STORMWATER MANAGEMENT ANALYSIS

CONCEPTUAL SITE DEVELOPMENT
ALLEN PROPERTY
SHREWSBURY MASSACHUSETTS

Prepared for:
TOWN OF SHREWSBURY
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OBJECTIVE OF CALCULATIONS

This calculation is an analysis of the site hydrology and stormwater runoff for the Existing Conditions Case and the Proposed Conditions Case. The objective of this analysis is to show that the net peak rate and volume of stormwater discharge from the site in the Proposed Conditions will be equal to or less than the discharge under the Existing Conditions for the two, ten, and one hundred year rainfall events. Accordingly, development of the site as it pertains to stormwater runoff will not adversely impact adjacent or downgradient properties.

CALCULATION METHODS AND ASSUMPTIONS

Stormwater runoff is analyzed using the following:

- "HydroCAD™ Stormwater Modeling System," by Applied Microcomputer Systems based upon SCS Technical Releases No. 55 and 20 for generating hydraulic calculations including peak flows and runoff volumes.

EQUATIONS AND SOURCES OF DATA USED

- 24 Hour Rainfall data- Technical Release No. 40.
  2 yr = 3.10 in. 10 yr = 4.50 in. 100 yr = 6.50 in
- Soils information from the Worcester County from the Natural Resources Conservation Service (NRCS) formally SCS. Soils within the project limits include Paxton, Ridgebury and Woodbridge fine sandy loams within the C hydraulic group and Whitman loam within the D hydraulic group in wetland areas.

POINT OF ANALYSIS

Runoff from the project site converges on the wetland in the center of the parcel and flows east toward the intersection of South Street and Route 20. For the purposes of this report, the analysis point will be the wetlands in the center of the site.

EXISTING CONDITION DESCRIPTION

The project area includes a total of 66.1± acres of land known as the Allen Property. The wetland areas in the center of the parcel bisect the buildable land into three sections, north, west and south.

North Area – Off South Street

The North Area (18.4 acres of upland) has about 640 feet of frontage off the west side of South Street. Except for the wetland area the eastern half of this area was previous cleared and utilized as farmland and is predominately an open meadow. The remaining portion is wooded. With the exception of a few knolls on the northwest boundary, the topography slopes (from elevation 542 to 506) to the south and east toward the wetland.

West Area

The West Area (9.7 acres of upland) does not front on a street and will require a wetland crossing and access through the North Area. This portion of the site abuts the Thomas Farm Circle and Joyce Circle residential developments. Current zoning requires maintaining a 200-foot buffer zone from these properties. This area is wooded and the topography slopes (from elevation 565 to 518) to the south and east in the direction of the wetland.

South Area – Off Route 20

The South Area (17.8 acres of upland) has about 340 feet of frontage off the north side of Route 20. The majority of this area was previously cleared and utilized as farmland and is predominately an open meadow. The topography slopes (from elevation 542 to 498) to the north and east toward the wetland.

PROPOSED CONDITION DESCRIPTION WITH MITIGATION

The Preferred Concept Plan is an aggressive maximum build alternative for this property. Stormwater runoff impacts will be significant and must be mitigated. The project be built to meet the new Stormwater Management Standards to control the peak flow and volume of runoff and water quality. There are a number of possible design options for the project as a whole or an individual site. Low impact development possibilities for this site are possible from green roofs to rain gardens however for this concept conventional systems are proposed.

Subsurface Roof Recharge Systems

For the Preferred Concept Plan each building will rout roof stormwater runoff to an onsite infiltration system. The systems shown are general in nature and conservative in a number of ways. They were sized to infiltrate the 10-year storm event. The soils for this project are sandy loams and it is anticipated that the groundwater elevations are high; therefore most systems are located in proposed fill sections. Systems shown are also shallow in section. It is anticipated that the design of individual systems could be smaller in size.

Subsurface Detention System

The Preferred Concept Plan currently shows subsurface detention systems due to topographic constraints for lot 8. Should the design of this site be reduced construction of a surface detention basin may be possible. Deep sump catchbasins and proprietary water quality structures will treat runoff prior to entering the systems. The outlet will be directed to the wetland.

Surface Detention System

For the Preferred Concept Plan each lot on the north and west portions of the site are shown to have their own individual detention basin. These basins are typically 4 to 5 feet deep and due to the anticipated high groundwater elevation these basins will be created with berms. Deep sump catchbasins and proprietary water quality

structures will treat runoff prior to entering the systems. The outlet will be directed to the wetland.

SUMMARY OF RESULTS – Peak Rate

Area	Year Event	Existing Condition	Proposed		
			No Mitigation	Roof Recharge	All Mitigation
North	2	11.73	39.21	33.49	11.51
18.41 ac	10	25.04	63.15	54.81	21.68
	100	46.5	97.48	86.86	45.14
West	2	6.79	11.54	9.93	5.24
9.65 ac	10	14.9	21.17	18.85	12.73
	100	28.06	35.76	32.85	27.5
South	2	11.92	37.41	27.54	11.91
17.81 ac	10	26.85	60.82	46.36	23.74
	100	51.34	94.62	76.91	50.56
Total	2	28.86	88.07	70.85	28.32
45.87 ac	10	63.46	144.96	119.81	57.67
	100	120.29	227.52	196.28	122.68

Flows are shown as cubic feet per second (cfs)

COMMENTS AND CONCLUSIONS

This preliminary analysis has demonstrated that there will be no measurable increase in peak rate of stormwater runoff or stormwater runoff volume due to the proposed project. The proposed stormwater management system has been designed in accordance with DEP's Stormwater Management Standards as follows:

1. ***No untreated stormwater (Standard Number 1):*** *No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*
   - All stormwater flows to new outfalls will be treated to remove 80% total suspended solids (See standard no. 4 below) prior to discharging to wetlands.

2. ***Post-development peak discharge rates (Standard Number 2):*** *Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.*
   - The concept plan utilizes roof runoff infiltration systems and extended detention basins to mitigate the peak rate of runoff from this development.

3. ***Recharge to groundwater (Standard Number 3):*** *Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to maximum extent practicable.*
   - The concept plan utilizes subsurface roof runoff infiltration systems, subsurface detention and extended detention basins to mitigate the peak rate of runoff from this development.

4. ***80% total suspended solids removal (Standard Number 4):*** *For new development, stormwater management systems must be designed to remove 80% of the annual load of Total Suspended Solids.*

- The concept plan utilizes deep sump catch basins, proprietary water quality structures, and extended detention basins (see typical TSS removal rate worksheet) to meet this standard.

5. ***Higher potential pollutant loads (Standard Number 5):*** *Stormwater discharges from Land Uses with Higher Potential Pollutant Loads require the use of specific stormwater management BMPs.*
   - The concept plan does not propose land uses with higher potential pollutant loads, however the BMPs included on the concept plan would meet this standard.

6. Critical areas (Standard Number 6): *Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas.*
   - This project does not have discharges to critical areas – not applicable.

7. ***Redevelopment (Standard Number 7):*** *Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable.*
   - This project does not fit the definition of a redevelopment project. The concept plan proposes to meet or exceed each standard.

8. ***Erosion and Sediment Controls (Standard Number 8):*** *Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.*
   - During the design phase of the project erosion and sediment controls will be incorporated to meet this standard.

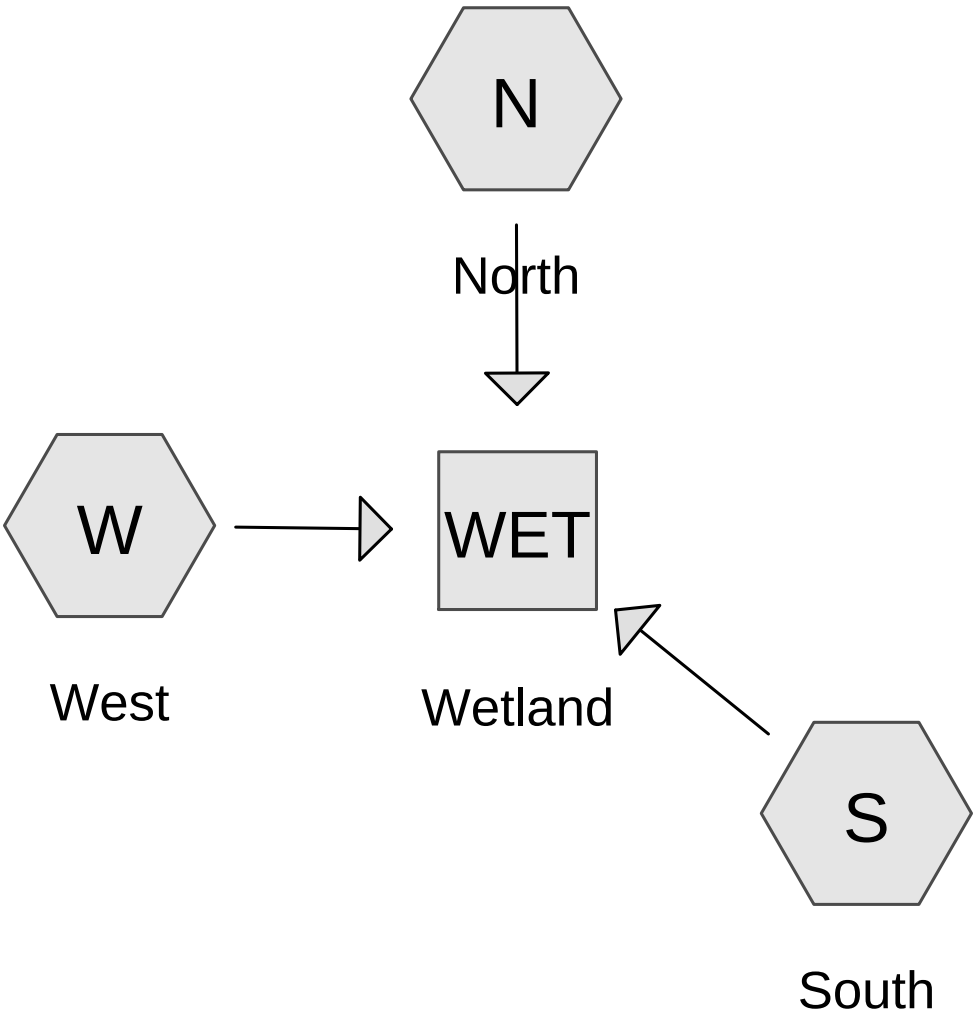
9. ***Operations/maintenance plan (Standard Number 9):*** *A long-Term Operation and Maintenance Plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

- During the design phase of the project operations and maintenance plan will be developed to meet this standard.

10. ***Illicit Discharges (Standard Number 10):*** *All illicit discharges to the stormwater management system are prohibited.*
    - During the design phase of the project an illicit discharge statement will be provided to meet this standard.

Although any site construction can impact local hydrology and water quality, the plans as presented incorporate many design features intended to mitigate adverse effects to downgradient wetlands and aquifers.

BACKUP CALCULATIONS
AND SUPPORTING DATA



Subcat Reach Pond Link

Drainage Diagram for Allen Property - Existing Condition
Prepared by BETA Group, Inc. 9/2/2008

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
18.180	71	Meadow, non-grazed, HSG C (N,S)
26.390	73	Woods, Fair, HSG C (N,S,W)
1.300	98	Paved parking & roofs (N)
45.870		

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

Subcatchment N: North Runoff Area=18.410 ac Runoff Depth>0.88"
Flow Length=650' Tc=26.5 min CN=74 Runoff=11.73 cfs 1.346 af

Subcatchment S: South Runoff Area=17.810 ac Runoff Depth>0.78"
Flow Length=651' Tc=16.6 min CN=72 Runoff=11.92 cfs 1.162 af

Subcatchment W: West Runoff Area=9.650 ac Runoff Depth>0.83"
Flow Length=450' Tc=17.6 min CN=73 Runoff=6.79 cfs 0.668 af

Reach WET: Wetland Inflow=28.86 cfs 3.176 af
Outflow=28.86 cfs 3.176 af

Total Runoff Area = 45.870 ac Runoff Volume = 3.176 af Average Runoff Depth = 0.83"
97.17% Pervious Area = 44.570 ac 2.83% Impervious Area = 1.300 ac

Subcatchment N: North

Runoff = 11.73 cfs @ 12.40 hrs, Volume= 1.346 af, Depth> 0.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.300	98	Paved parking & roofs
8.180	71	Meadow, non-grazed, HSG C
8.930	73	Woods, Fair, HSG C
18.410	74	Weighted Average
17.110		Pervious Area
1.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.1000	0.13		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	600	0.0100	0.50		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
26.5	650	Total			

Subcatchment S: South

Runoff = 11.92 cfs @ 12.26 hrs, Volume= 1.162 af, Depth> 0.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
7.810	73	Woods, Fair, HSG C
10.000	71	Meadow, non-grazed, HSG C
17.810	72	Weighted Average
17.810		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
0.6	57	0.0560	1.66		**Shallow Concentrated Flow, shallow concentrated flow (meadow** Short Grass Pasture Kv= 7.0 fps
0.3	21	0.0480	1.10		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
5.2	523	0.0570	1.67		**Shallow Concentrated Flow, shallow concentrated flow (meadow** Short Grass Pasture Kv= 7.0 fps
16.6	651	Total			

Subcatchment W: West

Runoff = 6.79 cfs @ 12.27 hrs, Volume= 0.668 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
9.650	73	Woods, Fair, HSG C
9.650		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
5.3	400	0.0640	1.26		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
17.6	450	Total			

Reach WET: Wetland

Inflow Area = 45.870 ac, Inflow Depth > 0.83" for 2 yr event
Inflow = 28.86 cfs @ 12.31 hrs, Volume= 3.176 af
Outflow = 28.86 cfs @ 12.31 hrs, Volume= 3.176 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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

Subcatchment N: North Runoff Area=18.410 ac Runoff Depth>1.81"
Flow Length=650' Tc=26.5 min CN=74 Runoff=25.04 cfs 2.773 af

Subcatchment S: South Runoff Area=17.810 ac Runoff Depth>1.67"
Flow Length=651' Tc=16.6 min CN=72 Runoff=26.85 cfs 2.477 af

Subcatchment W: West Runoff Area=9.650 ac Runoff Depth>1.74"
Flow Length=450' Tc=17.6 min CN=73 Runoff=14.90 cfs 1.399 af

Reach WET: Wetland Inflow=63.46 cfs 6.649 af
Outflow=63.46 cfs 6.649 af

Total Runoff Area = 45.870 ac Runoff Volume = 6.649 af Average Runoff Depth = 1.74"
97.17% Pervious Area = 44.570 ac 2.83% Impervious Area = 1.300 ac

Subcatchment N: North

Runoff = 25.04 cfs @ 12.38 hrs, Volume= 2.773 af, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.50"

Area (ac)	CN	Description
1.300	98	Paved parking & roofs
8.180	71	Meadow, non-grazed, HSG C
8.930	73	Woods, Fair, HSG C
18.410	74	Weighted Average
17.110		Pervious Area
1.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.1000	0.13		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	600	0.0100	0.50		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
26.5	650	Total			

Subcatchment S: South

Runoff = 26.85 cfs @ 12.24 hrs, Volume= 2.477 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.50"

Area (ac)	CN	Description
7.810	73	Woods, Fair, HSG C
10.000	71	Meadow, non-grazed, HSG C
17.810	72	Weighted Average
17.810		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
0.6	57	0.0560	1.66		**Shallow Concentrated Flow, shallow concentrated flow (meadow** Short Grass Pasture Kv= 7.0 fps
0.3	21	0.0480	1.10		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
5.2	523	0.0570	1.67		**Shallow Concentrated Flow, shallow concentrated flow (meadow** Short Grass Pasture Kv= 7.0 fps
16.6	651	Total			

Subcatchment W: West

Runoff = 14.90 cfs @ 12.25 hrs, Volume= 1.399 af, Depth> 1.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.50"

Area (ac)	CN	Description
9.650	73	Woods, Fair, HSG C
9.650		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
5.3	400	0.0640	1.26		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
17.6	450	Total			

Reach WET: Wetland

Inflow Area = 45.870 ac, Inflow Depth > 1.74" for 10 yr event
Inflow = 63.46 cfs @ 12.28 hrs, Volume= 6.649 af
Outflow = 63.46 cfs @ 12.28 hrs, Volume= 6.649 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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

Subcatchment N: North Runoff Area=18.410 ac Runoff Depth>3.34"
Flow Length=650' Tc=26.5 min CN=74 Runoff=46.50 cfs 5.128 af

Subcatchment S: South Runoff Area=17.810 ac Runoff Depth>3.16"
Flow Length=651' Tc=16.6 min CN=72 Runoff=51.34 cfs 4.687 af

Subcatchment W: West Runoff Area=9.650 ac Runoff Depth>3.25"
Flow Length=450' Tc=17.6 min CN=73 Runoff=28.06 cfs 2.617 af

Reach WET: Wetland Inflow=120.29 cfs 12.433 af
Outflow=120.29 cfs 12.433 af

Total Runoff Area = 45.870 ac Runoff Volume = 12.433 af Average Runoff Depth = 3.25"
97.17% Pervious Area = 44.570 ac 2.83% Impervious Area = 1.300 ac

Subcatchment N: North

Runoff = 46.50 cfs @ 12.37 hrs, Volume= 5.128 af, Depth> 3.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=6.50"

Area (ac)	CN	Description
1.300	98	Paved parking & roofs
8.180	71	Meadow, non-grazed, HSG C
8.930	73	Woods, Fair, HSG C
18.410	74	Weighted Average
17.110		Pervious Area
1.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.1000	0.13		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	600	0.0100	0.50		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
26.5	650	Total			

Subcatchment S: South

Runoff = 51.34 cfs @ 12.23 hrs, Volume= 4.687 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=6.50"

Area (ac)	CN	Description
7.810	73	Woods, Fair, HSG C
10.000	71	Meadow, non-grazed, HSG C
17.810	72	Weighted Average
17.810		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
0.6	57	0.0560	1.66		**Shallow Concentrated Flow, shallow concentrated flow (meadow** Short Grass Pasture Kv= 7.0 fps
0.3	21	0.0480	1.10		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
5.2	523	0.0570	1.67		**Shallow Concentrated Flow, shallow concentrated flow (meadow** Short Grass Pasture Kv= 7.0 fps
16.6	651	Total			

Subcatchment W: West

Runoff = 28.06 cfs @ 12.25 hrs, Volume= 2.617 af, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=6.50"

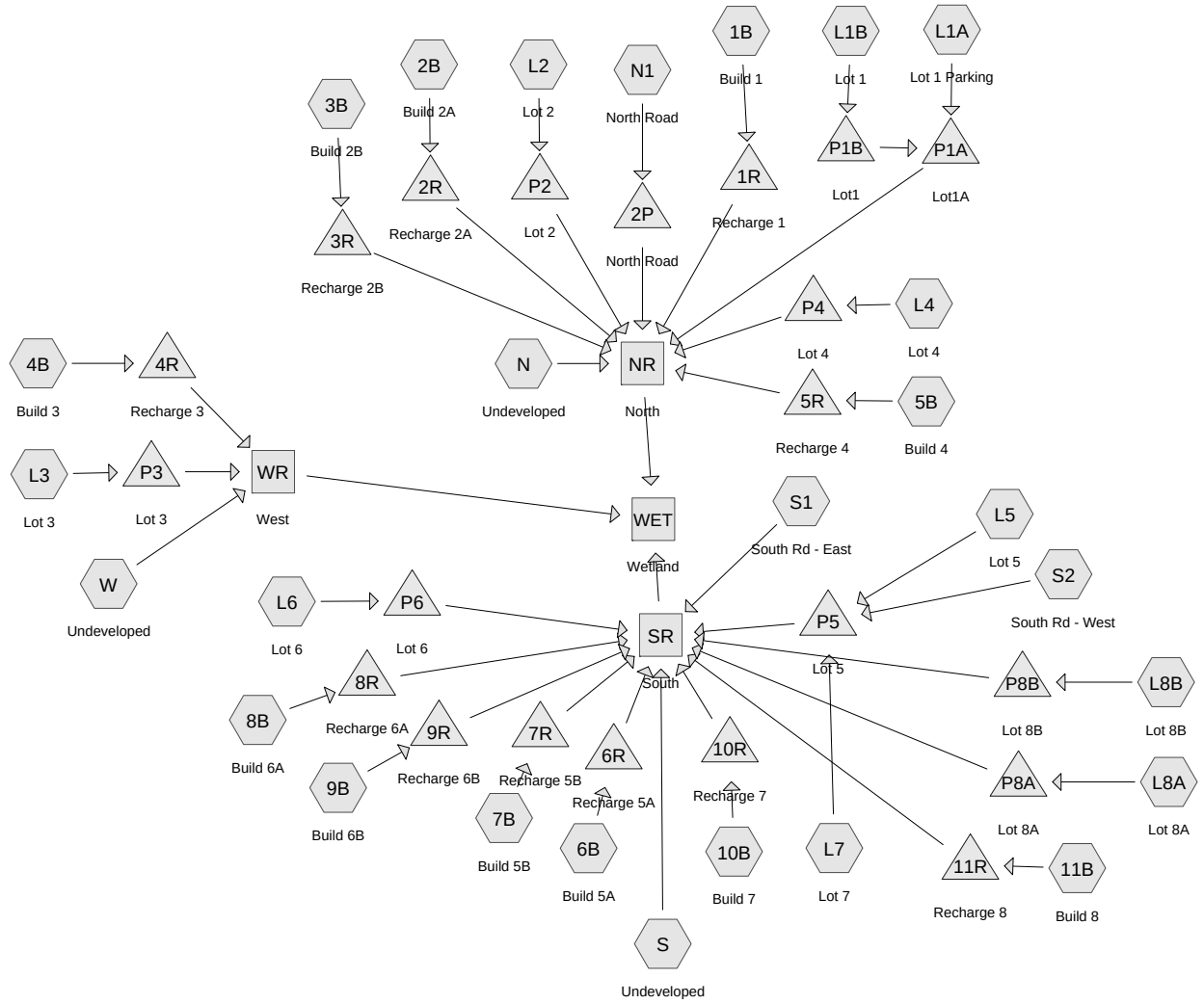
Area (ac)	CN	Description
9.650	73	Woods, Fair, HSG C
9.650		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.20"
5.3	400	0.0640	1.26		**Shallow Concentrated Flow, shallow concentrated flow (woods)** Woodland Kv= 5.0 fps
17.6	450	Total			

Reach WET: Wetland

Inflow Area = 45.870 ac, Inflow Depth > 3.25" for 100 yr event
Inflow = 120.29 cfs @ 12.27 hrs, Volume= 12.433 af
Outflow = 120.29 cfs @ 12.27 hrs, Volume= 12.433 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Drainage Diagram for Allen Property - Prop With All Mittigation

Prepared by BETA Group, Inc. 9/2/2008

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
11.560	73	Woods, Fair, HSG C (L3,N,S,W)
10.213	74	>75% Grass cover, Good, HSG C (L1A,L1B,L2,L3,L4,L5,L6,L7,L8A,L8B,N,N1,S,S1,S2,W)
18.513	98	Paved parking & roofs (L1A,L1B,L2,L3,L4,L5,L6,L7,L8A,L8B,N1,S1,S2)
5.584	98	Roof (1B,2B,3B,4B,5B,6B,7B,8B,9B,10B,11B)
45.870		

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

Subcatchment 1B: Build 1 Runoff Area=21,250 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.43 cfs 0.109 af

Subcatchment 2B: Build 2A Runoff Area=25,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.69 cfs 0.128 af

Subcatchment 3B: Build 2B Runoff Area=25,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.69 cfs 0.128 af

Subcatchment 4B: Build 3 Runoff Area=20,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.35 cfs 0.103 af

Subcatchment 5B: Build 4 Runoff Area=10,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=0.67 cfs 0.051 af

Subcatchment 6B: Build 5A Runoff Area=22,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.48 cfs 0.113 af

Subcatchment 7B: Build 5B Runoff Area=22,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.48 cfs 0.113 af

Subcatchment 8B: Build 6A Runoff Area=24,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.62 cfs 0.123 af

Subcatchment 9B: Build 6B Runoff Area=24,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.62 cfs 0.123 af

Subcatchment 10B: Build 7 Runoff Area=20,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.35 cfs 0.103 af

Subcatchment 11B: Build 8 Runoff Area=30,000 sf Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=2.02 cfs 0.154 af

Subcatchment L1A: Lot 1 Parking Runoff Area=1.743 ac Runoff Depth>2.22"
Tc=6.0 min CN=93 Runoff=4.55 cfs 0.322 af

Subcatchment L1B: Lot 1 Runoff Area=2.829 ac Runoff Depth>2.13"
Tc=6.0 min CN=92 Runoff=7.16 cfs 0.501 af

Subcatchment L2: Lot 2 Runoff Area=5.369 ac Runoff Depth>2.13"
Tc=6.0 min CN=92 Runoff=13.59 cfs 0.952 af

Subcatchment L3: Lot 3 Runoff Area=4.210 ac Runoff Depth>1.49"
Tc=6.0 min CN=84 Runoff=7.73 cfs 0.522 af

Subcatchment L4: Lot 4 Runoff Area=1.940 ac Runoff Depth>1.79"
Tc=6.0 min CN=88 Runoff=4.24 cfs 0.289 af

Subcatchment L5: Lot 5 Runoff Area=2.760 ac Runoff Depth>1.79"
Tc=6.0 min CN=88 Runoff=6.03 cfs 0.411 af

Subcatchment L6: Lot 6 Runoff Area=2.990 ac Runoff Depth>1.79"
Tc=6.0 min CN=88 Runoff=6.53 cfs 0.445 af

Subcatchment L7: Lot 7 Runoff Area=1.828 ac Runoff Depth>1.87"
Tc=6.0 min CN=89 Runoff=4.15 cfs 0.284 af

Subcatchment L8A: Lot 8A Runoff Area=0.930 ac Runoff Depth>1.87"
Tc=6.0 min CN=89 Runoff=2.11 cfs 0.145 af

Subcatchment L8B: Lot 8B Runoff Area=0.929 ac Runoff Depth>1.87"
Tc=6.0 min CN=89 Runoff=2.11 cfs 0.145 af

Subcatchment N: Undeveloped Runoff Area=3.184 ac Runoff Depth>0.83"
Flow Length=50' Slope=0.0150 '/' Tc=13.8 min CN=73 Runoff=2.46 cfs 0.221 af

Subcatchment N1: North Road Runoff Area=1.480 ac Runoff Depth>2.22"
Tc=6.0 min CN=93 Runoff=3.87 cfs 0.274 af

Subcatchment S: Undeveloped Runoff Area=3.500 ac Runoff Depth>0.83"
Flow Length=50' Slope=0.0300 '/' Tc=10.5 min CN=73 Runoff=2.98 cfs 0.243 af

Subcatchment S1: South Rd - East Runoff Area=0.826 ac Runoff Depth>2.04"
Tc=6.0 min CN=91 Runoff=2.02 cfs 0.140 af

Subcatchment S2: South Rd - West Runoff Area=0.787 ac Runoff Depth>2.13"
Tc=6.0 min CN=92 Runoff=1.99 cfs 0.140 af

Subcatchment W: Undeveloped Runoff Area=4.981 ac Runoff Depth>0.83"
Flow Length=350' Tc=16.1 min CN=73 Runoff=3.62 cfs 0.345 af

Reach NR: North Inflow=11.51 cfs 2.405 af
Outflow=11.51 cfs 2.405 af

Reach SR: South Inflow=11.91 cfs 1.856 af
Outflow=11.91 cfs 1.856 af

Reach WET: Wetland Inflow=28.32 cfs 5.086 af
Outflow=28.32 cfs 5.086 af

Reach WR: West Inflow=5.24 cfs 0.826 af
Outflow=5.24 cfs 0.826 af

Pond 1R: Recharge 1 Peak Elev=1.81' Storage=3,401 cf Inflow=1.43 cfs 0.109 af
Discarded=0.03 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.032 af

Pond 2P: North Road Peak Elev=212.56' Storage=3,797 cf Inflow=3.87 cfs 0.274 af
Discarded=0.02 cfs 0.014 af Primary=1.08 cfs 0.253 af Outflow=1.10 cfs 0.268 af

Pond 2R: Recharge 2A Peak Elev=1.86' Storage=4,024 cf Inflow=1.69 cfs 0.128 af
Discarded=0.03 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.037 af

Pond 3R: Recharge 2B Peak Elev=1.86' Storage=4,024 cf Inflow=1.69 cfs 0.128 af
Discarded=0.03 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.037 af

Pond 4R: Recharge 3 Peak Elev=1.74' Storage=3,173 cf Inflow=1.35 cfs 0.103 af
Discarded=0.03 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.031 af

Pond 5R: Recharge 4 Peak Elev=1.82' Storage=1,604 cf Inflow=0.67 cfs 0.051 af
Discarded=0.01 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.015 af

Pond 6R: Recharge 5A Peak Elev=1.87' Storage=3,545 cf Inflow=1.48 cfs 0.113 af
Discarded=0.03 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.032 af

Pond 7R: Recharge 5B Peak Elev=1.87' Storage=3,545 cf Inflow=1.48 cfs 0.113 af
Discarded=0.03 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.032 af

Pond 8R: Recharge 6A Peak Elev=1.86' Storage=3,864 cf Inflow=1.62 cfs 0.123 af
Discarded=0.03 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.035 af

Pond 9R: Recharge 6B Peak Elev=1.86' Storage=3,864 cf Inflow=1.62 cfs 0.123 af
Discarded=0.03 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.035 af

Pond 10R: Recharge 7 Peak Elev=1.74' Storage=3,173 cf Inflow=1.35 cfs 0.103 af
Discarded=0.03 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.031 af

Pond 11R: Recharge 8 Peak Elev=1.85' Storage=4,822 cf Inflow=2.02 cfs 0.154 af
Discarded=0.04 cfs 0.045 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.045 af

Pond P1A: Lot1A Peak Elev=522.33' Storage=5,840 cf Inflow=5.68 cfs 0.797 af
Discarded=0.02 cfs 0.015 af Primary=2.78 cfs 0.773 af Outflow=2.81 cfs 0.788 af

Pond P1B: Lot1 Peak Elev=523.36' Storage=7,936 cf Inflow=7.16 cfs 0.501 af
Discarded=0.03 cfs 0.018 af Primary=1.54 cfs 0.475 af Outflow=1.57 cfs 0.493 af

Pond P2: Lot 2 Peak Elev=523.50' Storage=15,595 cf Inflow=13.59 cfs 0.952 af
Discarded=0.04 cfs 0.026 af Primary=3.12 cfs 0.888 af Outflow=3.16 cfs 0.914 af

Pond P3: Lot 3 Peak Elev=527.00' Storage=8,643 cf Inflow=7.73 cfs 0.522 af
Discarded=0.03 cfs 0.022 af Primary=1.95 cfs 0.481 af Outflow=1.98 cfs 0.503 af

Pond P4: Lot 4 Peak Elev=505.78' Storage=2,550 cf Inflow=4.24 cfs 0.289 af
Discarded=0.01 cfs 0.008 af Primary=2.96 cfs 0.270 af Outflow=2.97 cfs 0.278 af

Pond P5: Lot 5 Peak Elev=509.06' Storage=11,935 cf Inflow=12.17 cfs 0.835 af
Discarded=0.04 cfs 0.032 af Primary=3.54 cfs 0.780 af Outflow=3.59 cfs 0.812 af

Pond P6: Lot 6 Peak Elev=529.61' Storage=4,749 cf Inflow=6.53 cfs 0.445 af
Discarded=0.02 cfs 0.017 af Primary=3.42 cfs 0.417 af Outflow=3.44 cfs 0.434 af

Pond P8A: Lot 8A Peak Elev=503.35' Storage=1,685 cf Inflow=2.11 cfs 0.145 af
Discarded=0.01 cfs 0.006 af Primary=0.62 cfs 0.138 af Outflow=0.63 cfs 0.144 af

Pond P8B: Lot 8B Peak Elev=503.35' Storage=1,682 cf Inflow=2.11 cfs 0.145 af
Discarded=0.01 cfs 0.006 af Primary=0.62 cfs 0.138 af Outflow=0.63 cfs 0.144 af

Total Runoff Area = 45.870 ac Runoff Volume = 6.626 af Average Runoff Depth = 1.73"
47.47% Pervious Area = 21.773 ac 52.53% Impervious Area = 24.097 ac

Subcatchment 1B: Build 1

Runoff = 1.43 cfs @ 12.09 hrs, Volume= 0.109 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
21,250	98	Roof
21,250		Impervious Area

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

Subcatchment 2B: Build 2A

Runoff = 1.69 cfs @ 12.09 hrs, Volume= 0.128 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
25,000	98	Roof
25,000		Impervious Area

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

Subcatchment 3B: Build 2B

Runoff = 1.69 cfs @ 12.09 hrs, Volume= 0.128 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
25,000	98	Roof
25,000		Impervious Area

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

Subcatchment 4B: Build 3

Runoff = 1.35 cfs @ 12.09 hrs, Volume= 0.103 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
20,000	98	Roof
20,000		Impervious Area

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

Subcatchment 5B: Build 4

Runoff = 0.67 cfs @ 12.09 hrs, Volume= 0.051 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
10,000	98	Roof
10,000		Impervious Area

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

Subcatchment 6B: Build 5A

Runoff = 1.48 cfs @ 12.09 hrs, Volume= 0.113 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
22,000	98	Roof
22,000		Impervious Area

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

Subcatchment 7B: Build 5B

Runoff = 1.48 cfs @ 12.09 hrs, Volume= 0.113 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
22,000	98	Roof
22,000		Impervious Area

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

Subcatchment 8B: Build 6A

Runoff = 1.62 cfs @ 12.09 hrs, Volume= 0.123 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
24,000	98	Roof
24,000		Impervious Area

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

Subcatchment 9B: Build 6B

Runoff = 1.62 cfs @ 12.09 hrs, Volume= 0.123 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
24,000	98	Roof
24,000		Impervious Area

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

Subcatchment 10B: Build 7

Runoff = 1.35 cfs @ 12.09 hrs, Volume= 0.103 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
20,000	98	Roof
20,000		Impervious Area

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

Subcatchment 11B: Build 8

Runoff = 2.02 cfs @ 12.09 hrs, Volume= 0.154 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (sf)	CN	Description
30,000	98	Roof
30,000		Impervious Area

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

Subcatchment L1A: Lot 1 Parking

Runoff = 4.55 cfs @ 12.09 hrs, Volume= 0.322 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.414	98	Paved parking & roofs
0.329	74	>75% Grass cover, Good, HSG C
1.743	93	Weighted Average
0.329		Pervious Area
1.414		Impervious Area

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

Subcatchment L1B: Lot 1

Runoff = 7.16 cfs @ 12.09 hrs, Volume= 0.501 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
2.101	98	Paved parking & roofs
0.728	74	>75% Grass cover, Good, HSG C
2.829	92	Weighted Average
0.728		Pervious Area
2.101		Impervious Area

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

Subcatchment L2: Lot 2

Runoff = 13.59 cfs @ 12.09 hrs, Volume= 0.952 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
3.978	98	Paved parking & roofs
1.391	74	>75% Grass cover, Good, HSG C
5.369	92	Weighted Average
1.391		Pervious Area
3.978		Impervious Area

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

Subcatchment L3: Lot 3

Runoff = 7.73 cfs @ 12.09 hrs, Volume= 0.522 af, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.200	73	Woods, Fair, HSG C
1.880	98	Paved parking & roofs
1.130	74	>75% Grass cover, Good, HSG C
4.210	84	Weighted Average
2.330		Pervious Area
1.880		Impervious Area

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

Subcatchment L4: Lot 4

Runoff = 4.24 cfs @ 12.09 hrs, Volume= 0.289 af, Depth> 1.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.160	98	Paved parking & roofs
0.780	74	>75% Grass cover, Good, HSG C
1.940	88	Weighted Average
0.780		Pervious Area
1.160		Impervious Area

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

Subcatchment L5: Lot 5

Runoff = 6.03 cfs @ 12.09 hrs, Volume= 0.411 af, Depth> 1.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.583	98	Paved parking & roofs
1.177	74	>75% Grass cover, Good, HSG C
2.760	88	Weighted Average
1.177		Pervious Area
1.583		Impervious Area

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

Subcatchment L6: Lot 6

Runoff = 6.53 cfs @ 12.09 hrs, Volume= 0.445 af, Depth> 1.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.736	98	Paved parking & roofs
1.254	74	>75% Grass cover, Good, HSG C
2.990	88	Weighted Average
1.254		Pervious Area
1.736		Impervious Area

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

Subcatchment L7: Lot 7

Runoff = 4.15 cfs @ 12.09 hrs, Volume= 0.284 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.130	98	Paved parking & roofs
0.698	74	>75% Grass cover, Good, HSG C
1.828	89	Weighted Average
0.698		Pervious Area
1.130		Impervious Area

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

Subcatchment L8A: Lot 8A

Runoff = 2.11 cfs @ 12.09 hrs, Volume= 0.145 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
0.599	98	Paved parking & roofs
0.331	74	>75% Grass cover, Good, HSG C
0.930	89	Weighted Average
0.331		Pervious Area
0.599		Impervious Area

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

Subcatchment L8B: Lot 8B

Runoff = 2.11 cfs @ 12.09 hrs, Volume= 0.145 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
0.598	98	Paved parking & roofs
0.331	74	>75% Grass cover, Good, HSG C
0.929	89	Weighted Average
0.331		Pervious Area
0.598		Impervious Area

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

Subcatchment N: Undeveloped

Runoff = 2.46 cfs @ 12.21 hrs, Volume= 0.221 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
2.990	73	Woods, Fair, HSG C
0.194	74	>75% Grass cover, Good, HSG C
3.184	73	Weighted Average
3.184		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0150	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"

Subcatchment N1: North Road

Runoff = 3.87 cfs @ 12.09 hrs, Volume= 0.274 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
1.150	98	Paved parking & roofs
0.330	74	>75% Grass cover, Good, HSG C
1.480	93	Weighted Average
0.330		Pervious Area
1.150		Impervious Area

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

Subcatchment S: Undeveloped

Runoff = 2.98 cfs @ 12.16 hrs, Volume= 0.243 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
2.670	73	Woods, Fair, HSG C
0.830	74	>75% Grass cover, Good, HSG C
3.500	73	Weighted Average
3.500		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"

Subcatchment S1: South Rd - East

Runoff = 2.02 cfs @ 12.09 hrs, Volume= 0.140 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
0.599	98	Paved parking & roofs
0.227	74	>75% Grass cover, Good, HSG C
0.826	91	Weighted Average
0.227		Pervious Area
0.599		Impervious Area

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

Subcatchment S2: South Rd - West

Runoff = 1.99 cfs @ 12.09 hrs, Volume= 0.140 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
0.585	98	Paved parking & roofs
0.202	74	>75% Grass cover, Good, HSG C
0.787	92	Weighted Average
0.202		Pervious Area
0.585		Impervious Area

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

Subcatchment W: Undeveloped

Runoff = 3.62 cfs @ 12.25 hrs, Volume= 0.345 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.10"

Area (ac)	CN	Description
4.700	73	Woods, Fair, HSG C
0.281	74	>75% Grass cover, Good, HSG C
4.981	73	Weighted Average
4.981		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
3.8	300	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	350	Total			

Reach NR: North

Inflow Area = 18.410 ac, Inflow Depth > 1.57" for 2 yr event
Inflow = 11.51 cfs @ 12.23 hrs, Volume= 2.405 af
Outflow = 11.51 cfs @ 12.23 hrs, Volume= 2.405 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SR: South

Inflow Area = 17.810 ac, Inflow Depth > 1.25" for 2 yr event
Inflow = 11.91 cfs @ 12.17 hrs, Volume= 1.856 af
Outflow = 11.91 cfs @ 12.17 hrs, Volume= 1.856 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach WET: Wetland

Inflow Area = 45.870 ac, Inflow Depth > 1.33" for 2 yr event
Inflow = 28.32 cfs @ 12.22 hrs, Volume= 5.086 af
Outflow = 28.32 cfs @ 12.22 hrs, Volume= 5.086 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach WR: West

Inflow Area = 9.650 ac, Inflow Depth > 1.03" for 2 yr event
Inflow = 5.24 cfs @ 12.27 hrs, Volume= 0.826 af
Outflow = 5.24 cfs @ 12.27 hrs, Volume= 0.826 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 1R: Recharge 1

Inflow Area = 0.488 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.43 cfs @ 12.09 hrs, Volume= 0.109 af
Outflow = 0.03 cfs @ 8.05 hrs, Volume= 0.032 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 8.05 hrs, Volume= 0.032 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.81' @ 17.59 hrs Surf.Area= 4,500 sf Storage= 3,401 cf

Plug-Flow detention time= 193.7 min calculated for 0.032 af (29% of inflow)
Center-of-Mass det. time= 47.6 min (786.5 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,098 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	4,500	41.8	0	0
2.71	4,500	41.8	5,098	5,098

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	2.10'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0120 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 8.05 hrs HW=0.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond 2P: North Road

Inflow Area = 1.480 ac, Inflow Depth > 2.22" for 2 yr event
Inflow = 3.87 cfs @ 12.09 hrs, Volume= 0.274 af
Outflow = 1.10 cfs @ 12.44 hrs, Volume= 0.268 af, Atten= 72%, Lag= 20.8 min
Discarded = 0.02 cfs @ 12.44 hrs, Volume= 0.014 af
Primary = 1.08 cfs @ 12.44 hrs, Volume= 0.253 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 212.56' @ 12.44 hrs Surf.Area= 2,939 sf Storage= 3,797 cf

Plug-Flow detention time= 48.1 min calculated for 0.267 af (98% of inflow)
Center-of-Mass det. time= 39.3 min (802.6 - 763.3)

Volume	Invert	Avail.Storage	Storage Description
#1	211.00'	23,550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
211.00	1,940	0	0
216.00	5,150	17,725	17,725
217.00	6,500	5,825	23,550

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	211.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	214.00'	**20.0 deg x 4.00' rise Sharp-Crested Vee/Trap Weir** C= 2.69

Discarded OutFlow Max=0.02 cfs @ 12.44 hrs HW=212.56' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.08 cfs @ 12.44 hrs HW=212.56' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 1.08 cfs @ 5.50 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 2R: Recharge 2A

Inflow Area = 0.574 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.69 cfs @ 12.09 hrs, Volume= 0.128 af
Outflow = 0.03 cfs @ 7.95 hrs, Volume= 0.037 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 7.95 hrs, Volume= 0.037 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.86' @ 17.67 hrs Surf.Area= 5,175 sf Storage= 4,024 cf

Plug-Flow detention time= 194.0 min calculated for 0.037 af (29% of inflow)
Center-of-Mass det. time= 45.9 min (784.8 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	6,057 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	5,175	41.8	0	0
2.80	5,175	41.8	6,057	6,057

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	1.95'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0060 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 7.95 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond 3R: Recharge 2B

Inflow Area = 0.574 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.69 cfs @ 12.09 hrs, Volume= 0.128 af
Outflow = 0.03 cfs @ 7.95 hrs, Volume= 0.037 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 7.95 hrs, Volume= 0.037 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.86' @ 17.67 hrs Surf.Area= 5,175 sf Storage= 4,024 cf

Plug-Flow detention time= 194.0 min calculated for 0.037 af (29% of inflow)
Center-of-Mass det. time= 45.9 min (784.8 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	6,057 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	5,175	41.8	0	0
2.80	5,175	41.8	6,057	6,057

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	1.95'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0060 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 7.95 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond 4R: Recharge 3

Inflow Area = 0.459 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.103 af
Outflow = 0.03 cfs @ 8.10 hrs, Volume= 0.031 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 8.10 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.74' @ 17.48 hrs Surf.Area= 4,360 sf Storage= 3,173 cf

Plug-Flow detention time= 191.6 min calculated for 0.031 af (30% of inflow)
Center-of-Mass det. time= 48.6 min (787.5 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	4,939 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	4,360	41.8	0	0
2.71	4,360	41.8	4,939	4,939

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	2.00'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0080 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 8.10 hrs HW=0.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond 5R: Recharge 4

Inflow Area = 0.230 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 0.67 cfs @ 12.09 hrs, Volume= 0.051 af
Outflow = 0.01 cfs @ 8.05 hrs, Volume= 0.015 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.01 cfs @ 8.05 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.82' @ 17.60 hrs Surf.Area= 2,108 sf Storage= 1,604 cf

Plug-Flow detention time= 195.8 min calculated for 0.015 af (29% of inflow)
Center-of-Mass det. time= 48.1 min (787.0 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	2,388 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	2,108	41.8	0	0
2.71	2,108	41.8	2,388	2,388

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	2.25'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.10' S= 0.0460 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.01 cfs @ 8.05 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond 6R: Recharge 5A

Inflow Area = 0.505 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 0.113 af
Outflow = 0.03 cfs @ 7.90 hrs, Volume= 0.032 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 7.90 hrs, Volume= 0.032 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.87' @ 17.69 hrs Surf.Area= 4,533 sf Storage= 3,545 cf

Plug-Flow detention time= 194.0 min calculated for 0.032 af (29% of inflow)
Center-of-Mass det. time= 45.5 min (784.3 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,135 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	4,533	41.8	0	0
2.71	4,533	41.8	5,135	5,135

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	1.90'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0040 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 7.90 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond 7R: Recharge 5B

Inflow Area = 0.505 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 0.113 af
Outflow = 0.03 cfs @ 7.90 hrs, Volume= 0.032 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 7.90 hrs, Volume= 0.032 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.87' @ 17.69 hrs Surf.Area= 4,533 sf Storage= 3,545 cf

Plug-Flow detention time= 194.0 min calculated for 0.032 af (29% of inflow)
Center-of-Mass det. time= 45.5 min (784.3 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,135 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	4,533	41.8	0	0
2.71	4,533	41.8	5,135	5,135

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	1.90'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0040 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 7.90 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond 8R: Recharge 6A

Inflow Area = 0.551 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.62 cfs @ 12.09 hrs, Volume= 0.123 af
Outflow = 0.03 cfs @ 7.90 hrs, Volume= 0.035 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 7.90 hrs, Volume= 0.035 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.86' @ 17.68 hrs Surf.Area= 4,958 sf Storage= 3,864 cf

Plug-Flow detention time= 193.9 min calculated for 0.035 af (29% of inflow)
Center-of-Mass det. time= 45.6 min (784.5 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,616 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	4,958	41.8	0	0
2.71	4,958	41.8	5,616	5,616

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	1.90'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0040 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 7.90 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond 9R: Recharge 6B

Inflow Area = 0.551 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.62 cfs @ 12.09 hrs, Volume= 0.123 af
Outflow = 0.03 cfs @ 7.90 hrs, Volume= 0.035 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 7.90 hrs, Volume= 0.035 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.86' @ 17.68 hrs Surf.Area= 4,958 sf Storage= 3,864 cf

Plug-Flow detention time= 193.9 min calculated for 0.035 af (29% of inflow)
Center-of-Mass det. time= 45.6 min (784.5 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,616 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	4,958	41.8	0	0
2.71	4,958	41.8	5,616	5,616

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	1.90'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.80' S= 0.0040 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 7.90 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond 10R: Recharge 7

Inflow Area = 0.459 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.103 af
Outflow = 0.03 cfs @ 8.10 hrs, Volume= 0.031 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 8.10 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.74' @ 17.48 hrs Surf.Area= 4,360 sf Storage= 3,173 cf

Plug-Flow detention time= 191.6 min calculated for 0.031 af (30% of inflow)
Center-of-Mass det. time= 48.6 min (787.5 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	4,939 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	4,360	41.8	0	0
2.71	4,360	41.8	4,939	4,939

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	2.00'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.90' S= 0.0040 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.03 cfs @ 8.10 hrs HW=0.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=0.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond 11R: Recharge 8

Inflow Area = 0.689 ac, Inflow Depth > 2.68" for 2 yr event
Inflow = 2.02 cfs @ 12.09 hrs, Volume= 0.154 af
Outflow = 0.04 cfs @ 17.66 hrs, Volume= 0.045 af, Atten= 98%, Lag= 334.2 min
Discarded = 0.04 cfs @ 7.95 hrs, Volume= 0.045 af
Primary = 0.00 cfs @ 17.66 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.85' @ 17.66 hrs Surf.Area= 6,233 sf Storage= 4,822 cf

Plug-Flow detention time= 193.2 min calculated for 0.044 af (29% of inflow)
Center-of-Mass det. time= 45.6 min (784.5 - 738.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	7,061 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	6,233	41.8	0	0
2.71	6,233	41.8	7,061	7,061

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	1.85'	**12.0" x 25.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 1.70' S= 0.0060 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=0.04 cfs @ 7.95 hrs HW=0.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 17.66 hrs HW=1.85' (Free Discharge)
└**2=Culvert** (Barrel Controls 0.00 cfs @ 0.04 fps)

Pond P1A: Lot1A

Inflow Area = 4.572 ac, Inflow Depth > 2.09" for 2 yr event
Inflow = 5.68 cfs @ 12.09 hrs, Volume= 0.797 af
Outflow = 2.81 cfs @ 12.44 hrs, Volume= 0.788 af, Atten= 51%, Lag= 20.8 min
Discarded = 0.02 cfs @ 12.44 hrs, Volume= 0.015 af
Primary = 2.78 cfs @ 12.44 hrs, Volume= 0.773 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 522.33' @ 12.44 hrs Surf.Area= 3,564 sf Storage= 5,840 cf

Plug-Flow detention time= 38.4 min calculated for 0.785 af (99% of inflow)
Center-of-Mass det. time= 34.0 min (832.5 - 798.6)

Volume	Invert	Avail.Storage	Storage Description
#1	520.00'	19,610 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
520.00	1,455	0	0
524.00	5,080	13,070	13,070
525.00	8,000	6,540	19,610

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	520.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	521.00'	**30.0 deg x 6.00' rise Sharp-Crested Vee/Trap Weir** C= 2.61

Discarded OutFlow Max=0.02 cfs @ 12.44 hrs HW=522.33' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=2.78 cfs @ 12.44 hrs HW=522.33' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 1.36 cfs @ 6.94 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 1.42 cfs @ 3.01 fps)

Pond P1B: Lot1

Inflow Area = 2.829 ac, Inflow Depth > 2.13" for 2 yr event
Inflow = 7.16 cfs @ 12.09 hrs, Volume= 0.501 af
Outflow = 1.57 cfs @ 12.51 hrs, Volume= 0.493 af, Atten= 78%, Lag= 25.0 min
Discarded = 0.03 cfs @ 12.51 hrs, Volume= 0.018 af
Primary = 1.54 cfs @ 12.51 hrs, Volume= 0.475 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 523.36' @ 12.51 hrs Surf.Area= 4,885 sf Storage= 7,936 cf

Plug-Flow detention time= 61.2 min calculated for 0.493 af (98% of inflow)
Center-of-Mass det. time= 54.1 min (821.8 - 767.7)

Volume	Invert	Avail.Storage	Storage Description
#1	521.00'	25,690 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
521.00	1,845	0	0
525.00	7,000	17,690	17,690
526.00	9,000	8,000	25,690

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	521.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	522.70'	**20.0 deg x 4.00' rise Sharp-Crested Vee/Trap Weir** C= 2.69

Discarded OutFlow Max=0.03 cfs @ 12.51 hrs HW=523.36' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.54 cfs @ 12.51 hrs HW=523.36' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 1.37 cfs @ 6.99 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.17 cfs @ 2.18 fps)

Pond P2: Lot 2

Inflow Area = 5.369 ac, Inflow Depth > 2.13" for 2 yr event
Inflow = 13.59 cfs @ 12.09 hrs, Volume= 0.952 af
Outflow = 3.16 cfs @ 12.49 hrs, Volume= 0.914 af, Atten= 77%, Lag= 24.2 min
Discarded = 0.04 cfs @ 12.49 hrs, Volume= 0.026 af
Primary = 3.12 cfs @ 12.49 hrs, Volume= 0.888 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 523.50' @ 12.49 hrs Surf.Area= 6,174 sf Storage= 15,595 cf

Plug-Flow detention time= 71.8 min calculated for 0.914 af (96% of inflow)
Center-of-Mass det. time= 56.5 min (824.2 - 767.7)

Volume	Invert	Avail.Storage	Storage Description
#1	520.00'	52,710 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
520.00	2,730	0	0
526.00	8,630	34,080	34,080
528.00	10,000	18,630	52,710

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	520.30'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	522.70'	**20.0 deg x 4.00' rise Sharp-Crested Vee/Trap Weir** C= 2.69

Discarded OutFlow Max=0.04 cfs @ 12.49 hrs HW=523.50' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=3.12 cfs @ 12.49 hrs HW=523.50' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 2.85 cfs @ 8.15 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.27 cfs @ 2.41 fps)

Pond P3: Lot 3

Inflow Area = 4.210 ac, Inflow Depth > 1.49" for 2 yr event
Inflow = 7.73 cfs @ 12.09 hrs, Volume= 0.522 af
Outflow = 1.98 cfs @ 12.49 hrs, Volume= 0.503 af, Atten= 74%, Lag= 24.0 min
Discarded = 0.03 cfs @ 12.49 hrs, Volume= 0.022 af
Primary = 1.95 cfs @ 12.49 hrs, Volume= 0.481 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 527.00' @ 12.49 hrs Surf.Area= 5,065 sf Storage= 8,643 cf

Plug-Flow detention time= 75.2 min calculated for 0.503 af (96% of inflow)
Center-of-Mass det. time= 61.7 min (856.1 - 794.5)

Volume	Invert	Avail.Storage	Storage Description
#1	525.00'	35,338 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
525.00	3,575	0	0
530.00	7,300	27,188	27,188
531.00	9,000	8,150	35,338

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	525.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	526.00'	**30.0 deg x 4.00' rise Sharp-Crested Vee/Trap Weir** C= 2.61

Discarded OutFlow Max=0.03 cfs @ 12.49 hrs HW=527.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.95 cfs @ 12.49 hrs HW=527.00' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 1.25 cfs @ 6.37 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.70 cfs @ 2.61 fps)

Pond P4: Lot 4

Inflow Area = 1.940 ac, Inflow Depth > 1.79" for 2 yr event
Inflow = 4.24 cfs @ 12.09 hrs, Volume= 0.289 af
Outflow = 2.97 cfs @ 12.18 hrs, Volume= 0.278 af, Atten= 30%, Lag= 5.2 min
Discarded = 0.01 cfs @ 12.18 hrs, Volume= 0.008 af
Primary = 2.96 cfs @ 12.18 hrs, Volume= 0.270 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 505.78' @ 12.18 hrs Surf.Area= 1,729 sf Storage= 2,550 cf

Plug-Flow detention time= 38.4 min calculated for 0.277 af (96% of inflow)
Center-of-Mass det. time= 24.3 min (806.9 - 782.5)

Volume	Invert	Avail.Storage	Storage Description
#1	504.00'	10,095 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
504.00	1,135	0	0
508.00	2,470	7,210	7,210
509.00	3,300	2,885	10,095

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	504.00'	**30.0 deg x 4.00' rise Sharp-Crested Vee/Trap Weir** C= 2.61

Discarded OutFlow Max=0.01 cfs @ 12.18 hrs HW=505.77' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=2.93 cfs @ 12.18 hrs HW=505.77' (Free Discharge)
└**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.93 cfs @ 3.48 fps)

Pond P5: Lot 5

Inflow Area = 5.375 ac, Inflow Depth > 1.86" for 2 yr event
Inflow = 12.17 cfs @ 12.09 hrs, Volume= 0.835 af
Outflow = 3.59 cfs @ 12.44 hrs, Volume= 0.812 af, Atten= 71%, Lag= 20.8 min
Discarded = 0.04 cfs @ 12.44 hrs, Volume= 0.032 af
Primary = 3.54 cfs @ 12.44 hrs, Volume= 0.780 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 509.06' @ 12.44 hrs Surf.Area= 7,191 sf Storage= 11,935 cf

Plug-Flow detention time= 50.8 min calculated for 0.812 af (97% of inflow)
Center-of-Mass det. time= 40.0 min (818.9 - 778.9)

Volume	Invert	Avail.Storage	Storage Description
#1	507.00'	51,025 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
507.00	4,370	0	0
512.00	11,200	38,925	38,925
513.00	13,000	12,100	51,025

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	507.00'	**10.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	508.40'	**20.0 deg x 4.00' rise Sharp-Crested Vee/Trap Weir** C= 2.69

Discarded OutFlow Max=0.04 cfs @ 12.44 hrs HW=509.06' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=3.54 cfs @ 12.44 hrs HW=509.06' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 3.37 cfs @ 6.18 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.17 cfs @ 2.19 fps)

Pond P6: Lot 6

Inflow Area = 2.990 ac, Inflow Depth > 1.79" for 2 yr event
Inflow = 6.53 cfs @ 12.09 hrs, Volume= 0.445 af
Outflow = 3.44 cfs @ 12.24 hrs, Volume= 0.434 af, Atten= 47%, Lag= 9.1 min
Discarded = 0.02 cfs @ 12.24 hrs, Volume= 0.017 af
Primary = 3.42 cfs @ 12.24 hrs, Volume= 0.417 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 529.61' @ 12.24 hrs Surf.Area= 3,198 sf Storage= 4,749 cf

Plug-Flow detention time= 36.3 min calculated for 0.433 af (97% of inflow)
Center-of-Mass det. time= 26.7 min (809.2 - 782.5)

Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	17,755 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
528.00	2,690	0	0
532.00	3,950	13,280	13,280
533.00	5,000	4,475	17,755

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	528.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	528.00'	**30.0 deg x 4.00' rise Sharp-Crested Vee/Trap Weir** C= 2.61

Discarded OutFlow Max=0.02 cfs @ 12.24 hrs HW=529.61' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=3.41 cfs @ 12.24 hrs HW=529.61' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 1.10 cfs @ 5.62 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.30 cfs @ 3.31 fps)

Pond P8A: Lot 8A

Inflow Area = 0.930 ac, Inflow Depth > 1.87" for 2 yr event
Inflow = 2.11 cfs @ 12.09 hrs, Volume= 0.145 af
Outflow = 0.63 cfs @ 12.44 hrs, Volume= 0.144 af, Atten= 70%, Lag= 20.7 min
Discarded = 0.01 cfs @ 8.75 hrs, Volume= 0.006 af
Primary = 0.62 cfs @ 12.44 hrs, Volume= 0.138 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 503.35' @ 12.44 hrs Surf.Area= 960 sf Storage= 1,685 cf

Plug-Flow detention time= 25.6 min calculated for 0.143 af (99% of inflow)
Center-of-Mass det. time= 22.8 min (802.0 - 779.2)

Volume	Invert	Avail.Storage	Storage Description
#1	501.00'	4,608 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
501.00	960	40.0	0	0
502.00	960	40.0	384	384
506.00	960	100.0	3,840	4,224
507.00	960	40.0	384	4,608

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	501.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	503.50'	**10.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 8.75 hrs HW=501.06' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.62 cfs @ 12.44 hrs HW=503.35' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.62 cfs @ 7.12 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond P8B: Lot 8B

Inflow Area = 0.929 ac, Inflow Depth > 1.87" for 2 yr event
Inflow = 2.11 cfs @ 12.09 hrs, Volume= 0.145 af
Outflow = 0.63 cfs @ 12.43 hrs, Volume= 0.144 af, Atten= 70%, Lag= 20.6 min
Discarded = 0.01 cfs @ 8.75 hrs, Volume= 0.006 af
Primary = 0.62 cfs @ 12.43 hrs, Volume= 0.138 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 503.35' @ 12.43 hrs Surf.Area= 960 sf Storage= 1,682 cf

Plug-Flow detention time= 25.6 min calculated for 0.143 af (99% of inflow)
Center-of-Mass det. time= 22.8 min (802.0 - 779.2)

Volume	Invert	Avail.Storage	Storage Description
#1	501.00'	4,608 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
501.00	960	40.0	0	0
502.00	960	40.0	384	384
506.00	960	100.0	3,840	4,224
507.00	960	40.0	384	4,608

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	501.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	503.50'	**10.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 8.75 hrs HW=501.06' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.62 cfs @ 12.43 hrs HW=503.35' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 0.62 cfs @ 7.12 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
11.560	73	Woods, Fair, HSG C (L3,N,S,W)
10.213	74	>75% Grass cover, Good, HSG C (L1A,L1B,L2,L3,L4,L5,L6,L7,L8A,L8B,N,N1,S,S1,S2,W)
18.513	98	Paved parking & roofs (L1A,L1B,L2,L3,L4,L5,L6,L7,L8A,L8B,N1,S1,S2)
5.584	98	Roof (1B,2B,3B,4B,5B,6B,7B,8B,9B,10B,11B)
45.870		

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

Reach NR: North Inflow=21.68 cfs 4.185 af
Outflow=21.68 cfs 4.185 af

Reach SR: South Inflow=23.74 cfs 3.538 af
Outflow=23.74 cfs 3.538 af

Reach WET: Wetland Inflow=57.67 cfs 9.354 af
Outflow=57.67 cfs 9.354 af

Reach WR: West Inflow=12.73 cfs 1.630 af
Outflow=12.73 cfs 1.630 af

Reach NR: North

Inflow Area = 18.410 ac, Inflow Depth > 2.73" for 10 yr event
Inflow = 21.68 cfs @ 12.22 hrs, Volume= 4.185 af
Outflow = 21.68 cfs @ 12.22 hrs, Volume= 4.185 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SR: South

Inflow Area = 17.810 ac, Inflow Depth > 2.38" for 10 yr event
Inflow = 23.74 cfs @ 12.19 hrs, Volume= 3.538 af
Outflow = 23.74 cfs @ 12.19 hrs, Volume= 3.538 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach WET: Wetland

Inflow Area = 45.870 ac, Inflow Depth > 2.45" for 10 yr event
Inflow = 57.67 cfs @ 12.22 hrs, Volume= 9.354 af
Outflow = 57.67 cfs @ 12.22 hrs, Volume= 9.354 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach WR: West

Inflow Area = 9.650 ac, Inflow Depth > 2.03" for 10 yr event
Inflow = 12.73 cfs @ 12.25 hrs, Volume= 1.630 af
Outflow = 12.73 cfs @ 12.25 hrs, Volume= 1.630 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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

Reach NR: North Inflow=45.14 cfs 6.878 af
Outflow=45.14 cfs 6.878 af

Reach SR: South Inflow=50.56 cfs 6.121 af
Outflow=50.56 cfs 6.121 af

Reach WET: Wetland Inflow=122.68 cfs 15.926 af
Outflow=122.68 cfs 15.926 af

Reach WR: West Inflow=27.50 cfs 2.927 af
Outflow=27.50 cfs 2.927 af

Reach NR: North

Inflow Area = 18.410 ac, Inflow Depth > 4.48" for 100 yr event
Inflow = 45.14 cfs @ 12.22 hrs, Volume= 6.878 af
Outflow = 45.14 cfs @ 12.22 hrs, Volume= 6.878 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SR: South

Inflow Area = 17.810 ac, Inflow Depth > 4.12" for 100 yr event
Inflow = 50.56 cfs @ 12.18 hrs, Volume= 6.121 af
Outflow = 50.56 cfs @ 12.18 hrs, Volume= 6.121 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach WET: Wetland

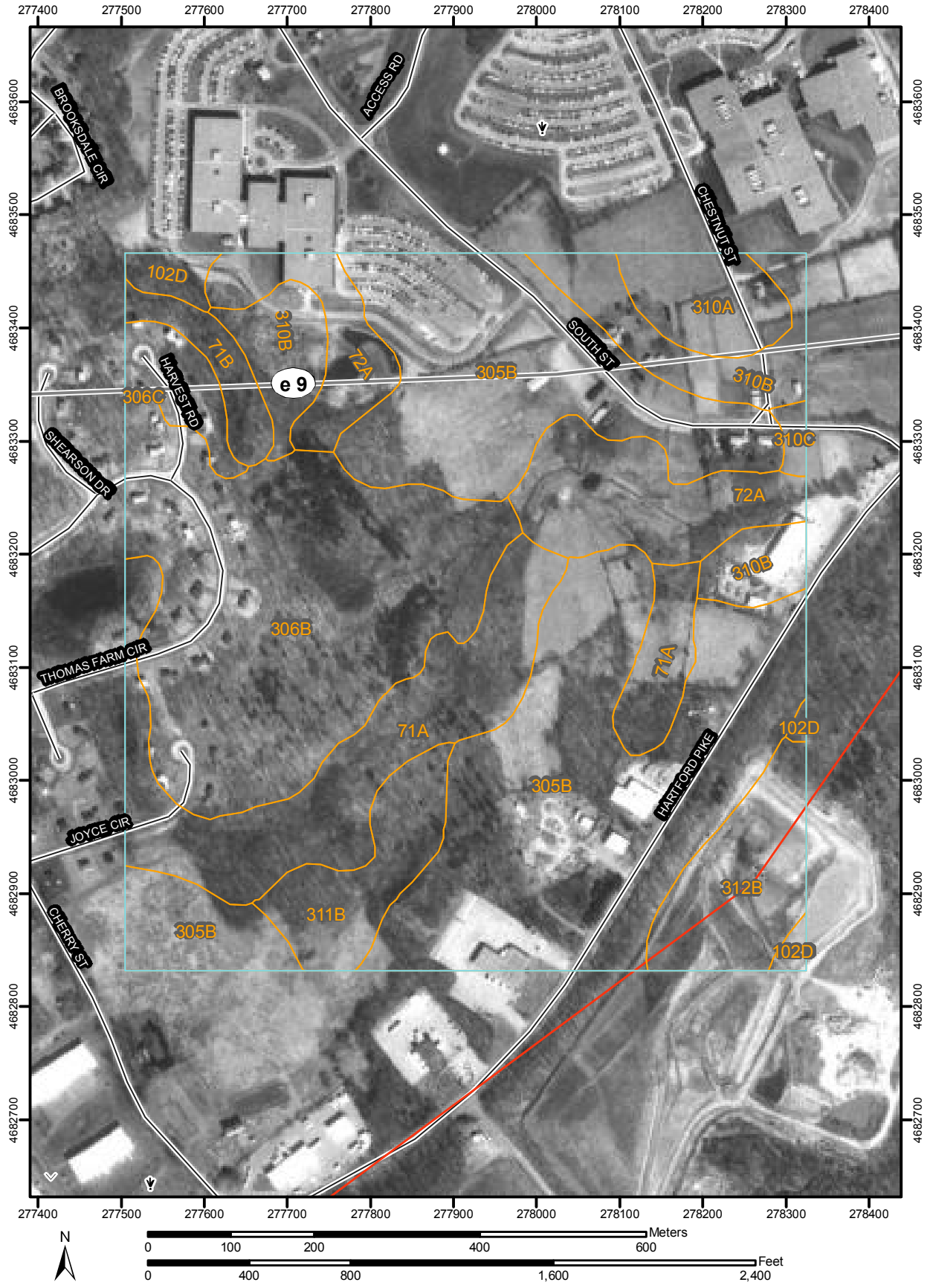
Inflow Area = 45.870 ac, Inflow Depth > 4.17" for 100 yr event
Inflow = 122.68 cfs @ 12.21 hrs, Volume= 15.926 af
Outflow = 122.68 cfs @ 12.21 hrs, Volume= 15.926 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach WR: West

Inflow Area = 9.650 ac, Inflow Depth > 3.64" for 100 yr event
Inflow = 27.50 cfs @ 12.23 hrs, Volume= 2.927 af
Outflow = 27.50 cfs @ 12.23 hrs, Volume= 2.927 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs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SHEARSON DR
THOMAS FARM CIR
JOYCE CIR
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Meters
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200
400
600
Feet
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400
800
1,600
2,400

MAP LEGEND

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

Soils
- Soil Map Units

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

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N

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

Soil Survey Area: Worcester County, Massachusetts, Northeastern Part
Survey Area Data: Version 6, Jan 30, 2007

Date(s) aerial images were photographed: 3/29/1995

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

Map Unit Legend

Worcester County, Massachusetts, Northeastern Part (MA613)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
71A	Ridgebury fine sandy loam, 0 to 3 percent slopes, extremely stony	20.8	11.9%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	2.9	1.7%
72A	Whitman loam, 0 to 3 percent slopes	14.8	8.5%
102D	Chatfield-Hollis-Rock outcrop complex, 15 to 25 percent slopes	1.9	1.1%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	62.9	36.0%
306B	Paxton fine sandy loam, 3 to 8 percent slopes, very stony	35.5	20.3%
306C	Paxton fine sandy loam, 8 to 15 percent slopes, very stony	3.2	1.8%
310A	Woodbridge fine sandy loam, 0 to 3 percent slopes	4.9	2.8%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	12.3	7.0%
310C	Woodbridge fine sandy loam, 8 to 15 percent slopes	0.7	0.4%
311B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	6.7	3.8%
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony	8.1	4.7%
Totals for Area of Interest (AOI)		174.7	100.0%