15 hrs, Volume= 15,331 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Pond DW1: Prop. Drywells

Inflow Area = 2,983 sf, 100.00% Impervious, Inflow Depth = 2.87" for 2-yr event  
 Inflow = 0.21 cfs @ 12.08 hrs, Volume= 713 cf  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 90.25' @ 24.34 hrs Surf.Area= 384 sf Storage= 713 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prisma</b> toid x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	88.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prisma</b> toid x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	90.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4
#4	92.00'	1,000 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4
		1,880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	2	0	0
92.05	10,000	250	250

Device	Routing	Invert	Outlet Devices
#1	Primary	92.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=87.50' TW=0.00' (Dynamic Tailwater)

↑**1=Orifice/Grate** ( Controls 0.00 cfs)

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## Summary for Pond DW2: Prop. Drywells

Inflow Area = 1,788 sf, 100.00% Impervious, Inflow Depth = 2.87" for 2-yr event  
 Inflow = 0.12 cfs @ 12.08 hrs, Volume= 427 cf  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 60.93' @ 24.34 hrs Surf.Area= 198 sf Storage= 427 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	133 cf	<b>7.67'W x 12.50'L x 3.50'H Prismatic</b> x 2 671 cf Overall - 339 cf Embedded = 332 cf x 40.0% Voids
#2	58.00'	298 cf	<b>5.67'W x 10.50'L x 2.50'H Prismatic</b> x 2 Inside #1 339 cf Overall - 3.0" Wall Thickness = 298 cf
#3	60.50'	9 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 2
#4	62.00'	2,501 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 2
		2,940 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=57.50' TW=0.00' (Dynamic Tailwater)  
 ←1=Orifice/Grate ( Controls 0.00 cfs)

## Summary for Pond DW3: Prop. Drywells

Inflow Area = 3,576 sf, 100.00% Impervious, Inflow Depth = 2.87" for 2-yr event  
 Inflow = 0.25 cfs @ 12.08 hrs, Volume= 855 cf  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 60.93' @ 24.34 hrs Surf.Area= 384 sf Storage= 855 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

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Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prismaoid</b> x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	58.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prismaoid</b> x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	60.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4 -Impervious
#4	62.00'	5,001 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4 -Impervious
		5,881 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=57.50' TW=54.00' (Dynamic Tailwater)  
 ↑1=Orifice/Grate ( Controls 0.00 cfs)

**Summary for Pond ED: Exist. Onsite-Depression**

Inflow Area = 91,650 sf, 3.96% Impervious, Inflow Depth = 0.92" for 2-yr event  
 Inflow = 1.58 cfs @ 12.23 hrs, Volume= 7,022 cf  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 69.50' @ 24.87 hrs Surf.Area= 6,854 sf Storage= 7,022 cf  
 Flood Elev= 72.00' Surf.Area= 16,000 sf Storage= 35,111 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	35,111 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,812	0	0	2,812
70.00	8,602	10,888	10,888	8,625
72.00	16,000	24,222	35,111	16,064

Device	Routing	Invert	Outlet Devices
#1	Primary	71.75'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

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Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.00' TW=0.00' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

## Summary for Pond IB: Infiltration Basin

Inflow Area = 122,543 sf, 30.91% Impervious, Inflow Depth = 1.33" for 2-yr event  
 Inflow = 3.72 cfs @ 12.11 hrs, Volume= 13,587 cf  
 Outflow = 0.33 cfs @ 13.85 hrs, Volume= 8,444 cf, Atten= 91%, Lag= 104.2 min  
 Primary = 0.33 cfs @ 13.85 hrs, Volume= 8,444 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 56.77' @ 13.85 hrs Surf.Area= 3,410 sf Storage= 7,463 cf

Plug-Flow detention time= 294.8 min calculated for 8,444 cf (62% of inflow)

Center-of-Mass det. time= 183.7 min ( 1,022.0 - 838.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	21,422 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	2,014	0	0
56.00	2,996	5,010	5,010
58.00	4,078	7,074	12,084
60.00	5,260	9,338	21,422

Device	Routing	Invert	Outlet Devices
#1	Primary	56.00'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	57.00'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#3	Primary	58.00'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600
#4	Primary	59.00'	<b>6.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b>
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64			
2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74			

Primary OutFlow Max=0.33 cfs @ 13.85 hrs HW=56.77' TW=0.00' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.33 cfs @ 3.73 fps)

2=Orifice/Grate ( Controls 0.00 cfs)

3=Orifice/Grate ( Controls 0.00 cfs)

4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

## Summary for Pond IF: Infil. Field #1

Inflow Area = 48,285 sf, 25.03% Impervious, Inflow Depth = 1.23" for 2-yr event  
 Inflow = 1.41 cfs @ 12.13 hrs, Volume= 4,944 cf  
 Outflow = 0.45 cfs @ 12.53 hrs, Volume= 4,944 cf, Atten= 68%, Lag= 23.7 min  
 Discarded = 0.19 cfs @ 11.82 hrs, Volume= 4,642 cf  
 Primary = 0.26 cfs @ 12.53 hrs, Volume= 302 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 37.43' @ 12.53 hrs Surf.Area= 988 sf Storage= 1,425 cf

Flood Elev= 38.75' Surf.Area= 988 sf Storage= 2,054 cf

Plug-Flow detention time= 52.7 min calculated for 4,942 cf (100% of inflow)

Center-of-Mass det. time= 52.7 min ( 904.6 - 851.9 )

Volume	Invert	Avail.Storage	Storage Description
#1A	35.25'	935 cf	<b>30.00'W x 32.92'L x 3.50'H Field A</b> 3,457 cf Overall - 1,120 cf Embedded = 2,337 cf x 40.0% Voids
#2A	35.75'	1,120 cf	<b>ADS_StormTech SC-740 x 24 Inside #1</b> Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 6 rows
		2,054 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.25'	<b>Custom Weir/Orifice, Cv= 2.62 (C= 3.28)</b> Elev. (feet) 37.25 38.00 38.00 39.00 Width (feet) 1.00 1.00 4.00 4.00
#2	Discarded	35.25'	<b>8.270 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'

**Discarded OutFlow** Max=0.19 cfs @ 11.82 hrs HW=35.29' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=0.26 cfs @ 12.53 hrs HW=37.43' TW=0.00' (Dynamic Tailwater)

↑**1=Custom Weir/Orifice** (Weir Controls 0.26 cfs @ 1.40 fps)

## Summary for Pond PD: Prop. Onsite Depression

Inflow Area = 66,238 sf, 9.03% Impervious, Inflow Depth = 1.01" for 2-yr event

Inflow = 1.46 cfs @ 12.15 hrs, Volume= 5,583 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 69.45' @ 24.79 hrs Surf.Area= 5,517 sf Storage= 5,583 cf

Flood Elev= 72.00' Surf.Area= 12,365 sf Storage= 28,182 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	28,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,400	0	0	2,400
70.00	7,036	9,030	9,030	7,060
72.00	12,365	19,152	28,182	12,434

Device	Routing	Invert	Outlet Devices
#1	Primary	71.25'	<b>8.0" Round Culvert</b> L= 175.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.25' / 66.00' S= 0.0300 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=68.00' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** ( Controls 0.00 cfs)

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points x 3  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

<b>Subcatchment E1: Exist. To North CB</b>	Runoff Area=114,974 sf 7.29% Impervious Runoff Depth=1.97" Flow Length=568' Tc=14.2 min CN=74 Runoff=4.65 cfs 18,897 cf
<b>Subcatchment E2: Exist. To South CB</b>	Runoff Area=89,505 sf 11.68% Impervious Runoff Depth=2.21" Flow Length=254' Tc=9.3 min CN=77 Runoff=4.74 cfs 16,488 cf
<b>Subcatchment E3: Exist. To 10R Webster</b>	Runoff Area=6,692 sf 0.00% Impervious Runoff Depth=1.82" Tc=6.0 min CN=72 Runoff=0.32 cfs 1,015 cf
<b>Subcatchment E4: Exist. To Wetland E</b>	Runoff Area=99,439 sf 4.37% Impervious Runoff Depth=1.82" Flow Length=449' Tc=14.6 min CN=72 Runoff=3.64 cfs 15,085 cf
<b>Subcatchment E5a: Exist. To Onsite</b>	Runoff Area=91,650 sf 3.96% Impervious Runoff Depth=1.90" Flow Length=218' Tc=15.1 min CN=73 Runoff=3.46 cfs 14,478 cf
<b>Subcatchment E5b: Exist. Overland Flow</b>	Runoff Area=163,030 sf 0.56% Impervious Runoff Depth=1.67" Flow Length=433' Tc=10.9 min CN=70 Runoff=6.02 cfs 22,739 cf
<b>Subcatchment P1a: Prop. Rear of</b>	Runoff Area=2,983 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.30 cfs 1,060 cf
<b>Subcatchment P1b: Prop. Overland Flow</b>	Runoff Area=107,966 sf 7.76% Impervious Runoff Depth=1.97" Flow Length=460' Tc=12.6 min CN=74 Runoff=4.56 cfs 17,746 cf
<b>Subcatchment P2a: Prop. Overland to CB</b>	Runoff Area=33,649 sf 22.34% Impervious Runoff Depth=2.55" Flow Length=188' Tc=7.7 min CN=81 Runoff=2.18 cfs 7,145 cf
<b>Subcatchment P2b: Prop. TO CB1&amp;2</b>	Runoff Area=25,328 sf 21.34% Impervious Runoff Depth=2.21" Flow Length=258' Tc=9.3 min CN=77 Runoff=1.34 cfs 4,666 cf
<b>Subcatchment P2c: Prop. TO CB3&amp;4</b>	Runoff Area=22,957 sf 29.11% Impervious Runoff Depth=2.46" Flow Length=252' Tc=8.5 min CN=80 Runoff=1.40 cfs 4,709 cf
<b>Subcatchment P3: Prop.-To 10R Webster</b>	Runoff Area=6,170 sf 0.00% Impervious Runoff Depth=1.90" Tc=6.0 min CN=73 Runoff=0.31 cfs 975 cf
<b>Subcatchment P4a: Prop. To CB5&amp;6</b>	Runoff Area=18,035 sf 30.92% Impervious Runoff Depth=2.82" Flow Length=205' Tc=7.1 min CN=84 Runoff=1.31 cfs 4,233 cf
<b>Subcatchment P4b: Prop. Overland Flow</b>	Runoff Area=56,676 sf 0.00% Impervious Runoff Depth=1.90" Flow Length=444' Tc=13.7 min CN=73 Runoff=2.22 cfs 8,953 cf
<b>Subcatchment P4c: Prop. Rear of</b>	Runoff Area=1,788 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.18 cfs 635 cf
<b>Subcatchment P5a: Prop. Lot 9</b>	Runoff Area=8,086 sf 46.83% Impervious Runoff Depth=2.91" Flow Length=68' Slope=0.0100 '/' Tc=14.1 min CN=85 Runoff=0.49 cfs 1,960 cf

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<b>Subcatchment P5b: Prop. To Onsite</b>	Runoff Area=58,152 sf 3.78% Impervious Runoff Depth=1.90" Flow Length=152' Tc=9.1 min CN=73 Runoff=2.62 cfs 9,186 cf
<b>Subcatchment P5c: Prop. To CB9</b>	Runoff Area=19,536 sf 60.63% Impervious Runoff Depth=3.30" Flow Length=303' Tc=11.5 min CN=89 Runoff=1.42 cfs 5,365 cf
<b>Subcatchment P5d: Prop. To CB7&amp;8</b>	Runoff Area=47,033 sf 47.75% Impervious Runoff Depth=2.91" Tc=6.0 min CN=85 Runoff=3.66 cfs 11,402 cf
<b>Subcatchment P5e: Prop. Rear of</b>	Runoff Area=3,576 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.36 cfs 1,271 cf
<b>Subcatchment P5f: Prop. Overland Flow</b>	Runoff Area=52,398 sf 0.00% Impervious Runoff Depth=1.82" Flow Length=311' Tc=10.2 min CN=72 Runoff=2.18 cfs 7,949 cf
<b>Subcatchment P5g: Prop. Overland Flow</b>	Runoff Area=100,956 sf 0.00% Impervious Runoff Depth=1.75" Flow Length=309' Tc=10.0 min CN=71 Runoff=4.03 cfs 14,692 cf
<b>Reach E5: Exist. To Wetland A</b>	Inflow=6.02 cfs 22,739 cf Outflow=6.02 cfs 22,739 cf
<b>Reach P1: Prop. To North CB</b>	Inflow=4.56 cfs 17,926 cf Outflow=4.56 cfs 17,926 cf
<b>Reach P2: Prop. To South CB</b>	Inflow=3.62 cfs 10,042 cf Outflow=3.62 cfs 10,042 cf
<b>Reach P4: Prop. To Wetland E</b>	Inflow=3.23 cfs 13,382 cf Outflow=3.23 cfs 13,382 cf
<b>Reach P5: Prop. To Wetland A</b>	Inflow=4.41 cfs 34,642 cf Outflow=4.41 cfs 34,642 cf
<b>Pond DW1: Prop. Drywells</b>	Peak Elev=92.01' Storage=897 cf Inflow=0.30 cfs 1,060 cf Outflow=0.01 cfs 181 cf
<b>Pond DW2: Prop. Drywells</b>	Peak Elev=62.01' Storage=444 cf Inflow=0.18 cfs 635 cf Outflow=0.02 cfs 196 cf
<b>Pond DW3: Prop. Drywells</b>	Peak Elev=62.01' Storage=897 cf Inflow=0.36 cfs 1,271 cf Outflow=0.03 cfs 391 cf
<b>Pond ED: Exist. Onsite-Depression</b>	Peak Elev=70.39' Storage=14,478 cf Inflow=3.46 cfs 14,478 cf Outflow=0.00 cfs 0 cf
<b>Pond IB: Infiltration Basin</b>	Peak Elev=57.85' Storage=11,488 cf Inflow=6.86 cfs 25,106 cf Outflow=1.76 cfs 19,949 cf
<b>Pond IF: Infil. Field #1</b>	Peak Elev=37.97' Storage=1,735 cf Inflow=2.73 cfs 9,375 cf Discarded=0.19 cfs 6,478 cf Primary=1.99 cfs 2,897 cf Outflow=2.18 cfs 9,375 cf

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**Pond PD: Prop. Onsite Depression**

Peak Elev=70.29' Storage=11,147 cf Inflow=3.07 cfs 11,147 cf  
8.0" Round Culvert n=0.013 L=175.0' S=0.0300 '/' Outflow=0.00 cfs 0 cf

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**Summary for Subcatchment E1: Exist. To North CB**

Runoff = 4.65 cfs @ 12.20 hrs, Volume= 18,897 cf, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 11,010	86	Cart Path
95,584	70	Woods, Good, HSG C
114,974	74	Weighted Average
106,594		92.71% Pervious Area
8,380		7.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
4.3	468	0.1293	1.80		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
14.2	568	Total			

**Summary for Subcatchment E2: Exist. To South CB**

Runoff = 4.74 cfs @ 12.13 hrs, Volume= 16,488 cf, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
* 3,511	98	Ledge
* 6,016	98	Buildings & Stairs
* 12,247	96	Gravel Driveways
* 925	98	Concrete Driveway Gutters
11,500	74	>75% Grass cover, Good, HSG C
55,306	70	Woods, Good, HSG C
89,505	77	Weighted Average
79,053		88.32% Pervious Area
10,452		11.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.2450	0.21		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	154	0.0860	2.05		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
9.3	254	Total			

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**Summary for Subcatchment E3: Exist. To 10R Webster**

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 1,015 cf, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
2,996	74	>75% Grass cover, Good, HSG C
3,696	70	Woods, Good, HSG C
6,692	72	Weighted Average
6,692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment E4: Exist. To Wetland E**

Runoff = 3.64 cfs @ 12.21 hrs, Volume= 15,085 cf, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
* 2,611	98	Buildings & Stairs
* 1,734	98	Tennis Court
* 1,500	96	Gravel Driveways
8,680	74	>75% Grass cover, Good, HSG C
84,914	70	Woods, Good, HSG C
99,439	72	Weighted Average
95,094		95.63% Pervious Area
4,345		4.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
5.8	349	0.0401	1.00		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps

14.6 449 Total

**Summary for Subcatchment E5a: Exist. To Onsite Depression**

Runoff = 3.46 cfs @ 12.21 hrs, Volume= 14,478 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

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	Area (sf)	CN	Description
*	2,196	98	Buildings & Stairs
*	1,430	98	Tennis Court
*	4,200	96	Gravel Driveways
*	3,480	86	Cart Path
	5,150	74	>75% Grass cover, Good, HSG C
	75,194	70	Woods, Good, HSG C
	91,650	73	Weighted Average
	88,024		96.04% Pervious Area
	3,626		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0600	0.12		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	118	0.1610	2.01		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
15.1	218	Total			

**Summary for Subcatchment E5b: Exist. Overland Flow**

Runoff = 6.02 cfs @ 12.16 hrs, Volume= 22,739 cf, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

	Area (sf)	CN	Description
*	918	98	Tennis Court
	162,112	70	Woods, Good, HSG C
	163,030	70	Weighted Average
	162,112		99.44% Pervious Area
	918		0.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.3000	0.23		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
3.5	333	0.1020	1.60		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
10.9	433	Total			

**Summary for Subcatchment P1a: Prop. Rear of Buildings 4&5**

Runoff = 0.30 cfs @ 12.08 hrs, Volume= 1,060 cf, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

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Hickory Way OSRD Subdivision-Rev1

Type III 24-hr 10-yr Rainfall=4.50"

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Area (sf)	CN	Description
* 2,983	98	Building Roof
2,983		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P1b: Prop. Overland Flow**

Runoff = 4.56 cfs @ 12.18 hrs, Volume= 17,746 cf, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 5,286	86	Cart path
25,100	74	>75% Grass cover, Good, HSG C
69,200	70	Woods, Good, HSG C
107,966	74	Weighted Average
99,586		92.24% Pervious Area
8,380		7.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	75	0.1200	2.42		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
2.2	285	0.1800	2.12		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
12.6	460	Total			

**Summary for Subcatchment P2a: Prop. Overland to CB**

Runoff = 2.18 cfs @ 12.11 hrs, Volume= 7,145 cf, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

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	Area (sf)	CN	Description
*	3,511	98	Ledge
*	4,005	98	Existing Buildings
*	4,268	96	Gravel Driveway
	9,565	74	>75% Grass cover, Good, HSG C
	12,300	70	Woods, Good, HSG C
	33,649	81	Weighted Average
	26,133		77.66% Pervious Area
	7,516		22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.3500	0.24		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	88	0.0625	1.75		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
7.7	188	Total			

**Summary for Subcatchment P2b: Prop. TO CB1&2**

Runoff = 1.34 cfs @ 12.13 hrs, Volume= 4,666 cf, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

	Area (sf)	CN	Description
*	5,405	98	Pavement
	6,096	74	>75% Grass cover, Good, HSG C
	13,827	70	Woods, Good, HSG C
	25,328	77	Weighted Average
	19,923		78.66% Pervious Area
	5,405		21.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2200	2.35		<b>Shallow Concentrated Flow, Woods. - Conc. Flow</b> Woodland Kv= 5.0 fps
0.4	106	0.0425	4.18		<b>Shallow Concentrated Flow, Pavement- Conc. Flow</b> Paved Kv= 20.3 fps
9.3	258	Total			

**Summary for Subcatchment P2c: Prop. TO CB3&4**

Runoff = 1.40 cfs @ 12.12 hrs, Volume= 4,709 cf, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

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	Area (sf)	CN	Description
*	1,439	98	Existing Building
*	5,243	98	Pavement
	8,422	74	>75% Grass cover, Good, HSG C
	7,853	70	Woods, Good, HSG C
	22,957	80	Weighted Average
	16,275		70.89% Pervious Area
	6,682		29.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	62	0.2340	0.19		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.4	38	0.1050	0.27		<b>Sheet Flow, Grass- Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.5	152	0.0660	5.22		<b>Shallow Concentrated Flow, Pavment- Conc. Flow</b> Paved Kv= 20.3 fps
8.5	252	Total			

**Summary for Subcatchment P3: Prop.-To 10R Webster**

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 975 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
5,170	74	>75% Grass cover, Good, HSG C
1,000	70	Woods, Good, HSG C
6,170	73	Weighted Average
6,170		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P4a: Prop. To CB5&6**

Runoff = 1.31 cfs @ 12.10 hrs, Volume= 4,233 cf, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

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Area (sf)	CN	Description
* 573	98	Existing Buildings
* 2,734	96	Gravel Driveway
* 5,003	98	Pavment
7,210	74	>75% Grass cover, Good, HSG C
2,515	70	Woods, Good, HSG C
18,035	84	Weighted Average
12,459		69.08% Pervious Area
5,576		30.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0550	0.25		<b>Sheet Flow, Grass/Gravel - Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.4	55	0.1100	2.32		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.1	50	0.0800	5.74		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
7.1	205	Total			

**Summary for Subcatchment P4b: Prop. Overland Flow**

Runoff = 2.22 cfs @ 12.19 hrs, Volume= 8,953 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
* 2,823	96	Rip Rap Slope
23,008	74	>75% Grass cover, Good, HSG C
30,845	70	Woods, Good, HSG C
56,676	73	Weighted Average
56,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	117	0.0340	0.92		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
2.0	187	0.0480	1.53		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.8	40	0.0250	0.79		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
13.7	444	Total			

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**Summary for Subcatchment P4c: Prop. Rear of Buildings 11&12**

Runoff = 0.18 cfs @ 12.08 hrs, Volume= 635 cf, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
* 1,788	98	Building Roof
1,788		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5a: Prop. Lot 9**

Runoff = 0.49 cfs @ 12.19 hrs, Volume= 1,960 cf, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
* 1,142	98	Building Roof
* 2,645	98	Driveway & Walkway
4,299	74	>75% Grass cover, Good, HSG C
8,086	85	Weighted Average
4,299		53.17% Pervious Area
3,787		46.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	68	0.0100	0.08		<b>Sheet Flow, Grass -Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"

**Summary for Subcatchment P5b: Prop. To Onsite Depression**

Runoff = 2.62 cfs @ 12.13 hrs, Volume= 9,186 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

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	Area (sf)	CN	Description
*	2,196	98	Buildings & Stairs
*	4,200	96	Gravel Driveways
	3,067	74	>75% Grass cover, Good, HSG C
	48,689	70	Woods, Good, HSG C
	58,152	73	Weighted Average
	55,956		96.22% Pervious Area
	2,196		3.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.2000	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2110	2.30		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
9.1	152	Total			

**Summary for Subcatchment P5c: Prop. To CB9**

Runoff = 1.42 cfs @ 12.15 hrs, Volume= 5,365 cf, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

	Area (sf)	CN	Description
*	3,897	98	Buildings
*	7,948	98	Pavement & Walkways
	7,691	74	>75% Grass cover, Good, HSG C
	19,536	89	Weighted Average
	7,691		39.37% Pervious Area
	11,845		60.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	70	0.0200	0.11		<b>Sheet Flow, Woods - Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"
0.6	233	0.1000	6.42		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
11.5	303	Total			

**Summary for Subcatchment P5d: Prop. To CB7&8**

Runoff = 3.66 cfs @ 12.09 hrs, Volume= 11,402 cf, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

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	Area (sf)	CN	Description
*	8,568	98	Buildings
*	13,891	98	Pavement & Walkways
	23,141	74	>75% Grass cover, Good, HSG C
	1,433	70	Woods, Good, HSG C
	47,033	85	Weighted Average
	24,574		52.25% Pervious Area
	22,459		47.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5e: Prop. Rear of Buildings 7-10**

Runoff = 0.36 cfs @ 12.08 hrs, Volume= 1,271 cf, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

	Area (sf)	CN	Description
*	3,576	98	Building Roof
	3,576		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5f: Prop. Overland Flow**

Runoff = 2.18 cfs @ 12.15 hrs, Volume= 7,949 cf, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

	Area (sf)	CN	Description
	24,885	74	>75% Grass cover, Good, HSG C
	27,513	70	Woods, Good, HSG C
	52,398	72	Weighted Average
	52,398		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.2400	0.21		<b>Sheet Flow, Grass - Sheet Flow</b>
					Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	211	0.0560	1.66		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b>
					Short Grass Pasture Kv= 7.0 fps
10.2	311	Total			

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**Summary for Subcatchment P5g: Prop. Overland Flow**

Runoff = 4.03 cfs @ 12.15 hrs, Volume= 14,692 cf, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=4.50"

Area (sf)	CN	Description
16,729	74	>75% Grass cover, Good, HSG C
84,227	70	Woods, Good, HSG C
100,956	71	Weighted Average
100,956		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.5	209	0.2060	2.27		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
10.0	309	Total			

**Summary for Reach E5: Exist. To Wetland A**Inflow Area = 254,680 sf, 1.78% Impervious, Inflow Depth = 1.07" for 10-yr event  
Inflow = 6.02 cfs @ 12.16 hrs, Volume= 22,739 cf  
Outflow = 6.02 cfs @ 12.16 hrs, Volume= 22,739 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P1: Prop. To North CB**Inflow Area = 110,949 sf, 10.24% Impervious, Inflow Depth = 1.94" for 10-yr event  
Inflow = 4.56 cfs @ 12.18 hrs, Volume= 17,926 cf  
Outflow = 4.56 cfs @ 12.18 hrs, Volume= 17,926 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P2: Prop. To South CB**Inflow Area = 81,934 sf, 23.93% Impervious, Inflow Depth = 1.47" for 10-yr event  
Inflow = 3.62 cfs @ 12.18 hrs, Volume= 10,042 cf  
Outflow = 3.62 cfs @ 12.18 hrs, Volume= 10,042 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

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## Summary for Reach P4: Prop. To Wetland E

Inflow Area = 76,499 sf, 9.63% Impervious, Inflow Depth = 2.10" for 10-yr event  
 Inflow = 3.23 cfs @ 12.15 hrs, Volume= 13,382 cf  
 Outflow = 3.23 cfs @ 12.15 hrs, Volume= 13,382 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Reach P5: Prop. To Wetland A

Inflow Area = 289,737 sf, 15.14% Impervious, Inflow Depth > 1.43" for 10-yr event  
 Inflow = 4.41 cfs @ 12.15 hrs, Volume= 34,642 cf  
 Outflow = 4.41 cfs @ 12.15 hrs, Volume= 34,642 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Pond DW1: Prop. Drywells

Inflow Area = 2,983 sf, 100.00% Impervious, Inflow Depth = 4.26" for 10-yr event  
 Inflow = 0.30 cfs @ 12.08 hrs, Volume= 1,060 cf  
 Outflow = 0.01 cfs @ 15.84 hrs, Volume= 181 cf, Atten= 97%, Lag= 225.7 min  
 Primary = 0.01 cfs @ 15.84 hrs, Volume= 181 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 92.01' @ 15.84 hrs Surf.Area= 5,601 sf Storage= 897 cf

Plug-Flow detention time= 653.5 min calculated for 181 cf (17% of inflow)

Center-of-Mass det. time= 369.1 min ( 1,119.0 - 749.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prismatic</b> x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	88.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prismatic</b> x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	90.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4
#4	92.00'	1,000 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4
		1,880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	2	0	0
92.05	10,000	250	250

Device	Routing	Invert	Outlet Devices
#1	Primary	92.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.01 cfs @ 15.84 hrs HW=92.01' TW=0.00' (Dynamic Tailwater)

↑**1=Orifice/Grate** (Weir Controls 0.01 cfs @ 0.26 fps)

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## Summary for Pond DW2: Prop. Drywells

Inflow Area = 1,788 sf, 100.00% Impervious, Inflow Depth = 4.26" for 10-yr event  
 Inflow = 0.18 cfs @ 12.08 hrs, Volume= 635 cf  
 Outflow = 0.02 cfs @ 12.86 hrs, Volume= 196 cf, Atten= 90%, Lag= 46.3 min  
 Primary = 0.02 cfs @ 12.86 hrs, Volume= 196 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 62.01' @ 12.86 hrs Surf.Area= 1,017 sf Storage= 444 cf

Plug-Flow detention time= 409.1 min calculated for 196 cf (31% of inflow)  
 Center-of-Mass det. time= 219.2 min ( 969.0 - 749.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	133 cf	<b>7.67'W x 12.50'L x 3.50'H Prismatic</b> x 2 671 cf Overall - 339 cf Embedded = 332 cf x 40.0% Voids
#2	58.00'	298 cf	<b>5.67'W x 10.50'L x 2.50'H Prismatic</b> x 2 Inside #1 339 cf Overall - 3.0" Wall Thickness = 298 cf
#3	60.50'	9 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 2
#4	62.00'	2,501 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 2
		2,940 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.02 cfs @ 12.86 hrs HW=62.01' TW=0.00' (Dynamic Tailwater)  
 ←1=Orifice/Grate (Weir Controls 0.02 cfs @ 0.33 fps)

## Summary for Pond DW3: Prop. Drywells

Inflow Area = 3,576 sf, 100.00% Impervious, Inflow Depth = 4.26" for 10-yr event  
 Inflow = 0.36 cfs @ 12.08 hrs, Volume= 1,271 cf  
 Outflow = 0.03 cfs @ 13.01 hrs, Volume= 391 cf, Atten= 92%, Lag= 55.3 min  
 Primary = 0.03 cfs @ 13.01 hrs, Volume= 391 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 62.01' @ 13.01 hrs Surf.Area= 384 sf Storage= 897 cf

Plug-Flow detention time= 413.2 min calculated for 391 cf (31% of inflow)  
 Center-of-Mass det. time= 223.5 min ( 973.3 - 749.8 )

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Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prismaoid</b> x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	58.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prismaoid</b> x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	60.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4 -Impervious
#4	62.00'	5,001 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4 -Impervious
		5,881 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.03 cfs @ 13.01 hrs HW=62.01' TW=57.64' (Dynamic Tailwater)  
 ↑**1=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.39 fps)

**Summary for Pond ED: Exist. Onsite-Depression**

Inflow Area = 91,650 sf, 3.96% Impervious, Inflow Depth = 1.90" for 10-yr event  
 Inflow = 3.46 cfs @ 12.21 hrs, Volume= 14,478 cf  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 70.39' @ 24.87 hrs Surf.Area= 9,863 sf Storage= 14,478 cf  
 Flood Elev= 72.00' Surf.Area= 16,000 sf Storage= 35,111 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	35,111 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,812	0	0	2,812
70.00	8,602	10,888	10,888	8,625
72.00	16,000	24,222	35,111	16,064

Device	Routing	Invert	Outlet Devices
#1	Primary	71.75'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

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Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.00' TW=0.00' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

## Summary for Pond IB: Infiltration Basin

Inflow Area = 122,543 sf, 30.91% Impervious, Inflow Depth = 2.46" for 10-yr event  
 Inflow = 6.86 cfs @ 12.11 hrs, Volume= 25,106 cf  
 Outflow = 1.76 cfs @ 12.55 hrs, Volume= 19,949 cf, Atten= 74%, Lag= 26.6 min  
 Primary = 1.76 cfs @ 12.55 hrs, Volume= 19,949 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 57.85' @ 12.55 hrs Surf.Area= 3,998 sf Storage= 11,488 cf

Plug-Flow detention time= 213.9 min calculated for 19,949 cf (79% of inflow)

Center-of-Mass det. time= 134.2 min ( 959.3 - 825.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	21,422 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	2,014	0	0
56.00	2,996	5,010	5,010
58.00	4,078	7,074	12,084
60.00	5,260	9,338	21,422

Device	Routing	Invert	Outlet Devices
#1	Primary	56.00'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	57.00'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#3	Primary	58.00'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600
#4	Primary	59.00'	<b>6.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b>
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64			
2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74			

Primary OutFlow Max=1.76 cfs @ 12.55 hrs HW=57.85' TW=0.00' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.55 cfs @ 6.25 fps)

2=Orifice/Grate (Orifice Controls 1.21 cfs @ 3.47 fps)

3=Orifice/Grate ( Controls 0.00 cfs)

4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

## Summary for Pond IF: Infil. Field #1

Inflow Area = 48,285 sf, 25.03% Impervious, Inflow Depth = 2.33" for 10-yr event  
 Inflow = 2.73 cfs @ 12.13 hrs, Volume= 9,375 cf  
 Outflow = 2.18 cfs @ 12.20 hrs, Volume= 9,375 cf, Atten= 20%, Lag= 4.7 min  
 Discarded = 0.19 cfs @ 11.61 hrs, Volume= 6,478 cf  
 Primary = 1.99 cfs @ 12.20 hrs, Volume= 2,897 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 37.97' @ 12.20 hrs Surf.Area= 988 sf Storage= 1,735 cf

Flood Elev= 38.75' Surf.Area= 988 sf Storage= 2,054 cf

Plug-Flow detention time= 44.8 min calculated for 9,375 cf (100% of inflow)

Center-of-Mass det. time= 44.8 min ( 878.1 - 833.2 )

Volume	Invert	Avail.Storage	Storage Description
#1A	35.25'	935 cf	<b>30.00'W x 32.92'L x 3.50'H Field A</b> 3,457 cf Overall - 1,120 cf Embedded = 2,337 cf x 40.0% Voids
#2A	35.75'	1,120 cf	<b>ADS_StormTech SC-740 x 24 Inside #1</b> Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 6 rows
		2,054 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.25'	<b>Custom Weir/Orifice, Cv= 2.62 (C= 3.28)</b> Elev. (feet) 37.25 38.00 38.00 39.00 Width (feet) 1.00 1.00 4.00 4.00
#2	Discarded	35.25'	<b>8.270 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'

**Discarded OutFlow** Max=0.19 cfs @ 11.61 hrs HW=35.29' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=1.99 cfs @ 12.20 hrs HW=37.97' TW=0.00' (Dynamic Tailwater)

↑**1=Custom Weir/Orifice** (Weir Controls 1.99 cfs @ 2.77 fps)

## Summary for Pond PD: Prop. Onsite Depression

Inflow Area = 66,238 sf, 9.03% Impervious, Inflow Depth = 2.02" for 10-yr event

Inflow = 3.07 cfs @ 12.14 hrs, Volume= 11,147 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 70.29' @ 24.79 hrs Surf.Area= 7,709 sf Storage= 11,147 cf

Flood Elev= 72.00' Surf.Area= 12,365 sf Storage= 28,182 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	28,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,400	0	0	2,400
70.00	7,036	9,030	9,030	7,060
72.00	12,365	19,152	28,182	12,434

Device	Routing	Invert	Outlet Devices
#1	Primary	71.25'	<b>8.0" Round Culvert</b> L= 175.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.25' / 66.00' S= 0.0300 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=68.00' TW=0.00' (Dynamic Tailwater)

↑1=Culvert ( Controls 0.00 cfs)

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points x 3  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

<b>Subcatchment E1: Exist. To North CB</b>	Runoff Area=114,974 sf 7.29% Impervious Runoff Depth=2.69" Flow Length=568' Tc=14.2 min CN=74 Runoff=6.41 cfs 25,747 cf
<b>Subcatchment E2: Exist. To South CB</b>	Runoff Area=89,505 sf 11.68% Impervious Runoff Depth=2.96" Flow Length=254' Tc=9.3 min CN=77 Runoff=6.37 cfs 22,085 cf
<b>Subcatchment E3: Exist. To 10R Webster</b>	Runoff Area=6,692 sf 0.00% Impervious Runoff Depth=2.51" Tc=6.0 min CN=72 Runoff=0.45 cfs 1,400 cf
<b>Subcatchment E4: Exist. To Wetland E</b>	Runoff Area=99,439 sf 4.37% Impervious Runoff Depth=2.51" Flow Length=449' Tc=14.6 min CN=72 Runoff=5.09 cfs 20,801 cf
<b>Subcatchment E5a: Exist. To Onsite</b>	Runoff Area=91,650 sf 3.96% Impervious Runoff Depth=2.60" Flow Length=218' Tc=15.1 min CN=73 Runoff=4.80 cfs 19,844 cf
<b>Subcatchment E5b: Exist. Overland Flow</b>	Runoff Area=163,030 sf 0.56% Impervious Runoff Depth=2.34" Flow Length=433' Tc=10.9 min CN=70 Runoff=8.59 cfs 31,758 cf
<b>Subcatchment P1a: Prop. Rear of</b>	Runoff Area=2,983 sf 100.00% Impervious Runoff Depth=5.16" Tc=6.0 min CN=98 Runoff=0.36 cfs 1,283 cf
<b>Subcatchment P1b: Prop. Overland Flow</b>	Runoff Area=107,966 sf 7.76% Impervious Runoff Depth=2.69" Flow Length=460' Tc=12.6 min CN=74 Runoff=6.28 cfs 24,178 cf
<b>Subcatchment P2a: Prop. Overland to CB</b>	Runoff Area=33,649 sf 22.34% Impervious Runoff Depth=3.34" Flow Length=188' Tc=7.7 min CN=81 Runoff=2.85 cfs 9,369 cf
<b>Subcatchment P2b: Prop. TO CB1&amp;2</b>	Runoff Area=25,328 sf 21.34% Impervious Runoff Depth=2.96" Flow Length=258' Tc=9.3 min CN=77 Runoff=1.80 cfs 6,250 cf
<b>Subcatchment P2c: Prop. TO CB3&amp;4</b>	Runoff Area=22,957 sf 29.11% Impervious Runoff Depth=3.24" Flow Length=252' Tc=8.5 min CN=80 Runoff=1.84 cfs 6,207 cf
<b>Subcatchment P3: Prop.-To 10R Webster</b>	Runoff Area=6,170 sf 0.00% Impervious Runoff Depth=2.60" Tc=6.0 min CN=73 Runoff=0.43 cfs 1,336 cf
<b>Subcatchment P4a: Prop. To CB5&amp;6</b>	Runoff Area=18,035 sf 30.92% Impervious Runoff Depth=3.64" Flow Length=205' Tc=7.1 min CN=84 Runoff=1.68 cfs 5,468 cf
<b>Subcatchment P4b: Prop. Overland Flow</b>	Runoff Area=56,676 sf 0.00% Impervious Runoff Depth=2.60" Flow Length=444' Tc=13.7 min CN=73 Runoff=3.09 cfs 12,271 cf
<b>Subcatchment P4c: Prop. Rear of</b>	Runoff Area=1,788 sf 100.00% Impervious Runoff Depth=5.16" Tc=6.0 min CN=98 Runoff=0.22 cfs 769 cf
<b>Subcatchment P5a: Prop. Lot 9</b>	Runoff Area=8,086 sf 46.83% Impervious Runoff Depth=3.74" Flow Length=68' Slope=0.0100 '/' Tc=14.1 min CN=85 Runoff=0.62 cfs 2,520 cf

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<b>Subcatchment P5b: Prop. To Onsite</b>	Runoff Area=58,152 sf 3.78% Impervious Runoff Depth=2.60" Flow Length=152' Tc=9.1 min CN=73 Runoff=3.64 cfs 12,591 cf
<b>Subcatchment P5c: Prop. To CB9</b>	Runoff Area=19,536 sf 60.63% Impervious Runoff Depth=4.16" Flow Length=303' Tc=11.5 min CN=89 Runoff=1.77 cfs 6,766 cf
<b>Subcatchment P5d: Prop. To CB7&amp;8</b>	Runoff Area=47,033 sf 47.75% Impervious Runoff Depth=3.74" Tc=6.0 min CN=85 Runoff=4.67 cfs 14,657 cf
<b>Subcatchment P5e: Prop. Rear of</b>	Runoff Area=3,576 sf 100.00% Impervious Runoff Depth=5.16" Tc=6.0 min CN=98 Runoff=0.43 cfs 1,538 cf
<b>Subcatchment P5f: Prop. Overland Flow</b>	Runoff Area=52,398 sf 0.00% Impervious Runoff Depth=2.51" Flow Length=311' Tc=10.2 min CN=72 Runoff=3.05 cfs 10,961 cf
<b>Subcatchment P5g: Prop. Overland Flow</b>	Runoff Area=100,956 sf 0.00% Impervious Runoff Depth=2.42" Flow Length=309' Tc=10.0 min CN=71 Runoff=5.69 cfs 20,388 cf
<b>Reach E5: Exist. To Wetland A</b>	Inflow=8.59 cfs 31,758 cf Outflow=8.59 cfs 31,758 cf
<b>Reach P1: Prop. To North CB</b>	Inflow=6.28 cfs 24,582 cf Outflow=6.28 cfs 24,582 cf
<b>Reach P2: Prop. To South CB</b>	Inflow=6.11 cfs 14,356 cf Outflow=6.11 cfs 14,356 cf
<b>Reach P4: Prop. To Wetland E</b>	Inflow=4.38 cfs 18,069 cf Outflow=4.38 cfs 18,069 cf
<b>Reach P5: Prop. To Wetland A</b>	Inflow=7.29 cfs 48,265 cf Outflow=7.29 cfs 48,265 cf
<b>Pond DW1: Prop. Drywells</b>	Peak Elev=92.01' Storage=933 cf Inflow=0.36 cfs 1,283 cf Outflow=0.02 cfs 404 cf
<b>Pond DW2: Prop. Drywells</b>	Peak Elev=62.02' Storage=464 cf Inflow=0.22 cfs 769 cf Outflow=0.06 cfs 329 cf
<b>Pond DW3: Prop. Drywells</b>	Peak Elev=62.03' Storage=959 cf Inflow=0.43 cfs 1,538 cf Outflow=0.10 cfs 659 cf
<b>Pond ED: Exist. Onsite-Depression</b>	Peak Elev=70.89' Storage=19,844 cf Inflow=4.80 cfs 19,844 cf Outflow=0.00 cfs 0 cf
<b>Pond IB: Infiltration Basin</b>	Peak Elev=58.46' Storage=14,039 cf Inflow=8.98 cfs 33,042 cf Outflow=3.25 cfs 27,877 cf
<b>Pond IF: Infil. Field #1</b>	Peak Elev=38.15' Storage=1,817 cf Inflow=3.64 cfs 12,457 cf Discarded=0.19 cfs 7,470 cf Primary=3.39 cfs 4,987 cf Outflow=3.58 cfs 12,457 cf

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**Pond PD: Prop. Onsite Depression**

Peak Elev=70.76' Storage=15,111 cf Inflow=4.21 cfs 15,111 cf  
8.0" Round Culvert n=0.013 L=175.0' S=0.0300 '/' Outflow=0.00 cfs 0 cf

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**Summary for Subcatchment E1: Exist. To North CB**

Runoff = 6.41 cfs @ 12.20 hrs, Volume= 25,747 cf, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 11,010	86	Cart Path
95,584	70	Woods, Good, HSG C
114,974	74	Weighted Average
106,594		92.71% Pervious Area
8,380		7.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
4.3	468	0.1293	1.80		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
14.2	568	Total			

**Summary for Subcatchment E2: Exist. To South CB**

Runoff = 6.37 cfs @ 12.13 hrs, Volume= 22,085 cf, Depth= 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
* 3,511	98	Ledge
* 6,016	98	Buildings & Stairs
* 12,247	96	Gravel Driveways
* 925	98	Concrete Driveway Gutters
11,500	74	>75% Grass cover, Good, HSG C
55,306	70	Woods, Good, HSG C
89,505	77	Weighted Average
79,053		88.32% Pervious Area
10,452		11.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.2450	0.21		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	154	0.0860	2.05		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
9.3	254	Total			

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**Summary for Subcatchment E3: Exist. To 10R Webster**

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 1,400 cf, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
2,996	74	>75% Grass cover, Good, HSG C
3,696	70	Woods, Good, HSG C
6,692	72	Weighted Average
6,692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment E4: Exist. To Wetland E**

Runoff = 5.09 cfs @ 12.21 hrs, Volume= 20,801 cf, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
* 2,611	98	Buildings & Stairs
* 1,734	98	Tennis Court
* 1,500	96	Gravel Driveways
8,680	74	>75% Grass cover, Good, HSG C
84,914	70	Woods, Good, HSG C
99,439	72	Weighted Average
95,094		95.63% Pervious Area
4,345		4.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
5.8	349	0.0401	1.00		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps

14.6 449 Total

**Summary for Subcatchment E5a: Exist. To Onsite Depression**

Runoff = 4.80 cfs @ 12.21 hrs, Volume= 19,844 cf, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

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	Area (sf)	CN	Description
*	2,196	98	Buildings & Stairs
*	1,430	98	Tennis Court
*	4,200	96	Gravel Driveways
*	3,480	86	Cart Path
	5,150	74	>75% Grass cover, Good, HSG C
	75,194	70	Woods, Good, HSG C
	91,650	73	Weighted Average
	88,024		96.04% Pervious Area
	3,626		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0600	0.12		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	118	0.1610	2.01		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
15.1	218	Total			

**Summary for Subcatchment E5b: Exist. Overland Flow**

Runoff = 8.59 cfs @ 12.15 hrs, Volume= 31,758 cf, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

	Area (sf)	CN	Description
*	918	98	Tennis Court
	162,112	70	Woods, Good, HSG C
	163,030	70	Weighted Average
	162,112		99.44% Pervious Area
	918		0.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.3000	0.23		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
3.5	333	0.1020	1.60		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
10.9	433	Total			

**Summary for Subcatchment P1a: Prop. Rear of Buildings 4&5**

Runoff = 0.36 cfs @ 12.08 hrs, Volume= 1,283 cf, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

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Type III 24-hr 25-yr Rainfall=5.40"

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Area (sf)	CN	Description
* 2,983	98	Building Roof
2,983		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P1b: Prop. Overland Flow**

Runoff = 6.28 cfs @ 12.17 hrs, Volume= 24,178 cf, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 5,286	86	Cart path
25,100	74	>75% Grass cover, Good, HSG C
69,200	70	Woods, Good, HSG C
107,966	74	Weighted Average
99,586		92.24% Pervious Area
8,380		7.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	75	0.1200	2.42		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
2.2	285	0.1800	2.12		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
12.6	460	Total			

**Summary for Subcatchment P2a: Prop. Overland to CB**

Runoff = 2.85 cfs @ 12.11 hrs, Volume= 9,369 cf, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

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	Area (sf)	CN	Description
*	3,511	98	Ledge
*	4,005	98	Existing Buildings
*	4,268	96	Gravel Driveway
	9,565	74	>75% Grass cover, Good, HSG C
	12,300	70	Woods, Good, HSG C
	33,649	81	Weighted Average
	26,133		77.66% Pervious Area
	7,516		22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.3500	0.24		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	88	0.0625	1.75		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
7.7	188	Total			

**Summary for Subcatchment P2b: Prop. TO CB1&2**

Runoff = 1.80 cfs @ 12.13 hrs, Volume= 6,250 cf, Depth= 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

	Area (sf)	CN	Description
*	5,405	98	Pavement
	6,096	74	>75% Grass cover, Good, HSG C
	13,827	70	Woods, Good, HSG C
	25,328	77	Weighted Average
	19,923		78.66% Pervious Area
	5,405		21.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2200	2.35		<b>Shallow Concentrated Flow, Woods. - Conc. Flow</b> Woodland Kv= 5.0 fps
0.4	106	0.0425	4.18		<b>Shallow Concentrated Flow, Pavement- Conc. Flow</b> Paved Kv= 20.3 fps
9.3	258	Total			

**Summary for Subcatchment P2c: Prop. TO CB3&4**

Runoff = 1.84 cfs @ 12.12 hrs, Volume= 6,207 cf, Depth= 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

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	Area (sf)	CN	Description
*	1,439	98	Existing Building
*	5,243	98	Pavement
	8,422	74	>75% Grass cover, Good, HSG C
	7,853	70	Woods, Good, HSG C
	22,957	80	Weighted Average
	16,275		70.89% Pervious Area
	6,682		29.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	62	0.2340	0.19		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.4	38	0.1050	0.27		<b>Sheet Flow, Grass- Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.5	152	0.0660	5.22		<b>Shallow Concentrated Flow, Pavment- Conc. Flow</b> Paved Kv= 20.3 fps
8.5	252	Total			

**Summary for Subcatchment P3: Prop.-To 10R Webster**

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 1,336 cf, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
5,170	74	>75% Grass cover, Good, HSG C
1,000	70	Woods, Good, HSG C
6,170	73	Weighted Average
6,170		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P4a: Prop. To CB5&6**

Runoff = 1.68 cfs @ 12.10 hrs, Volume= 5,468 cf, Depth= 3.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

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Area (sf)	CN	Description
* 573	98	Existing Buildings
* 2,734	96	Gravel Driveway
* 5,003	98	Pavment
7,210	74	>75% Grass cover, Good, HSG C
2,515	70	Woods, Good, HSG C
18,035	84	Weighted Average
12,459		69.08% Pervious Area
5,576		30.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0550	0.25		<b>Sheet Flow, Grass/Gravel - Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.4	55	0.1100	2.32		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.1	50	0.0800	5.74		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
7.1	205	Total			

**Summary for Subcatchment P4b: Prop. Overland Flow**

Runoff = 3.09 cfs @ 12.19 hrs, Volume= 12,271 cf, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
* 2,823	96	Rip Rap Slope
23,008	74	>75% Grass cover, Good, HSG C
30,845	70	Woods, Good, HSG C
56,676	73	Weighted Average
56,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	117	0.0340	0.92		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
2.0	187	0.0480	1.53		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.8	40	0.0250	0.79		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
13.7	444	Total			

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**Summary for Subcatchment P4c: Prop. Rear of Buildings 11&12**

Runoff = 0.22 cfs @ 12.08 hrs, Volume= 769 cf, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
* 1,788	98	Building Roof
1,788		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5a: Prop. Lot 9**

Runoff = 0.62 cfs @ 12.19 hrs, Volume= 2,520 cf, Depth= 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
* 1,142	98	Building Roof
* 2,645	98	Driveway & Walkway
4,299	74	>75% Grass cover, Good, HSG C
8,086	85	Weighted Average
4,299		53.17% Pervious Area
3,787		46.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	68	0.0100	0.08		<b>Sheet Flow, Grass -Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"

**Summary for Subcatchment P5b: Prop. To Onsite Depression**

Runoff = 3.64 cfs @ 12.13 hrs, Volume= 12,591 cf, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

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	Area (sf)	CN	Description
*	2,196	98	Buildings & Stairs
*	4,200	96	Gravel Driveways
	3,067	74	>75% Grass cover, Good, HSG C
	48,689	70	Woods, Good, HSG C
	58,152	73	Weighted Average
	55,956		96.22% Pervious Area
	2,196		3.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.2000	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2110	2.30		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
9.1	152	Total			

**Summary for Subcatchment P5c: Prop. To CB9**

Runoff = 1.77 cfs @ 12.15 hrs, Volume= 6,766 cf, Depth= 4.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

	Area (sf)	CN	Description
*	3,897	98	Buildings
*	7,948	98	Pavement & Walkways
	7,691	74	>75% Grass cover, Good, HSG C
	19,536	89	Weighted Average
	7,691		39.37% Pervious Area
	11,845		60.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	70	0.0200	0.11		<b>Sheet Flow, Woods - Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"
0.6	233	0.1000	6.42		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
11.5	303	Total			

**Summary for Subcatchment P5d: Prop. To CB7&8**

Runoff = 4.67 cfs @ 12.09 hrs, Volume= 14,657 cf, Depth= 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

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	Area (sf)	CN	Description
*	8,568	98	Buildings
*	13,891	98	Pavement & Walkways
	23,141	74	>75% Grass cover, Good, HSG C
	1,433	70	Woods, Good, HSG C
	47,033	85	Weighted Average
	24,574		52.25% Pervious Area
	22,459		47.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5e: Prop. Rear of Buildings 7-10**

Runoff = 0.43 cfs @ 12.08 hrs, Volume= 1,538 cf, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

	Area (sf)	CN	Description
*	3,576	98	Building Roof
	3,576		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5f: Prop. Overland Flow**

Runoff = 3.05 cfs @ 12.14 hrs, Volume= 10,961 cf, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

	Area (sf)	CN	Description
	24,885	74	>75% Grass cover, Good, HSG C
	27,513	70	Woods, Good, HSG C
	52,398	72	Weighted Average
	52,398		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.2400	0.21		<b>Sheet Flow, Grass - Sheet Flow</b>
					Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	211	0.0560	1.66		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b>
					Short Grass Pasture Kv= 7.0 fps
10.2	311	Total			

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**Summary for Subcatchment P5g: Prop. Overland Flow**

Runoff = 5.69 cfs @ 12.14 hrs, Volume= 20,388 cf, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=5.40"

Area (sf)	CN	Description
16,729	74	>75% Grass cover, Good, HSG C
84,227	70	Woods, Good, HSG C
100,956	71	Weighted Average
100,956		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.5	209	0.2060	2.27		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
10.0	309	Total			

**Summary for Reach E5: Exist. To Wetland A**

Inflow Area = 254,680 sf, 1.78% Impervious, Inflow Depth = 1.50" for 25-yr event  
 Inflow = 8.59 cfs @ 12.15 hrs, Volume= 31,758 cf  
 Outflow = 8.59 cfs @ 12.15 hrs, Volume= 31,758 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P1: Prop. To North CB**

Inflow Area = 110,949 sf, 10.24% Impervious, Inflow Depth = 2.66" for 25-yr event  
 Inflow = 6.28 cfs @ 12.17 hrs, Volume= 24,582 cf  
 Outflow = 6.28 cfs @ 12.17 hrs, Volume= 24,582 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P2: Prop. To South CB**

Inflow Area = 81,934 sf, 23.93% Impervious, Inflow Depth = 2.10" for 25-yr event  
 Inflow = 6.11 cfs @ 12.13 hrs, Volume= 14,356 cf  
 Outflow = 6.11 cfs @ 12.13 hrs, Volume= 14,356 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

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## Summary for Reach P4: Prop. To Wetland E

Inflow Area = 76,499 sf, 9.63% Impervious, Inflow Depth = 2.83" for 25-yr event  
 Inflow = 4.38 cfs @ 12.15 hrs, Volume= 18,069 cf  
 Outflow = 4.38 cfs @ 12.15 hrs, Volume= 18,069 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Reach P5: Prop. To Wetland A

Inflow Area = 289,737 sf, 15.14% Impervious, Inflow Depth > 2.00" for 25-yr event  
 Inflow = 7.29 cfs @ 12.16 hrs, Volume= 48,265 cf  
 Outflow = 7.29 cfs @ 12.16 hrs, Volume= 48,265 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Pond DW1: Prop. Drywells

Inflow Area = 2,983 sf, 100.00% Impervious, Inflow Depth = 5.16" for 25-yr event  
 Inflow = 0.36 cfs @ 12.08 hrs, Volume= 1,283 cf  
 Outflow = 0.02 cfs @ 13.75 hrs, Volume= 404 cf, Atten= 94%, Lag= 99.9 min  
 Primary = 0.02 cfs @ 13.75 hrs, Volume= 404 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 92.01' @ 13.75 hrs Surf.Area= 9,660 sf Storage= 933 cf

Plug-Flow detention time= 438.7 min calculated for 404 cf (31% of inflow)

Center-of-Mass det. time= 247.9 min ( 994.6 - 746.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prismaoid</b> x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	88.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prismaoid</b> x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	90.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4
#4	92.00'	1,000 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4
		1,880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	2	0	0
92.05	10,000	250	250

Device	Routing	Invert	Outlet Devices
#1	Primary	92.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.02 cfs @ 13.75 hrs HW=92.01' TW=0.00' (Dynamic Tailwater)

↑**1=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.35 fps)

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## Summary for Pond DW2: Prop. Drywells

Inflow Area = 1,788 sf, 100.00% Impervious, Inflow Depth = 5.16" for 25-yr event  
 Inflow = 0.22 cfs @ 12.08 hrs, Volume= 769 cf  
 Outflow = 0.06 cfs @ 12.40 hrs, Volume= 329 cf, Atten= 70%, Lag= 18.8 min  
 Primary = 0.06 cfs @ 12.40 hrs, Volume= 329 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 62.02' @ 12.40 hrs Surf.Area= 2,148 sf Storage= 464 cf

Plug-Flow detention time= 307.2 min calculated for 329 cf (43% of inflow)  
 Center-of-Mass det. time= 159.0 min ( 905.7 - 746.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	133 cf	<b>7.67'W x 12.50'L x 3.50'H Prismatic</b> x 2 671 cf Overall - 339 cf Embedded = 332 cf x 40.0% Voids
#2	58.00'	298 cf	<b>5.67'W x 10.50'L x 2.50'H Prismatic</b> x 2 Inside #1 339 cf Overall - 3.0" Wall Thickness = 298 cf
#3	60.50'	9 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 2
#4	62.00'	2,501 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 2
		2,940 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.06 cfs @ 12.40 hrs HW=62.02' TW=0.00' (Dynamic Tailwater)  
 ←1=Orifice/Grate (Weir Controls 0.06 cfs @ 0.51 fps)

## Summary for Pond DW3: Prop. Drywells

Inflow Area = 3,576 sf, 100.00% Impervious, Inflow Depth = 5.16" for 25-yr event  
 Inflow = 0.43 cfs @ 12.08 hrs, Volume= 1,538 cf  
 Outflow = 0.10 cfs @ 12.48 hrs, Volume= 659 cf, Atten= 78%, Lag= 24.1 min  
 Primary = 0.10 cfs @ 12.48 hrs, Volume= 659 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 62.03' @ 12.48 hrs Surf.Area= 384 sf Storage= 959 cf

Plug-Flow detention time= 312.9 min calculated for 659 cf (43% of inflow)  
 Center-of-Mass det. time= 164.5 min ( 911.2 - 746.8 )

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Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prismaoid</b> x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	58.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prismaoid</b> x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	60.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4 -Impervious
#4	62.00'	5,001 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4 -Impervious
		5,881 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.10 cfs @ 12.48 hrs HW=62.03' TW=58.46' (Dynamic Tailwater)  
 ↑**1=Orifice/Grate** (Weir Controls 0.10 cfs @ 0.58 fps)

**Summary for Pond ED: Exist. Onsite-Depression**

Inflow Area = 91,650 sf, 3.96% Impervious, Inflow Depth = 2.60" for 25-yr event  
 Inflow = 4.80 cfs @ 12.21 hrs, Volume= 19,844 cf  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 70.89' @ 24.87 hrs Surf.Area= 11,611 sf Storage= 19,844 cf  
 Flood Elev= 72.00' Surf.Area= 16,000 sf Storage= 35,111 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	35,111 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,812	0	0	2,812
70.00	8,602	10,888	10,888	8,625
72.00	16,000	24,222	35,111	16,064

Device	Routing	Invert	Outlet Devices
#1	Primary	71.75'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

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**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=68.00' TW=0.00' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond IB: Infiltration Basin

Inflow Area = 122,543 sf, 30.91% Impervious, Inflow Depth = 3.24" for 25-yr event  
 Inflow = 8.98 cfs @ 12.11 hrs, Volume= 33,042 cf  
 Outflow = 3.25 cfs @ 12.47 hrs, Volume= 27,877 cf, Atten= 64%, Lag= 21.3 min  
 Primary = 3.25 cfs @ 12.47 hrs, Volume= 27,877 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 58.46' @ 12.47 hrs Surf.Area= 4,352 sf Storage= 14,039 cf

Plug-Flow detention time= 182.1 min calculated for 27,868 cf (84% of inflow)  
 Center-of-Mass det. time= 115.5 min ( 933.2 - 817.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	21,422 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	2,014	0	0
56.00	2,996	5,010	5,010
58.00	4,078	7,074	12,084
60.00	5,260	9,338	21,422

Device	Routing	Invert	Outlet Devices
#1	Primary	56.00'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	57.00'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#3	Primary	58.00'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600
#4	Primary	59.00'	<b>6.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b>
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64			
2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74			

**Primary OutFlow** Max=3.25 cfs @ 12.47 hrs HW=58.46' TW=0.00' (Dynamic Tailwater)

↑1=**Orifice/Grate** (Orifice Controls 0.64 cfs @ 7.30 fps)

↑2=**Orifice/Grate** (Orifice Controls 1.79 cfs @ 5.12 fps)

↑3=**Orifice/Grate** (Orifice Controls 0.83 cfs @ 2.32 fps)

↑4=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond IF: Infil. Field #1

Inflow Area = 48,285 sf, 25.03% Impervious, Inflow Depth = 3.10" for 25-yr event  
 Inflow = 3.64 cfs @ 12.12 hrs, Volume= 12,457 cf  
 Outflow = 3.58 cfs @ 12.14 hrs, Volume= 12,457 cf, Atten= 2%, Lag= 1.1 min  
 Discarded = 0.19 cfs @ 11.32 hrs, Volume= 7,470 cf  
 Primary = 3.39 cfs @ 12.14 hrs, Volume= 4,987 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.15' @ 12.14 hrs Surf.Area= 988 sf Storage= 1,817 cf

Flood Elev= 38.75' Surf.Area= 988 sf Storage= 2,054 cf

Plug-Flow detention time= 40.4 min calculated for 12,453 cf (100% of inflow)

Center-of-Mass det. time= 40.4 min ( 865.5 - 825.1 )

Volume	Invert	Avail.Storage	Storage Description
#1A	35.25'	935 cf	<b>30.00'W x 32.92'L x 3.50'H Field A</b> 3,457 cf Overall - 1,120 cf Embedded = 2,337 cf x 40.0% Voids
#2A	35.75'	1,120 cf	<b>ADS_StormTech SC-740 x 24 Inside #1</b> Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 6 rows
		2,054 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.25'	<b>Custom Weir/Orifice, Cv= 2.62 (C= 3.28)</b> Elev. (feet) 37.25 38.00 38.00 39.00 Width (feet) 1.00 1.00 4.00 4.00
#2	Discarded	35.25'	<b>8.270 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'

**Discarded OutFlow** Max=0.19 cfs @ 11.32 hrs HW=35.29' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=3.38 cfs @ 12.14 hrs HW=38.15' TW=0.00' (Dynamic Tailwater)

↑**1=Custom Weir/Orifice** (Weir Controls 3.38 cfs @ 2.49 fps)

## Summary for Pond PD: Prop. Onsite Depression

Inflow Area = 66,238 sf, 9.03% Impervious, Inflow Depth = 2.74" for 25-yr event

Inflow = 4.21 cfs @ 12.14 hrs, Volume= 15,111 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 70.76' @ 24.79 hrs Surf.Area= 8,898 sf Storage= 15,111 cf

Flood Elev= 72.00' Surf.Area= 12,365 sf Storage= 28,182 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	28,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,400	0	0	2,400
70.00	7,036	9,030	9,030	7,060
72.00	12,365	19,152	28,182	12,434

Device	Routing	Invert	Outlet Devices
#1	Primary	71.25'	<b>8.0" Round Culvert</b> L= 175.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.25' / 66.00' S= 0.0300 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=68.00' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** ( Controls 0.00 cfs)

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points x 3  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

<b>Subcatchment E1: Exist. To North CB</b>	Runoff Area=114,974 sf 7.29% Impervious Runoff Depth=3.61" Flow Length=568' Tc=14.2 min CN=74 Runoff=8.64 cfs 34,585 cf
<b>Subcatchment E2: Exist. To South CB</b>	Runoff Area=89,505 sf 11.68% Impervious Runoff Depth=3.92" Flow Length=254' Tc=9.3 min CN=77 Runoff=8.42 cfs 29,233 cf
<b>Subcatchment E3: Exist. To 10R Webster</b>	Runoff Area=6,692 sf 0.00% Impervious Runoff Depth=3.41" Tc=6.0 min CN=72 Runoff=0.61 cfs 1,900 cf
<b>Subcatchment E4: Exist. To Wetland E</b>	Runoff Area=99,439 sf 4.37% Impervious Runoff Depth=3.41" Flow Length=449' Tc=14.6 min CN=72 Runoff=6.96 cfs 28,231 cf
<b>Subcatchment E5a: Exist. To Onsite</b>	Runoff Area=91,650 sf 3.96% Impervious Runoff Depth=3.51" Flow Length=218' Tc=15.1 min CN=73 Runoff=6.53 cfs 26,791 cf
<b>Subcatchment E5b: Exist. Overland Flow</b>	Runoff Area=163,030 sf 0.56% Impervious Runoff Depth=3.21" Flow Length=433' Tc=10.9 min CN=70 Runoff=11.91 cfs 43,571 cf
<b>Subcatchment P1a: Prop. Rear of</b>	Runoff Area=2,983 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=0.44 cfs 1,556 cf
<b>Subcatchment P1b: Prop. Overland Flow</b>	Runoff Area=107,966 sf 7.76% Impervious Runoff Depth=3.61" Flow Length=460' Tc=12.6 min CN=74 Runoff=8.48 cfs 32,477 cf
<b>Subcatchment P2a: Prop. Overland to CB</b>	Runoff Area=33,649 sf 22.34% Impervious Runoff Depth=4.34" Flow Length=188' Tc=7.7 min CN=81 Runoff=3.68 cfs 12,175 cf
<b>Subcatchment P2b: Prop. TO CB1&amp;2</b>	Runoff Area=25,328 sf 21.34% Impervious Runoff Depth=3.92" Flow Length=258' Tc=9.3 min CN=77 Runoff=2.38 cfs 8,272 cf
<b>Subcatchment P2c: Prop. TO CB3&amp;4</b>	Runoff Area=22,957 sf 29.11% Impervious Runoff Depth=4.24" Flow Length=252' Tc=8.5 min CN=80 Runoff=2.39 cfs 8,102 cf
<b>Subcatchment P3: Prop.-To 10R Webster</b>	Runoff Area=6,170 sf 0.00% Impervious Runoff Depth=3.51" Tc=6.0 min CN=73 Runoff=0.58 cfs 1,804 cf
<b>Subcatchment P4a: Prop. To CB5&amp;6</b>	Runoff Area=18,035 sf 30.92% Impervious Runoff Depth=4.67" Flow Length=205' Tc=7.1 min CN=84 Runoff=2.14 cfs 7,013 cf
<b>Subcatchment P4b: Prop. Overland Flow</b>	Runoff Area=56,676 sf 0.00% Impervious Runoff Depth=3.51" Flow Length=444' Tc=13.7 min CN=73 Runoff=4.19 cfs 16,568 cf
<b>Subcatchment P4c: Prop. Rear of</b>	Runoff Area=1,788 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=0.26 cfs 933 cf
<b>Subcatchment P5a: Prop. Lot 9</b>	Runoff Area=8,086 sf 46.83% Impervious Runoff Depth=4.78" Flow Length=68' Slope=0.0100 '/' Tc=14.1 min CN=85 Runoff=0.79 cfs 3,218 cf

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<b>Subcatchment P5b: Prop. To Onsite</b>	Runoff Area=58,152 sf 3.78% Impervious Runoff Depth=3.51" Flow Length=152' Tc=9.1 min CN=73 Runoff=4.94 cfs 16,999 cf
<b>Subcatchment P5c: Prop. To CB9</b>	Runoff Area=19,536 sf 60.63% Impervious Runoff Depth=5.22" Flow Length=303' Tc=11.5 min CN=89 Runoff=2.20 cfs 8,500 cf
<b>Subcatchment P5d: Prop. To CB7&amp;8</b>	Runoff Area=47,033 sf 47.75% Impervious Runoff Depth=4.78" Tc=6.0 min CN=85 Runoff=5.90 cfs 18,719 cf
<b>Subcatchment P5e: Prop. Rear of</b>	Runoff Area=3,576 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=0.52 cfs 1,866 cf
<b>Subcatchment P5f: Prop. Overland Flow</b>	Runoff Area=52,398 sf 0.00% Impervious Runoff Depth=3.41" Flow Length=311' Tc=10.2 min CN=72 Runoff=4.17 cfs 14,876 cf
<b>Subcatchment P5g: Prop. Overland Flow</b>	Runoff Area=100,956 sf 0.00% Impervious Runoff Depth=3.31" Flow Length=309' Tc=10.0 min CN=71 Runoff=7.83 cfs 27,818 cf
<b>Reach E5: Exist. To Wetland A</b>	Inflow=11.91 cfs 43,571 cf Outflow=11.91 cfs 43,571 cf
<b>Reach P1: Prop. To North CB</b>	Inflow=8.48 cfs 33,154 cf Outflow=8.48 cfs 33,154 cf
<b>Reach P2: Prop. To South CB</b>	Inflow=8.15 cfs 20,024 cf Outflow=8.15 cfs 20,024 cf
<b>Reach P4: Prop. To Wetland E</b>	Inflow=5.95 cfs 24,074 cf Outflow=5.95 cfs 24,074 cf
<b>Reach P5: Prop. To Wetland A</b>	Inflow=11.51 cfs 65,834 cf Outflow=11.51 cfs 65,834 cf
<b>Pond DW1: Prop. Drywells</b>	Peak Elev=92.02' Storage=1,030 cf Inflow=0.44 cfs 1,556 cf Outflow=0.05 cfs 677 cf
<b>Pond DW2: Prop. Drywells</b>	Peak Elev=62.04' Storage=495 cf Inflow=0.26 cfs 933 cf Outflow=0.12 cfs 493 cf
<b>Pond DW3: Prop. Drywells</b>	Peak Elev=62.05' Storage=1,052 cf Inflow=0.52 cfs 1,866 cf Outflow=0.17 cfs 986 cf
<b>Pond ED: Exist. Onsite-Depression</b>	Peak Elev=71.44' Storage=26,791 cf Inflow=6.53 cfs 26,791 cf Outflow=0.00 cfs 0 cf
<b>Pond IB: Infiltration Basin</b>	Peak Elev=58.99' Storage=16,417 cf Inflow=11.70 cfs 43,081 cf Outflow=5.53 cfs 37,903 cf
<b>Pond IF: Infil. Field #1</b>	Peak Elev=38.25' Storage=1,859 cf Inflow=4.77 cfs 16,375 cf Discarded=0.19 cfs 8,526 cf Primary=4.55 cfs 7,849 cf Outflow=4.74 cfs 16,375 cf

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**Pond PD: Prop. Onsite Depression**

Peak Elev=71.30' Storage=20,201 cf Inflow=5.65 cfs 20,217 cf  
8.0" Round Culvert n=0.013 L=175.0' S=0.0300 '/ Outflow=0.01 cfs 112 cf

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**Summary for Subcatchment E1: Exist. To North CB**

Runoff = 8.64 cfs @ 12.20 hrs, Volume= 34,585 cf, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 11,010	86	Cart Path
95,584	70	Woods, Good, HSG C
114,974	74	Weighted Average
106,594		92.71% Pervious Area
8,380		7.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
4.3	468	0.1293	1.80		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
14.2	568	Total			

**Summary for Subcatchment E2: Exist. To South CB**

Runoff = 8.42 cfs @ 12.13 hrs, Volume= 29,233 cf, Depth= 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 3,511	98	Ledge
* 6,016	98	Buildings & Stairs
* 12,247	96	Gravel Driveways
* 925	98	Concrete Driveway Gutters
11,500	74	>75% Grass cover, Good, HSG C
55,306	70	Woods, Good, HSG C
89,505	77	Weighted Average
79,053		88.32% Pervious Area
10,452		11.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.2450	0.21		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	154	0.0860	2.05		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
9.3	254	Total			

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**Summary for Subcatchment E3: Exist. To 10R Webster**

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 1,900 cf, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
2,996	74	>75% Grass cover, Good, HSG C
3,696	70	Woods, Good, HSG C
6,692	72	Weighted Average
6,692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment E4: Exist. To Wetland E**

Runoff = 6.96 cfs @ 12.20 hrs, Volume= 28,231 cf, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 2,611	98	Buildings & Stairs
* 1,734	98	Tennis Court
* 1,500	96	Gravel Driveways
8,680	74	>75% Grass cover, Good, HSG C
84,914	70	Woods, Good, HSG C
99,439	72	Weighted Average
95,094		95.63% Pervious Area
4,345		4.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
5.8	349	0.0401	1.00		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
14.6	449	Total			

**Summary for Subcatchment E5a: Exist. To Onsite Depression**

Runoff = 6.53 cfs @ 12.20 hrs, Volume= 26,791 cf, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

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Area (sf)	CN	Description
* 2,196	98	Buildings & Stairs
* 1,430	98	Tennis Court
* 4,200	96	Gravel Driveways
* 3,480	86	Cart Path
5,150	74	>75% Grass cover, Good, HSG C
75,194	70	Woods, Good, HSG C
91,650	73	Weighted Average
88,024		96.04% Pervious Area
3,626		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0600	0.12		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	118	0.1610	2.01		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
15.1	218	Total			

**Summary for Subcatchment E5b: Exist. Overland Flow**

Runoff = 11.91 cfs @ 12.15 hrs, Volume= 43,571 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 918	98	Tennis Court
162,112	70	Woods, Good, HSG C
163,030	70	Weighted Average
162,112		99.44% Pervious Area
918		0.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.3000	0.23		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
3.5	333	0.1020	1.60		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
10.9	433	Total			

**Summary for Subcatchment P1a: Prop. Rear of Buildings 4&5**

Runoff = 0.44 cfs @ 12.08 hrs, Volume= 1,556 cf, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

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Area (sf)	CN	Description
* 2,983	98	Building Roof
2,983		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P1b: Prop. Overland Flow**

Runoff = 8.48 cfs @ 12.17 hrs, Volume= 32,477 cf, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 8,380	98	Ledge
* 5,286	86	Cart path
25,100	74	>75% Grass cover, Good, HSG C
69,200	70	Woods, Good, HSG C
107,966	74	Weighted Average
99,586		92.24% Pervious Area
8,380		7.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1450	0.17		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	75	0.1200	2.42		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b> Short Grass Pasture Kv= 7.0 fps
2.2	285	0.1800	2.12		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
12.6	460	Total			

**Summary for Subcatchment P2a: Prop. Overland to CB**

Runoff = 3.68 cfs @ 12.11 hrs, Volume= 12,175 cf, Depth= 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

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	Area (sf)	CN	Description
*	3,511	98	Ledge
*	4,005	98	Existing Buildings
*	4,268	96	Gravel Driveway
	9,565	74	>75% Grass cover, Good, HSG C
	12,300	70	Woods, Good, HSG C
	33,649	81	Weighted Average
	26,133		77.66% Pervious Area
	7,516		22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.3500	0.24		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	88	0.0625	1.75		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
7.7	188	Total			

**Summary for Subcatchment P2b: Prop. TO CB1&2**

Runoff = 2.38 cfs @ 12.13 hrs, Volume= 8,272 cf, Depth= 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

	Area (sf)	CN	Description
*	5,405	98	Pavement
	6,096	74	>75% Grass cover, Good, HSG C
	13,827	70	Woods, Good, HSG C
	25,328	77	Weighted Average
	19,923		78.66% Pervious Area
	5,405		21.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2200	2.35		<b>Shallow Concentrated Flow, Woods. - Conc. Flow</b> Woodland Kv= 5.0 fps
0.4	106	0.0425	4.18		<b>Shallow Concentrated Flow, Pavement- Conc. Flow</b> Paved Kv= 20.3 fps
9.3	258	Total			

**Summary for Subcatchment P2c: Prop. TO CB3&4**

Runoff = 2.39 cfs @ 12.12 hrs, Volume= 8,102 cf, Depth= 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

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	Area (sf)	CN	Description
*	1,439	98	Existing Building
*	5,243	98	Pavement
	8,422	74	>75% Grass cover, Good, HSG C
	7,853	70	Woods, Good, HSG C
	22,957	80	Weighted Average
	16,275		70.89% Pervious Area
	6,682		29.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	62	0.2340	0.19		<b>Sheet Flow, Woods-Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.4	38	0.1050	0.27		<b>Sheet Flow, Grass- Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.5	152	0.0660	5.22		<b>Shallow Concentrated Flow, Pavment- Conc. Flow</b> Paved Kv= 20.3 fps
8.5	252	Total			

**Summary for Subcatchment P3: Prop.-To 10R Webster**

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 1,804 cf, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
5,170	74	>75% Grass cover, Good, HSG C
1,000	70	Woods, Good, HSG C
6,170	73	Weighted Average
6,170		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P4a: Prop. To CB5&6**

Runoff = 2.14 cfs @ 12.10 hrs, Volume= 7,013 cf, Depth= 4.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

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Area (sf)	CN	Description
* 573	98	Existing Buildings
* 2,734	96	Gravel Driveway
* 5,003	98	Pavment
7,210	74	>75% Grass cover, Good, HSG C
2,515	70	Woods, Good, HSG C
18,035	84	Weighted Average
12,459		69.08% Pervious Area
5,576		30.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0550	0.25		<b>Sheet Flow, Grass/Gravel - Sheet Flow</b> Grass: Short n= 0.150 P2= 3.10"
0.4	55	0.1100	2.32		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.1	50	0.0800	5.74		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
7.1	205	Total			

**Summary for Subcatchment P4b: Prop. Overland Flow**

Runoff = 4.19 cfs @ 12.19 hrs, Volume= 16,568 cf, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 2,823	96	Rip Rap Slope
23,008	74	>75% Grass cover, Good, HSG C
30,845	70	Woods, Good, HSG C
56,676	73	Weighted Average
56,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1950	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	117	0.0340	0.92		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
2.0	187	0.0480	1.53		<b>Shallow Concentrated Flow, Grass - Conc. Flow</b> Short Grass Pasture Kv= 7.0 fps
0.8	40	0.0250	0.79		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
13.7	444	Total			

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**Summary for Subcatchment P4c: Prop. Rear of Buildings 11&12**

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 933 cf, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 1,788	98	Building Roof
1,788		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5a: Prop. Lot 9**

Runoff = 0.79 cfs @ 12.19 hrs, Volume= 3,218 cf, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 1,142	98	Building Roof
* 2,645	98	Driveway & Walkway
4,299	74	>75% Grass cover, Good, HSG C
8,086	85	Weighted Average
4,299		53.17% Pervious Area
3,787		46.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	68	0.0100	0.08		<b>Sheet Flow, Grass -Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"

**Summary for Subcatchment P5b: Prop. To Onsite Depression**

Runoff = 4.94 cfs @ 12.13 hrs, Volume= 16,999 cf, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

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Area (sf)	CN	Description
* 2,196	98	Buildings & Stairs
* 4,200	96	Gravel Driveways
3,067	74	>75% Grass cover, Good, HSG C
48,689	70	Woods, Good, HSG C
58,152	73	Weighted Average
55,956		96.22% Pervious Area
2,196		3.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.2000	0.19		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	52	0.2110	2.30		<b>Shallow Concentrated Flow, Woods - Conc.Flow</b> Woodland Kv= 5.0 fps
9.1	152	Total			

**Summary for Subcatchment P5c: Prop. To CB9**

Runoff = 2.20 cfs @ 12.15 hrs, Volume= 8,500 cf, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 3,897	98	Buildings
* 7,948	98	Pavement & Walkways
7,691	74	>75% Grass cover, Good, HSG C
19,536	89	Weighted Average
7,691		39.37% Pervious Area
11,845		60.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	70	0.0200	0.11		<b>Sheet Flow, Woods - Sheet Flow</b> Grass: Dense n= 0.240 P2= 3.10"
0.6	233	0.1000	6.42		<b>Shallow Concentrated Flow, Pavement - Conc. Flow</b> Paved Kv= 20.3 fps
11.5	303	Total			

**Summary for Subcatchment P5d: Prop. To CB7&8**

Runoff = 5.90 cfs @ 12.09 hrs, Volume= 18,719 cf, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

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	Area (sf)	CN	Description
*	8,568	98	Buildings
*	13,891	98	Pavement & Walkways
	23,141	74	>75% Grass cover, Good, HSG C
	1,433	70	Woods, Good, HSG C
	47,033	85	Weighted Average
	24,574		52.25% Pervious Area
	22,459		47.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5e: Prop. Rear of Buildings 7-10**

Runoff = 0.52 cfs @ 12.08 hrs, Volume= 1,866 cf, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

	Area (sf)	CN	Description
*	3,576	98	Building Roof
	3,576		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Min. 6 Minutes</b>

**Summary for Subcatchment P5f: Prop. Overland Flow**

Runoff = 4.17 cfs @ 12.14 hrs, Volume= 14,876 cf, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

	Area (sf)	CN	Description
	24,885	74	>75% Grass cover, Good, HSG C
	27,513	70	Woods, Good, HSG C
	52,398	72	Weighted Average
	52,398		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.2400	0.21		<b>Sheet Flow, Grass - Sheet Flow</b>
					Woods: Light underbrush n= 0.400 P2= 3.10"
2.1	211	0.0560	1.66		<b>Shallow Concentrated Flow, Grass - Conc.Flow</b>
					Short Grass Pasture Kv= 7.0 fps
10.2	311				<b>Total</b>

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**Summary for Subcatchment P5g: Prop. Overland Flow**

Runoff = 7.83 cfs @ 12.14 hrs, Volume= 27,818 cf, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-yr Rainfall=6.50"

Area (sf)	CN	Description
16,729	74	>75% Grass cover, Good, HSG C
84,227	70	Woods, Good, HSG C
100,956	71	Weighted Average
100,956		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.2100	0.20		<b>Sheet Flow, Woods - Sheet Flow</b> Woods: Light underbrush n= 0.400 P2= 3.10"
1.5	209	0.2060	2.27		<b>Shallow Concentrated Flow, Woods - Conc. Flow</b> Woodland Kv= 5.0 fps
10.0	309	Total			

**Summary for Reach E5: Exist. To Wetland A**

Inflow Area = 254,680 sf, 1.78% Impervious, Inflow Depth = 2.05" for 100-yr event  
 Inflow = 11.91 cfs @ 12.15 hrs, Volume= 43,571 cf  
 Outflow = 11.91 cfs @ 12.15 hrs, Volume= 43,571 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P1: Prop. To North CB**

Inflow Area = 110,949 sf, 10.24% Impervious, Inflow Depth = 3.59" for 100-yr event  
 Inflow = 8.48 cfs @ 12.17 hrs, Volume= 33,154 cf  
 Outflow = 8.48 cfs @ 12.17 hrs, Volume= 33,154 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

**Summary for Reach P2: Prop. To South CB**

Inflow Area = 81,934 sf, 23.93% Impervious, Inflow Depth = 2.93" for 100-yr event  
 Inflow = 8.15 cfs @ 12.12 hrs, Volume= 20,024 cf  
 Outflow = 8.15 cfs @ 12.12 hrs, Volume= 20,024 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

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## Summary for Reach P4: Prop. To Wetland E

Inflow Area = 76,499 sf, 9.63% Impervious, Inflow Depth = 3.78" for 100-yr event  
 Inflow = 5.95 cfs @ 12.16 hrs, Volume= 24,074 cf  
 Outflow = 5.95 cfs @ 12.16 hrs, Volume= 24,074 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Reach P5: Prop. To Wetland A

Inflow Area = 289,737 sf, 15.14% Impervious, Inflow Depth > 2.73" for 100-yr event  
 Inflow = 11.51 cfs @ 12.18 hrs, Volume= 65,834 cf  
 Outflow = 11.51 cfs @ 12.18 hrs, Volume= 65,834 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

## Summary for Pond DW1: Prop. Drywells

Inflow Area = 2,983 sf, 100.00% Impervious, Inflow Depth = 6.26" for 100-yr event  
 Inflow = 0.44 cfs @ 12.08 hrs, Volume= 1,556 cf  
 Outflow = 0.05 cfs @ 12.76 hrs, Volume= 677 cf, Atten= 89%, Lag= 40.9 min  
 Primary = 0.05 cfs @ 12.76 hrs, Volume= 677 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 92.02' @ 12.76 hrs Surf.Area= 15,925 sf Storage= 1,030 cf

Plug-Flow detention time= 345.9 min calculated for 677 cf (43% of inflow)

Center-of-Mass det. time= 197.3 min ( 941.2 - 744.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prisma</b> x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	88.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prisma</b> x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	90.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4
#4	92.00'	1,000 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4
		1,880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	2	0	0
92.05	10,000	250	250

Device	Routing	Invert	Outlet Devices
#1	Primary	92.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.05 cfs @ 12.76 hrs HW=92.02' TW=0.00' (Dynamic Tailwater)

↑**1=Orifice/Grate** (Weir Controls 0.05 cfs @ 0.46 fps)

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## Summary for Pond DW2: Prop. Drywells

Inflow Area = 1,788 sf, 100.00% Impervious, Inflow Depth = 6.26" for 100-yr event  
 Inflow = 0.26 cfs @ 12.08 hrs, Volume= 933 cf  
 Outflow = 0.12 cfs @ 12.24 hrs, Volume= 493 cf, Atten= 53%, Lag= 9.5 min  
 Primary = 0.12 cfs @ 12.24 hrs, Volume= 493 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 62.04' @ 12.24 hrs Surf.Area= 3,172 sf Storage= 495 cf

Plug-Flow detention time= 254.4 min calculated for 493 cf (53% of inflow)  
 Center-of-Mass det. time= 128.8 min ( 872.8 - 744.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	133 cf	<b>7.67'W x 12.50'L x 3.50'H Prismatic</b> x 2 671 cf Overall - 339 cf Embedded = 332 cf x 40.0% Voids
#2	58.00'	298 cf	<b>5.67'W x 10.50'L x 2.50'H Prismatic</b> x 2 Inside #1 339 cf Overall - 3.0" Wall Thickness = 298 cf
#3	60.50'	9 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 2
#4	62.00'	2,501 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 2
		2,940 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.12 cfs @ 12.24 hrs HW=62.04' TW=0.00' (Dynamic Tailwater)  
 ←1=Orifice/Grate (Weir Controls 0.12 cfs @ 0.63 fps)

## Summary for Pond DW3: Prop. Drywells

Inflow Area = 3,576 sf, 100.00% Impervious, Inflow Depth = 6.26" for 100-yr event  
 Inflow = 0.52 cfs @ 12.08 hrs, Volume= 1,866 cf  
 Outflow = 0.17 cfs @ 12.37 hrs, Volume= 986 cf, Atten= 67%, Lag= 17.0 min  
 Primary = 0.17 cfs @ 12.37 hrs, Volume= 986 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 62.05' @ 12.37 hrs Surf.Area= 384 sf Storage= 1,052 cf

Plug-Flow detention time= 261.1 min calculated for 986 cf (53% of inflow)  
 Center-of-Mass det. time= 135.5 min ( 879.5 - 744.0 )

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Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	265 cf	<b>7.67'W x 12.50'L x 3.50'H Prismaoid</b> x 4 1,342 cf Overall - 679 cf Embedded = 664 cf x 40.0% Voids
#2	58.00'	595 cf	<b>5.67'W x 10.50'L x 2.50'H Prismaoid</b> x 4 Inside #1 679 cf Overall - 3.0" Wall Thickness = 595 cf
#3	60.50'	19 cf	<b>2.00'D x 1.50'H Vertical Cone/Cylinder</b> x 4 -Impervious
#4	62.00'	5,001 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) x 4 -Impervious
		5,881 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	2	0	0
62.25	10,000	1,250	1,250

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	<b>20.0" Horiz. Orifice/Grate X 4.00</b> C= 0.600 in 20.0" Grate Limited to weir flow at low heads

**Primary OutFlow** Max=0.17 cfs @ 12.37 hrs HW=62.05' TW=58.99' (Dynamic Tailwater)

↑**1=Orifice/Grate** (Weir Controls 0.17 cfs @ 0.70 fps)

**Summary for Pond ED: Exist. Onsite-Depression**

Inflow Area = 91,650 sf, 3.96% Impervious, Inflow Depth = 3.51" for 100-yr event  
 Inflow = 6.53 cfs @ 12.20 hrs, Volume= 26,791 cf  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 71.44' @ 24.87 hrs Surf.Area= 13,696 sf Storage= 26,791 cf  
 Flood Elev= 72.00' Surf.Area= 16,000 sf Storage= 35,111 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	35,111 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,812	0	0	2,812
70.00	8,602	10,888	10,888	8,625
72.00	16,000	24,222	35,111	16,064

Device	Routing	Invert	Outlet Devices
#1	Primary	71.75'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

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**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=68.00' TW=0.00' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond IB: Infiltration Basin

Inflow Area = 122,543 sf, 30.91% Impervious, Inflow Depth = 4.22" for 100-yr event  
 Inflow = 11.70 cfs @ 12.11 hrs, Volume= 43,081 cf  
 Outflow = 5.53 cfs @ 12.37 hrs, Volume= 37,903 cf, Atten= 53%, Lag= 15.4 min  
 Primary = 5.53 cfs @ 12.37 hrs, Volume= 37,903 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 58.99' @ 12.37 hrs Surf.Area= 4,664 sf Storage= 16,417 cf

Plug-Flow detention time= 156.6 min calculated for 37,903 cf (88% of inflow)

Center-of-Mass det. time= 100.9 min ( 911.5 - 810.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	21,422 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	2,014	0	0
56.00	2,996	5,010	5,010
58.00	4,078	7,074	12,084
60.00	5,260	9,338	21,422

Device	Routing	Invert	Outlet Devices
#1	Primary	56.00'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	57.00'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#3	Primary	58.00'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600
#4	Primary	59.00'	<b>6.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b>
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64			
2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74			

**Primary OutFlow** Max=5.53 cfs @ 12.37 hrs HW=58.99' TW=0.00' (Dynamic Tailwater)

↑1=**Orifice/Grate** (Orifice Controls 0.71 cfs @ 8.09 fps)

↑2=**Orifice/Grate** (Orifice Controls 2.16 cfs @ 6.20 fps)

↑3=**Orifice/Grate** (Orifice Controls 2.66 cfs @ 3.39 fps)

↑4=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond IF: Infil. Field #1

Inflow Area = 48,285 sf, 25.03% Impervious, Inflow Depth = 4.07" for 100-yr event  
 Inflow = 4.77 cfs @ 12.12 hrs, Volume= 16,375 cf  
 Outflow = 4.74 cfs @ 12.13 hrs, Volume= 16,375 cf, Atten= 0%, Lag= 0.6 min  
 Discarded = 0.19 cfs @ 10.88 hrs, Volume= 8,526 cf  
 Primary = 4.55 cfs @ 12.13 hrs, Volume= 7,849 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.25' @ 12.13 hrs Surf.Area= 988 sf Storage= 1,859 cf

Flood Elev= 38.75' Surf.Area= 988 sf Storage= 2,054 cf

Plug-Flow detention time= 36.4 min calculated for 16,369 cf (100% of inflow)

Center-of-Mass det. time= 36.4 min ( 853.7 - 817.3 )

Volume	Invert	Avail.Storage	Storage Description
#1A	35.25'	935 cf	<b>30.00'W x 32.92'L x 3.50'H Field A</b> 3,457 cf Overall - 1,120 cf Embedded = 2,337 cf x 40.0% Voids
#2A	35.75'	1,120 cf	<b>ADS_StormTech SC-740 x 24 Inside #1</b> Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 6 rows
		2,054 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.25'	<b>Custom Weir/Orifice, Cv= 2.62 (C= 3.28)</b> Elev. (feet) 37.25 38.00 38.00 39.00 Width (feet) 1.00 1.00 4.00 4.00
#2	Discarded	35.25'	<b>8.270 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'

**Discarded OutFlow** Max=0.19 cfs @ 10.88 hrs HW=35.29' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=4.55 cfs @ 12.13 hrs HW=38.25' TW=0.00' (Dynamic Tailwater)

↑**1=Custom Weir/Orifice** (Weir Controls 4.55 cfs @ 2.58 fps)

## Summary for Pond PD: Prop. Onsite Depression

Inflow Area = 66,238 sf, 9.03% Impervious, Inflow Depth = 3.66" for 100-yr event

Inflow = 5.65 cfs @ 12.13 hrs, Volume= 20,217 cf

Outflow = 0.01 cfs @ 24.27 hrs, Volume= 112 cf, Atten= 100%, Lag= 727.9 min

Primary = 0.01 cfs @ 24.27 hrs, Volume= 112 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 71.30' @ 24.27 hrs Surf.Area= 10,317 sf Storage= 20,201 cf

Flood Elev= 72.00' Surf.Area= 12,365 sf Storage= 28,182 cf

Plug-Flow detention time= 1,105.6 min calculated for 112 cf (1% of inflow)

Center-of-Mass det. time= 763.2 min ( 1,589.6 - 826.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	28,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,400	0	0	2,400
70.00	7,036	9,030	9,030	7,060
72.00	12,365	19,152	28,182	12,434

Device	Routing	Invert	Outlet Devices
#1	Primary	71.25'	<b>8.0" Round Culvert</b> L= 175.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.25' / 66.00' S= 0.0300 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.01 cfs @ 24.27 hrs HW=71.30' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 0.01 cfs @ 0.57 fps)