Sudbury-Hudson Transmission Reliability Project and Mass Central Rail Trail Project

Sudbury, Massachusetts

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Stormwater Management Plan Narrative

This Stormwater Management Plan Narrative was prepared to demonstrate compliance with the Town of Sudbury's Stormwater Management By-Law and Regulations. Sections 1.1 through 1.4 describe the proposed Project, stormwater analysis methodology, and existing and proposed drainage conditions. Section 2 describes the Project's compliance with the Massachusetts Stormwater Management Standards, and Section 3 describes the Project's compliance with the additional requirements in the Stormwater Management Bylaw Regulations for the Town of Sudbury.

1.1 Project Description

The overall Project includes completion of a portion of the regional Massachusetts Central Rail Trail ("MCRT") and construction of a portion of a new 115-kilovolt ("kV") underground electric transmission line ("the underground transmission line") within the inactive MBTA right-of-way ("ROW"). The Project stormwater system is designed for the final use as a bike path and includes a stormwater management system that uses vegetated swales with check dams, consistent with DCR's standard design for bike path facilities. The entire Project is approximately 9.0 miles long and is located primarily in the towns of Sudbury and Hudson, with short sections in the Town of Stow and the City of Marlborough (see Figure 1).

The portion of the Project within Sudbury originates at the Sudbury/Hudson town line and follows the MBTA ROW to the Sudbury Substation, located south of Route 20, between Landham Crossing and Goodman's Hill Road. This stormwater narrative addresses the portion of the Project located in the Town of Sudbury.

1.2 Methodology

The rainfall-runoff response of the Site under the existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100 years, with rainfall amounts of 3.2", 4.8", 6.0", and 8.6", respectively, as outlined by the Stormwater Management Bylaw Regulations for the Town of Sudbury. A rainfall depth of one inch (1") was also evaluated. The runoff coefficients and time of concentration for the existing and proposed conditions were determined using the NRCS Technical Release 55 (TR-55) methodology in HydroCAD. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology.

1.3 Existing Drainage Conditions

The Project is located within the MBTA ROW between the Hudson/Sudbury town line and the Sudbury Substation located off of Route 20 in Sudbury. Under existing conditions, a portion of the Project footprint contains the ballast, ties and rails of the inactive railroad, and an area adjacent to the rails is worn down and used as a path by hikers, individuals walking dogs and/or riding horses, mountain bikers, motorized dirt bikers and snowmobilers. In general, the vegetation in the Project area is scattered to moderately dense saplings and young trees, with some localized areas of shrub growth. There are few large mature trees located within the Project's limit of work.

The predominant existing cross section in the Project area consists of the rail line located either on a berm elevated above the adjacent terrain or in areas below adjacent terrain where the rail line was built by excavating into the landscape. In its present condition, the rail line sits on stone ballast and wood ties and occupies a footprint that is approximately 11 feet wide. The steel tracks are still present in most areas.

Figures 2a-2e illustrate the existing drainage patterns within the study area. Under current conditions, the Study Area is divided into 86 drainage areas within Sudbury, which discharge stormwater runoff to 69 Design Points. These Design Points are identified as DP-X.X. The existing drainage areas are delineated based on the areas contributing to each design point. The roadways that intersect the ROW were used to create the limits for the five segments and break the Project area into smaller areas for evaluation. The following is a list of the Sudbury segments:

- Segment 5 – From approximately the Sudbury/Hudson Town Limits to Dutton Road
- Segment 6 – From Dutton Road to Peakham Road
- Segment 7 – Peakham Road to Horse Pond Road
- Segment 8 - Horse Pond Road to Union Avenue
- Segment 9/10 – Union Avenue to the eastern Project Limits

Table 1 below provides a summary of the hydrologic data under the existing conditions.

Table 1 Hydrologic Data under the Existing Conditions

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX-5.6	Wetland 18	DP-5.6	16.6	30	44.1
EX-5.7	Wetland 19	DP-5.7	9.5	31	63.9
EX-5.8A	Wetland 45	DP-5.8	0.7	36	19.3
EX-5.8B	Wetland 45	DP5.8	0.3	40	24.1
EX-5.9	Low Point	DP-5.9	0.9	38	29.2
EX-5.10	Low Point	DP-5.10	1.7	31	50.3
EX-5.11	Low Point	DP-5.11	0.4	30	42..6
EX-5.12	Wetland 44	DP-5.12	8.2	47	119.8
EX-5.13	Wetland 44	DP-5.13	2.4	30	64.8
EX-5.14A	Wetland 44	DP-5.14	0.6	46	23.8
EX-5.14B	Wetland 44	DP-5.14	0.4	37	10.1
EX-5.15	Wetland 44	DP-5.15	0.5	51	51.5
EX-5.16	Wetland*	DP-5.16	8.5	37	22.6
EX-5.17	Wetlands 41 & 43 Vernal Pools 11 & 13	DP-5.17	18.5	52	6.4
EX-5.18	Wetland 42 Vernal Pool 12	DP-5.18	10.4	42	75.8
EX-5.19	Wetland 40 Vernal Pool 10	DP-5.19	0.7	35	21.0
EX-5.20	Off Site	DP-5.20	1.1	30	20.3
EX-5.21	Wetland 39 Vernal Pool 9	DP-5.21	0.3	37	12.0
EX-6.1A	Low Point	DP-6.1	0.1	44	15.7
EX-6.1B	Low Point	DP-6.1	0.7	38	61.5
EX-6.2	Dutton	DP-6.2	0.7	32	41.6
EX-6.3	Low Point	DP-6.3	0.8	42	15.4
EX-6.4	Low Point	DP-6.4	2.9	50	27.4
EX-6.5	Low Point	DP-6.5	0.1	30	15.0
EX-6.6A	Wetlands 36 & 38	DP-6.6	0.6	35	86.4
EX-6.6B	Wetlands 36 & 38	DP-6.6	6.5	43	21.7
EX-6.7	Wetland 37	DP-6.7	7.1	39	31.7
EX-6.8	Low Point	DP-6.8	4.9	32	34.1
EX-6.9	Low Point	DP-6.9	0.9	41	17.4
EX-6.10	Low Point	DP-6.10	0.3	32	17.1
EX-6.11	Approximate Vernal Pool/Wetland*	DP-6.11	0.1	33	10.1

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX-6.12	Wetland 35 Vernal Pool 8	DP-6.12	0.1	32	7.3
EX-6.13	Wetland 34	DP-6.13	0.5	33	9.2
EX-6.14	Wetland 33	DP-6.14	0.6	34	22.6
EX-6.15	Low Point	DP-6.15	0.1	84	6.0
EX-7.1A	Wetland 30	DP-7.1	0.2	42	15.1
EX-7.1B	Wetland 30	DP-7.1	1.1	55	17.8
EX-7.2	Wetland 32	DP-7.2	2.7	36	25.2
EX-7.3	Low Point	DP-7.3	3.6	41	35.2
EX-7.4	Low Point	DP-7.4	0.1	34	6.0
EX-7.5	Wetland 31	DP-7.5	0.8	58	24.2
EX-7.6	Low Point	DP-7.6	0.9	33	14.1
EX-7.7	Low Point	DP-7.7	0.7	35	11.2
EX-7.8	Low Point	DP-7.8	1.2	35	18.5
EX-7.9	Low Point	DP-7.9	5.7	43	18.2
EX-7.10	Low Point	DP-7.10	0.3	38	21.3
EX-7.11	Low Point	DP-7.11	1.6	45	17.6
EX-7.12	Low Point	DP-7.12	1.2	46	19.3
EX-8.1A	Wetlands 28 & 29	DP-8.1	19.9	56	17.5
EX-8.1B	Wetlands 28 & 29	DP-8.1	0.3	32	36.7
EX-8.2A	Wetland 27	DP-8.2	0.9	54	47.3
EX-8.2B	Wetland 27	DP-8.2	1.3	32	70.9
EX-8.3A	Wetland 25	DP-8.3	0.3	44	13.8
EX-8.3B	Wetland 25	DP-8.3	2.3	37	60.7
EX-8.4A	Wetland 26	DP-8.4	0.3	32	14.0
EX-8.4B	Wetland 26	DP-8.4	0.7	34	36.6
EX-8.5A	Low Point	DP-8.5	0.7	34	37.8
EX-8.5B	Low Point	DP-8.5	3.4	65	15.3
EX-8.6	Wetland 24	DP-8.6	1.5	35	70.7
EX-8.7	Low Point	DP-8.7	0.8	61	17.8
EX-8.8	Low Point	DP-8.8	0.9	70	34.8
EX-8.9	Wetland 24A Vernal Pool 5	DP-8.9	1.0	41	30.3
EX-8.10	Low Point	DP-8.10	0.2	38	16.7
EX-8.11	Wetland*	DP-8.11	0.9	55	8.9
EX-9.1	Station Road	DP-9.1	2.2	83	41.2
EX-10.1	Wetland 18	DP-10.1	1.1	79	19.0
EX-10.2	Wetland 19	DP-10.2	0.6	80	10.9
EX-10.3	Wetland 15	DP-10.3	1.0	78	13.4

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX-10.4A	Wetland 16	DP-10.4	1.8	63	17.3
EX-10.4B	Wetland 16	DP-10.4	3.0	63	13.4
EX-10.5	Wetland 14	DP-10.5	0.8	78	23.4
EX-10.6A	Wetland 11	DP-10.6	0.6	40	14.6
EX-10.6B	Wetland 11	DP-10.6	4.5	50	13.8
EX-10.7A	Wetland 13	DP-10.7	1.7	37	38.6
EX-10.7B	Wetland 13	DP-10.7	0.1	77	11.8
EX-10.8	Wetland 10	DP-10.8	0.9	35	7.3
EX-10.9	Wetland 5 Vernal Pools 2 & 3	DP-10.9	2.8	62	7.6
EX-10.10	Vernal Pool 4	DP-10.10	0.1	76	7.0
EX-10.11	Wetland 5	DP-10.11/13	1.1	52	10.7
EX-10.12A	Wetland 6	DP-10.12	0.5	37	33.5
EX-10.12B	Wetland 6	DP-10.12	0.9	54	33.0
EX-10.13A	Wetland 5	DP-10.11/13	1.4	66	15.9
EX-10.13B	Wetland 5		0.4	72	6.0
EX-10.14A	Wetland 3 Vernal Pool 1	DP-10.14	4.1	40	19.0
EX-10.14B	Wetland 3 Vernal Pool 1		2.9	56	30.6
EX-10.15	Wetland 4	DP-10.15	4.3	37	23.0

*Wetlands without a number designation (e.g., "Wetland") are located outside of the MBTA ROW. These wetlands were not field delineated and are shown as approximate on the plans.

1.4 Proposed Drainage Conditions

Figures 3a-3e illustrate the proposed post-construction drainage conditions for the Project. The study area was divided into 88 drainage areas that discharge stormwater to the 69 existing Design Points. A summary of the hydrologic data under the proposed conditions is provided in Table 2.

Table 2 Hydrologic Data under the Proposed Conditions

Drainage Area	Discharge Location	Design Point	Area (acres)	Curve Number	Time of Concentration (min)
PR-5.6	Wetland 18	DP-5.6	17.4	31	22.8
PR-5.7	Wetland 19	DP-5.7	9.6	30	63.9
PR-5.8A	Wetland 45	DP-5.8	0.8	44	12.9
PR-5.8B	Wetland 45	DP-5.8	0.2	52	11.8
PR-5.9	Low Point	DP-5.9	0.7	30	13.7
PR-5.10	Low Point	DP-5.10	1.6	32	50.3

Drainage Area	Discharge Location	Design Point	Area (acres)	Curve Number	Time of Concentration (min)
PR-5.11	Low Point	DP-5.11	0.4	30	42.6
PR-5.12	Wetland 44	DP-5.12	7.9	45	84.9
PR-5.13	Wetland 44	DP-5.13	2.6	52	47.3
PR-5.14A	Wetland 44	DP-5.14	0.7	51	9.2
PR-5.14B	Wetland 44	DP-5.14	0.4	41	13.7
PR-5.15	Wetland 44	DP-5.15	0.3	51	16.8
PR-5.16	Wetland*	DP-5.16	8.6	37	22.6
PR-5.17	Wetlands 41 & 43 Vernal Pools 11 & 13	DP-5.17	18.5	52	6.4
PR-5.18A	Wetland 42 Vernal Pool 12	DP-5.18	10.5	42	75.8
PR-5.18B	Wetland 42 Vernal Pool 12	DP-5.18	0.1	46	6.0
PR-5.19	Wetland 40 Vernal Pool 10	DP-5.19	0.7	31	21.0
PR-5.20	Off Site	DP-5.20	1.2	37	20.3
PR-5.21	Wetland 39 Vernal Pool 9	DP-5.21	0.3	46	6.0
PR-6.1A	Low Point	DP-6.1	0.1	43	15.7
PR-6.1B	Low Point	DP-6.1	0.6	35	15.8
PR-6.2	Dutton	DP-6.2	1.0	43	24.9
PR-6.3	Low Point	DP-6.3	0.8	42	15.0
PR-6.4	Low Point	DP-6.4	2.8	50	27.4
PR-6.5	Low Point	DP-6.5	0.1	30	15.0
PR-6.6A	Wetlands 36 & 38	DP-6.6	0.6	46	14.4
PR-6.6B	Wetland 36 & 38	DP-6.6	6.6	44	21.7
PR-6.7	Wetland 37	DP-6.7	7.0	38	16.2
PR-6.8	Low Point	DP-6.8	4.9	32	34.1
PR-6.9	Low Point	DP-6.9	0.9	41	17.4
PR-6.10	Low Point	DP-6.10	0.3	30	17.1
PR-6.11	Approximate Vernal Pool/Wetland*	DP-6.11	0.1	30	7.9
PR-6.12	Wetland 35 Vernal Pool 8	DP-6.12	0.1	30	6.0
PR-6.13	Wetland 34	DP-6.13	0.4	30	6.5
PR-6.14	Wetland 33	DP-6.14	0.7	47	16.6
PR-6.15	Low Point	DP-6.15	0.1	84	6.0
PR-7.1A	Wetland 30	DP-7.1	0.2	55	9.5
PR-7.1B	Wetland 30	DP-7.1	1.2	62	17.5

Drainage Area	Discharge Location	Design Point	Area (acres)	Curve Number	Time of Concentration (min)
PR-7.2	Wetland 32	DP-7.2	2.6	35	25.2
PR-7.3	Low Point	DP-7.3	3.6	41	35.2
PR-7.4	Low Point	DP-7.4	0.1	34	6.0
PR-7.5	Wetland 31	DP-7.5	0.8	55	24.2
PR-7.6	Low Point	DP-7.6	0.9	41	17.7
PR-7.7	Low Point	DP-7.7	0.6	30	13.3
PR-7.8	Low Point	DP-7.8	1.3	40	30.0
PR-7.9	Low Point	DP-7.9	5.7	43	18.2
PR-7.10	Low Point	DP-7.10	0.3	31	24.1
PR-7.11	Low Point	DP-7.11	1.6	45	17.6
PR-7.12	Low Point	DP-7.12	1.2	46	19.3
PR-8.1A	Wetlands 28 & 29	DP-8.1	19.8	56	17.5
PR-8.1B	Wetlands 28 & 29	DP-8.1	0.3	30	33.1
PR-8.2A	Wetland 27	DP-8.2	1.0	62	47.3
PR-8.2B	Wetland 27	DP-8.2	1.4	35	40.7
PR-8.3A	Wetland 25	DP-8.3	0.3	42	13.8
PR-8.3B	Wetland 25	DP-8.3	2.2	36	47.7
PR-8.4A	Wetland 26	DP-8.4	0.4	52	14.0
PR-8.4B	Wetland 26	DP-8.4	0.7	46	18.8
PR-8.5A	Low Point	DP-8.5	0.7	50	19.4
PR-8.5B	Low Point	DP-8.5	3.5	65	15.3
PR-8.6	Wetland 24	DP-8.6	1.4	30	62.3
PR-8.7	Low Point	DP-8.7	0.8	75	17.8
PR-8.8	Low Point	DP-8.8	0.9	75	34.8
PR-8.9	Wetland 24A Vernal Pool 5	DP-8.9	0.9	30	30.3
PR-8.10	Low Point	DP-8.10	0.2	54	16.7
PR-8.11	Wetland*	DP-8.11	0.9	56	8.9
PR-9.1	Station Road	DP-9.1	2.2	84	29.7
PR-10.1	Wetland 18	DP-10.1	1.2	80	19.0
PR-10.2	Wetland 19	DP-10.2	0.5	78	10.9
PR-10.3	Wetland 15	DP-10.3	1.0	79	10.1
PR-10.4A	Wetland 16	DP-10.4	1.8	63	11.3
PR-10.4B	Wetland 16	DP-10.4	3.0	63	13.4
PR-10.5	Wetland 14	DP-10.5	0.8	78	23.4
PR-10.6A	Wetland 11	DP-10.6	1.5	35	14.6
PR-10.6B	Wetland 11	DP-10.6	4.5	52	9.9
PR-10.7A	Wetland 13	DP-10.7	0.8	47	15.5
PR-10.7B	Wetland 13	DP-10.7	0.1	79	11.8

Drainage Area	Discharge Location	Design Point	Area (acres)	Curve Number	Time of Concentration (min)
PR-10.8	Wetland 10	DP-10.8	0.9	35	7.3
PR-10.9	Wetland 5 Vernal Pools 2 & 3	DP-10.9	2.8	63	7.6
PR-10.10	Vernal Pool 4	DP-10.10	0.1	80	6.0
PR-10.11	Wetland 5	DP-10.11/13	1.1	52	10.7
PR-10.12A	Wetland 6	DP-10.12	0.3	41	12.4
PR-10.12B	Wetland 6	DP-10.12	0.9	58	14.7
PR-10.13A	Wetland 5	DP-10.11/13	1.4	70	8.0
PR-10.13B	Wetland 5	DP-10/11/13	0.4	74	6.0
PR-10.14A	Wetland 3 Vernal Pool 1	DP-10.14	4.1	40	19.0
PR-10.14B	Wetland 3 Vernal Pool 1	DP-10.14	2.9	56	11.9
PR-10.15A	Wetland 4	DP-10.15	4.3	39	20.3
PR-10.15B	Wetland 4	DP-10.15	0.1	50	12.2

*Wetlands without a number designation (e.g., "Wetland") are located outside of the MBTA ROW. These wetlands were not field delineated and are shown as approximate on the plans.

As per 310 CMR 10.05(6)(m)(6), "Footpaths, bike paths and other paths for pedestrian and/or nonmotorized vehicle access" shall meet the Stormwater Management Standards to the maximum extent practicable. The Project is not considered a Land Use with Higher Pollutant Load ("LUHPPL") and was designed in accordance with MassDEP's Massachusetts Stormwater Handbook (rev. 2008). The design incorporates the use of structural and non-structural Best Management Practices ("BMPs") to mitigate stormwater flows and promote infiltration and recharge, which is consistent with DCR's standard design for all its rail trail facilities. Additionally, existing and proposed flows to vernal pools were analyzed using the TR-20 methodology to confirm that the Project will not adversely affect the hydrologic regime contributing to these resource areas.

The structural BMPs include areas of increased infiltration, which are swales with check dams or basins, and conveyance swales. Check dam locations throughout the areas of increased infiltration were maximized in order to increase detention, treat stormwater, and ensure non-erosive flows. Conveyance swales are also included throughout the Project to help convey stormwater and although they provide benefits, they are not included in the stormwater calculations. The Project also utilizes "impervious disconnection," a non-structural BMP, to provide filtering and infiltration by redirecting stormwater from areas of impervious cover to areas of pervious cover. Although these areas provide benefits, they are also not included in the stormwater calculations for recharge and water quality because they are not considered recharge and treatment BMPs by MassDEP's Stormwater Management Handbook. An overview of the proposed BMPs is show in below:

Table 3 Overview of Proposed BMP's

Area of Increased Infiltration	Start Station	End Station	Area at 0" of Ponding	Area of 6" Ponding at overtopping elevation	Area at 1' of Ponding
P-5.8B	363+00 RT	365+00 RT	0	902	1,673
P-5.13	393+00 RT	395+50 RT	0	877	2,052
P-5.14B	404+50 RT	407+00 RT	0	765	1,945
P-5.18B	407+00 RT	407+50 RT	0	185	429
P-6.6A	509+00 RT	516+00 RT	0	1,650	8,410
P-8.2B	565+00 RT	569+50 RT	0	2,312	3,938
P-8.3B	569+50 LT	576+75 LT	0	5,048	8,124
P-8.4B	569+50 RT	576+50 RT	0	2,313	4,882
P-8.5A	579+25 RT	588+25 RT	0	3,262	7,236
P-10.6A	735+00 LT	738+25 LT	0	2,611	4,039
P-10.7A	730+00 LT	732+00 LT	0	793	1,419
P-10.12A	753+50 RT	757+50 RT	0	1,030	2,255
P-10.13A	753+50 LT	757+50 LT	0	1,280	2,730

Basin	Start Station	End Station	Elev. at 0" of Ponding	Area at 0" of Ponding	Elev. at of 6" Ponding	Area of 6" Ponding	Elev. of overtop-ping	Area at elev. of overtop-ping	Elev. at 1' of Ponding	Area at 1' of Ponding
P-6.2	500+25 RT	508+25 RT	181.5	431	182.0	599	182.3	-	182.5	1157
P-7.1	533+50 RT	533+70 RT	159.5	162	160.0	252	160.0	-	160.5	350
P-10-14B	758+ 10 LT	763+20 LT	Cell A							
			141.0	103	141.5	300	141.9	490	142.0	790
			Cell B							
			140.0	201	140.5	420	140.5	420	141.0	750

HydroCAD uses the SCS Unit Curve Number methodology in order to estimate storm runoff. The determination of runoff curve number depends on the watershed's characteristics including cover type and hydrologic soil group. The complete list of surface soils according to the National Resources Conservation Service ("NRCS") has been included in Appendix C, which includes the classification of on-site soils as Hydrologic Soil Groups ("HSG") A, B, C, and D. Soil groups previously defined by the NRCS as HSG unknown soils were assigned a HSG of A based on the recommendation of peer reviewers to use the higher rate HSG adjacent to the unknown soil group. Based on the soil information included in Appendix C, the vast majority of the Site is not considered to be within an area of rapid infiltration (soils with a saturated hydraulic conductivity greater than 2.4 inches per hour) with the exception of soils located near BMP P-6.2. Boring logs used in support of determining hydraulic conductivity for the proposed stormwater structural BMPs have been included in Appendix C.

A hydrologic analysis was performed for each design point shown in Figures 2a-2e and 3a-3e. The runoff from the large contributing areas was only minimally affected by the change in time of concentration (reduction in channel slope along ROW),changes to the curve number (CN) based on the increase impervious area (DCRs MCRT), and changes to the cover type.

Peak discharge rates and total volume of discharge was calculated as part of the analysis. The red numbers in Tables 4 through 15 below indicate increases in peak rate attenuation and runoff volume between existing and proposed conditions.

Table 4 Peak Discharge Rates (cfs) – Segment 5

	Design Storms				
Design Point	**1-inch**	**2-year**	**10-year**	**25-year**	**100-year**
DP-5.6					
Existing	0.0	0.0	0.0	0.2	2.1
Proposed	0.2	0.6	0.9	1.1	3.6
DP-5.7					
Existing	0.0	0.0	0.0	0.1	1.0
Proposed	0.0	0.0	0.0	0.1	1.0
DP-5.8					
Existing	0.0	0.0	0.0	0.1	0.7
Proposed	0.1	0.4	0.8	1.0	1.4
DP-5.9					
Existing	0.0	0.0	0.0	0.1	0.6
Proposed	0.0	0.0	0.0	0.0	0.1
DP-5.10					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.1	0.1	0.1	0.3
DP-5.11					
Existing	0.0	0.0	0.0	0.0	0.0
Proposed	0.0	0.0	0.0	0.0	0.0
DP-5.12					
Existing	0.0	0.1	0.8	1.7	4.6
Proposed	0.0	0.1	0.8	1.9	5.2
DP-5.13					
Existing	0.0	0.0	0.2	0.5	1.6
Proposed	0.2	0.9	1.4	1.8	3.1
DP-5.14					
Existing	0.0	0.0	0.1	0.4	1.1
Proposed	0.1	0.3	0.5	0.7	1.6
DP-5.15					
Existing	0.0	0.0	0.1	0.2	0.6

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
Proposed	0.0	0.0	0.1	0.2	0.6
DP-5.16					
Existing	0.0	0.0	0.2	1.0	5.2
Proposed	0.0	0.0	0.2	1.0	5.3
DP-5.17					
Existing	0.0	1.2	13.1	25.7	58.0
Proposed	0.0	1.2	13.1	25.7	57.9
DP-5.18					
Existing	0.0	0.0	0.6	1.8	5.9
Proposed	0.0	0.1	0.9	2.3	6.7
DP-5.19					
Existing	0.0	0.0	0.0	0.0	0.3
Proposed	0.0	0.0	0.0	0.0	0.1
DP-5.20					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.1	0.2	0.3	0.4
DP-5.21					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.1	0.2	0.4	0.5	0.6

Table 5 Peak Discharge Rates (cfs) – Segment 6

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.1					
Existing	0.0	0.0	0.0	0.1	0.3
Proposed	0.0	0.0	0.0	0.1	0.4
DP-6.2					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.0	0.2	1.0
DP-6.3					
Existing	0.0	0.0	0.1	0.3	0.9
Proposed	0.0	0.0	0.1	0.3	0.9
DP-6.4					
Existing	0.0	0.1	1.0	2.0	4.8
Proposed	0.0	0.1	1.0	2.0	4.8
DP-6.5					
Existing	0.0	0.0	0.0	0.0	0.0
Proposed	0.0	0.0	0.0	0.0	0.0

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.6					
Existing	0.0	0.0	0.8	2.3	7.7
Proposed	0.0	0.0	1.0	2.7	9.2
DP-6.7					
Existing	0.0	0.0	0.2	1.1	4.9
Proposed	0.0	0.0	0.2	1.1	5.4
DP-6.8					
Existing	0.0	0.0	0.0	0.1	1.1
Proposed	0.0	0.0	0.0	0.1	1.1
DP-6.9					
Existing	0.0	0.0	0.1	0.2	1.0
Proposed	0.0	0.0	0.1	0.2	0.9
DP-6.10					
Existing	0.0	0.0	0.0	0.0	0.1
Proposed	0.0	0.0	0.0	0.0	0.1
DP-6.11					
Existing	0.0	0.0	0.0	0.0	0.0
Proposed	0.0	0.0	0.0	0.0	0.0
DP-6.12					
Existing	0.0	0.0	0.0	0.0	0.0
Proposed	0.0	0.0	0.0	0.0	0.0
DP-6.13					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	00	0.0	0.1
DP-6.14					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.2	0.4	1.2
DP-6.15					
Existing	0.0	0.2	0.3	0.4	0.6
Proposed	0.0	0.2	0.3	0.4	0.6

Table 6 Peak Discharge Rates (cfs) – Segment 7

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-7.1					
Existing	0.0	0.1	0.8	1.4	3.0
Proposed	0.0	1.0	1.5	2.4	4.5
DP-7.2					
Existing	0.0	0.0	0.0	0.2	1.4

	Design Storms				
Design Point	**1-inch**	**2-year**	**10-year**	**25-year**	**100-year**
Proposed	0.0	0.0	0.0	0.1	1.2
DP-7.3					
Existing	0.0	0.0	0.2	0.8	2.9
Proposed	0.0	0.0	0.2	0.8	2.9
DP-7.4					
Existing	0.0	0.0	0.0	0.0	0.1
Proposed	0.0	0.4	0.0	0.0	0.1
DP-7.5					
Existing	0.0	0.1	0.6	1.1	2.1
Proposed	0.0	0.1	0.5	0.8	1.7
DP-7.6					
Existing	0.0	0.0	0.0	0.0	0.3
Proposed	0.0	0.0	0.1	0.3	1.0
DP-7.7					
Existing	0.0	0.0	0.0	0.1	0.4
Proposed	0.0	0.0	0.0	0.0	0.1
DP-7.8					
Existing	0.0	0.0	0.0	0.1	0.6
Proposed	0.0	0.0	0.1	0.2	1.0
DP-7.9					
Existing	0.0	0.0	0.8	2.1	7.2
Proposed	0.0	0.0	0.8	2.1	7.2
DP-7.10					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.0	0.0	0.1
DP-7.11					
Existing	0.0	0.0	0.3	0.8	2.3
Proposed	0.0	0.0	0.3	0.8	2.3
DP-7.12					
Existing	0.0	0.0	0.3	0.7	1.9
Proposed	0.0	0.0	0.3	0.7	1.9

Table 7 Peak Discharge Rates (cfs) – Segment 8

	Design Storms				
Design Point	**1-inch**	**2-year**	**10-year**	**25-year**	**100-year**
DP-8.1					
Existing	0.0	2.6	15.0	26.1	53.4
Proposed	0.0	2.6	14.9	26.0	53.2

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-8.2					
Existing	0.0	0.1	0.4	0.6	1.5
Proposed	0.0	0.2	0.7	1.1	2.1
DP-8.3 Error! Bookmark not defined.					
Existing	0.0	0.0	0.1	0.2	1.0
Proposed	0.0	0.0	0.0	0.1	0.8
DP-8.4					
Existing	0.0	0.0	0.0	0.0	0.0
Proposed	0.0	0.0	0.0	0.0	0.0
DP-8.5					
Existing	0.0	1.5	4.9	7.4	13.2
Proposed	0.0	1.6	5.0	7.5	13.3
DP-8.6					
Existing	0.0	0.0	0.0	0.1	0.4
Proposed	0.0	0.0	0.0	0.0	0.1
DP-8.7					
Existing	0.0	0.2	0.8	1.3	2.4
Proposed	0.0	0.3	1.0	1.5	2.7
DP-8.8					
Existing	0.0	0.4	1.1	1.6	2.7
Proposed	0.0	0.6	1.4	2.0	3.1
DP-8.9					
Existing	0.0	0.0	0.1	0.2	0.8
Proposed	0.0	0.0	0.0	0.0	0.1
DP-8.10					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.1	0.2	0.5
DP-8.11					
Existing	0.0	0.1	0.8	1.4	2.9
Proposed	0.0	0.1	0.9	1.5	3.2

Table 8 Peak Discharge Rates (cfs) – Segment 9

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-9.1					
Existing	0.1	2.1	4.1	5.4	8.0
Proposed	0.2	2.6	4.9	6.4	9.5

Table 9 Peak Discharge Rates (cfs) – Segment 10

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-10.1					
Existing	0.0	1.2	2.5	3.4	5.2
Proposed	0.0	1.4	2.9	3.9	5.9
DP-10.2					
Existing	0.0	0.9	1.9	2.5	3.9
Proposed	0.0	0.7	1.4	1.9	3.0
DP-10.3					
Existing	0.0	1.2	2.6	3.4	5.4
Proposed	0.0	1.4	2.9	3.9	6.0
DP-10.4					
Existing	0.0	0.6	2.2	3.4	6.3
Proposed	0.0	0.7	2.6	4.0	7.4
DP-10.5					
Existing	0.0	0.8	1.7	2.3	3.6
Proposed	0.0	0.8	1.7	2.3	3.6
DP-10.6					
Existing	0.0	0.1	1.9	4.2	10.6
Proposed	0.0	0.3	2.8	5.5	12.4
DP-10.7					
Existing	0.0	0.1	0.2	0.3	0.9
Proposed	0.0	0.1	0.3	0.7	1.9
DP-10.8					
Existing	0.0	0.0	0.0	0.1	0.5
Proposed	0.0	0.0	0.0	0.1	0.5
DP-10.9					
Existing	0.0	1.1	4.3	6.8	12.5
Proposed	0.0	1.3	4.6	7.1	12.9
DP-10.10					
Existing	0.0	0.1	0.2	0.3	0.5
Proposed	0.0	0.1	0.3	0.4	0.6
DP-10.11&10.13					
Existing	0.0	0.9	3.3	5.2	9.7
Proposed	0.0	1.4	4.4	6.7	12.1
DP-10.12					
Existing	0.0	0.1	0.4	0.8	1.8
Proposed	0.0	0.2	0.8	1.3	2.6

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-10.14					
Existing	0.0	0.3	2.0	4.0	9.7
Proposed	0.0	0.3	2.5	4.7	11.7
DP-10.15					
Existing	0.0	0.0	0.1	0.5	2.6
Proposed	0.0	0.0	0.2	0.9	3.7

Table 10 Discharge Volumes (af) – Segment 5

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-5.6					
Existing	0	0	0.011	0.136	0.787
Proposed	0.018	0.072	0.125	0.280	1.004
DP-5.7					
Existing	0	0	0.006	0.077	0.447
Proposed	0	0	0.006	0.079	0.454
DP-5.8					
Existing	0	0	0.014	0.036	0.106
Proposed	0.010	0.042	0.073	0.098	0.171
DP-5.9					
Existing	0	0	0.014	0.034	0.098
Proposed	0	0	0	0.005	0.031
DP-5.10					
Existing	0	0	0.003	0.018	0.090
Proposed	0.003	0.010	0.018	0.033	0.103
DP-5.11					
Existing	0	0	0	0.003	0.018
Proposed	0	0	0	0.003	0.018
DP-5.12					
Existing	0.001	0.053	0.362	0.664	1.487
Proposed	0.001	0.041	0.317	0.594	1.360
DP-5.13					
Existing	0.001	0.011	0.082	0.158	0.373
Proposed	0.011	0.093	0.190	0.283	0.531
DP-5.14					
Existing	0.001	0.006	0.033	0.064	0.152
Proposed	0.007	0.028	0.063	0.094	0.184
DP-5.15					
Existing	0.001	0.009	0.032	0.052	0.103

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
Proposed	0.001	0.006	0.019	0.031	0.061
DP-5.16					
Existing	0	0	0.109	0.286	0.865
Proposed	0	0	0.110	0.289	0.874
DP-5.17					
Existing	0	0.305	1.306	2.175	4.396
Proposed	0	0.304	1.304	2.171	4.388
DP-5.18					
Existing	0	0.018	0.295	0.606	1.511
Proposed	0.008	0.050	0.528	0.666	1.590
DP-5.19					
Existing	0	0	0.006	0.017	0.059
Proposed	0	0	0.001	0.007	0.035
DP-5.20					
Existing	0	0	0.001	0.009	0.053
Proposed	0.009	0.034	0.054	0.075	0.144
DP-5.21					
Existing	0	0	0.004	0.011	0.034
Proposed	0.005	0.019	0.031	0.003	0.067

Table 11 Discharge Volumes (af) – Segment 6

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.1					
Existing	0	0	0.01	0.034	0.093
Proposed	0	0	0.008	0.022	0.067
DP-6.2					
Existing	0	0	0.002	0.010	0.045
Proposed	0	0	0	0.014	0.090
DP-6.3					
Existing	0	0.001	0.022	0.045	0.113
Proposed	0	0.001	0.021	0.043	0.108
DP-6.4					
Existing	0	0.036	0.176	0.301	0.628
Proposed	0	0.036	0.176	0.301	0.628
DP-6.5					
Existing	0	0	0	0.001	0.004
Proposed	0	0	0	0.001	0.004

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.6					
Existing	0	0.017	0.213	0.430	1.057
Proposed	0	0.023	0.241	0.482	1.160
DP-6.7					
Existing	0	0.001	0.131	0.304	0.840
Proposed	0	0	0.109	0.267	0.768
DP-6.8					
Existing	0	0	0.013	0.069	0.303
Proposed	0	0	0.013	0.069	0.303
DP-6.9					
Existing	0	0.001	0.022	0.048	0.122
Proposed	0	0.001	0.022	0.047	0.121
DP-6.10					
Existing	0	0	0.001	0.005	0.020
Proposed	0	0	0	0.003	0.015
DP-6.11					
Existing	0	0	0	0.002	0.006
Proposed	0	0	0	0.001	0.003
DP-6.12					
Existing	0	0	0	0.002	0.008
Proposed	0	0	0	0.001	0.006
DP-6.13					
Existing	0	0	0.002	0.008	0.033
Proposed	0	0	0	0.004	0.020
DP-6.14					
Existing	0	0	0.004	0.013	0.047
Proposed	0	0	0.033	0.060	0.133
DP-6.15					
Existing	0.001	0.012	0.022	0.030	0.045
Proposed	0.001	0.012	0.022	0.029	0.044

Table 12 Discharge Volumes (af) – Segment 7

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-7.1					
Existing	0	0.026	0.099	0.161	0.318
Proposed	0	0.053	0.163	0.248	0.451
DP-7.2					
Existing	0	0	0.027	0.077	0.247

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
Proposed	0	0	0.021	0.066	0.222
DP-7.3					
Existing	0	0.004	0.090	0.192	0.494
Proposed	0	0.004	0.090	0.192	0.494
DP-7.4					
Existing	0	0	0.001	0.003	0.010
Proposed	0	0	0.001	0.003	0.009
DP-7.5					
Existing	0	0.026	0.083	0.129	0.241
Proposed	0	0.018	0.065	0.104	0.201
DP-7.6					
Existing	0	0	0.004	0.016	0.062
Proposed	0	0.001	0.022	0.048	0.123
DP-7.7					
Existing	0	0	0.006	0.018	0.063
Proposed	0	0	0	0.005	0.031
DP-7.8					
Existing	0	0	0.010	0.030	0.102
Proposed	0	0.001	0.027	0.06	0.162
DP-7.9					
Existing	0	0.014	0.183	0.364	0.881
Proposed	0	0.014	0.183	0.364	0.881
DP-7.10					
Existing	0	0	0.004	0.010	0.029
Proposed	0	0	0	0.003	0.014
DP-7.11					
Existing	0	0.007	0.063	0.118	0.273
Proposed	0	0.007	0.063	0.118	0.273
DP-7.12					
Existing	0	0.007	0.054	0.100	0.224
Proposed	0	0.007	0.054	0.100	0.224

Table 13 Discharge Volumes (af) – Segment 8

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-8.1					
Existing	0	0.517	1.813	2.878	5.518
Proposed	0	0.514	1.805	2.864	5.489

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-8.2					
Existing	0	0.018	0.074	0.133	0.306
Proposed	0	0.042	0.120	0.192	0.415
DP-8.3					
Existing	0	0.001	0.041	0.099	0.283
Proposed	0	0.001	0.009	0.036	0.205
DP-8.4					
Existing	0	0	0	0	0
Proposed	0	0	0	0	0
DP-8.5					
Existing	0	0.185	0.495	0.734	1.305
Proposed	0	0.188	0.497	0.728	1.295
DP-8.6					
Existing	0	0	0.012	0.038	0.128
Proposed	0	0	0.001	0.011	0.065
DP-8.7					
Existing	0	0.031	0.090	0.136	0.246
Proposed	0	0.039	0.105	0.156	0.273
DP-8.8					
Existing	0	0.065	0.155	0.220	0.366
Proposed	0.002	0.088	0.192	0.264	0.423
DP-8.9					
Existing	0	0.001	0.024	0.051	0.132
Proposed	0	0	0.001	0.008	0.044
DP-8.10					
Existing	0	0	0.003	0.008	0.023
Proposed	0	0.004	0.015	0.024	0.046
DP-8.11					
Existing	0	0.021	0.075	0.121	0.234
Proposed	0	0.024	0.084	0.133	0.255

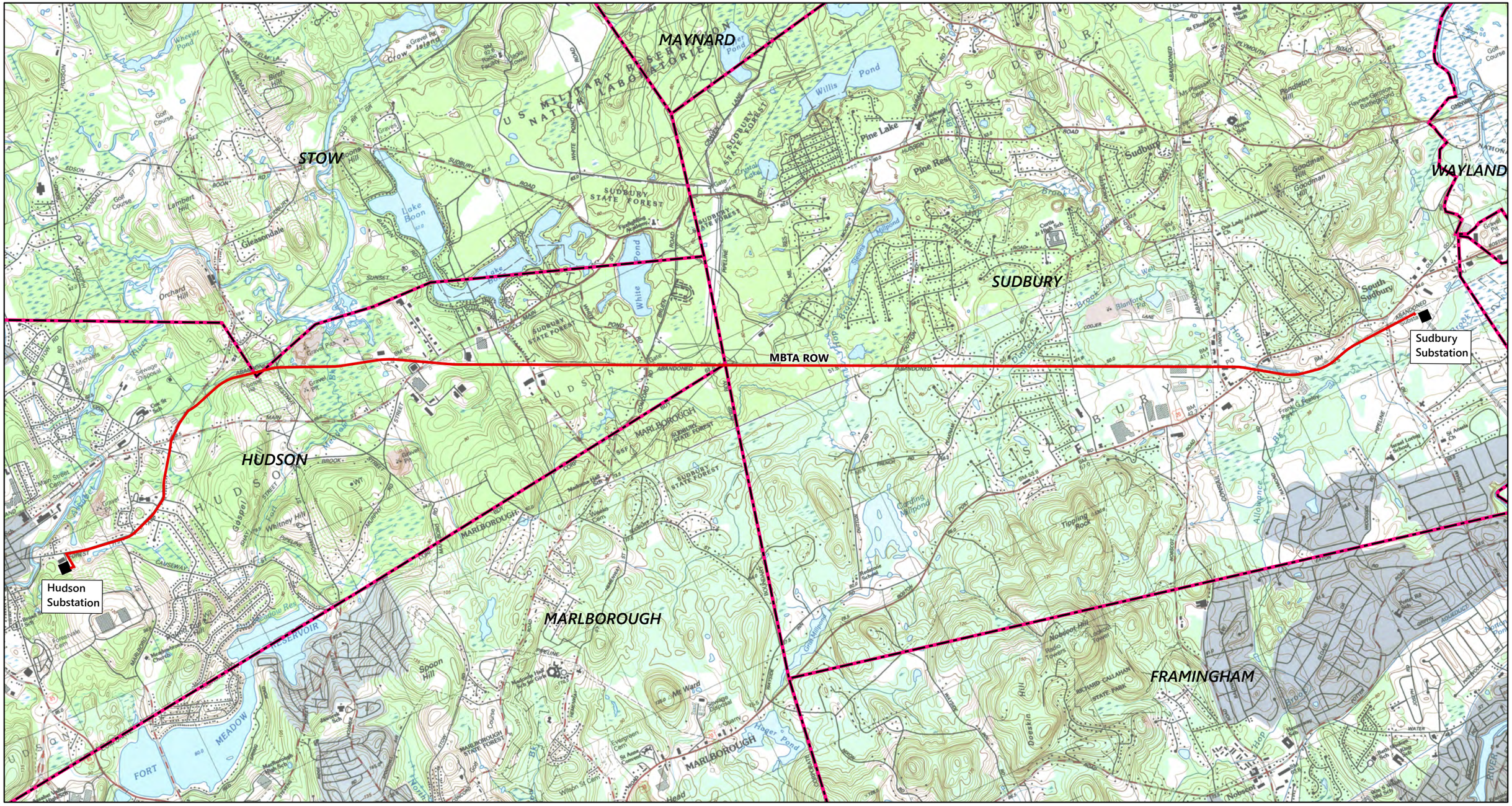
Table 14 Discharge Volumes (af) – Segment 9

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-9.1					
Existing	0.024	0.312	0.602	0.793	1.207
Proposed	0.028	0.326	0.620	0.813	1.230

Table 15 Discharge Volumes (af) – Segment 10

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-10.1					
Existing	0.006	0.126	0.258	0.347	0.543
Proposed	0.008	0.148	0.298	0.399	0.619
DP-10.2					
Existing	0.003	0.079	0.160	0.214	0.332
Proposed	0.001	0.058	0.120	0.163	0.256
DP-10.3					
Existing	0.005	0.111	0.230	0.310	0.488
Proposed	0.006	0.116	0.237	0.319	0.498
DP-10.4					
Existing	0	0.085	0.238	0.354	0.627
Proposed	0	0.085	0.238	0.354	0.627
DP-10.5					
Existing	0.004	0.094	0.195	0.264	0.415
Proposed	0.004	0.094	0.195	0.264	0.415
DP-10.6 Error! Bookmark not defined.					
Existing	0	0.056	0.288	0.500	1.062
Proposed	0	0.074	0.317	0.550	1.180
DP-10.7					
Existing	0	0.009	0.041	0.0863	0.214
Proposed	0	0.010	0.052	0.091	0.193
DP-10.8					
Existing	0	0	0.007	0.023	0.076
Proposed	0	0	0.007	0.023	0.076
DP-10.9					
Existing	0	0.123	0.353	0.529	0.974
Proposed	0	0.133	0.370	0.550	0.975
DP-10.10					
Existing	0	0.009	0.018	0.025	0.042
Proposed	0.001	0.010	0.021	0.028	0.043
DP-10.11&10.13					
Existing	0	0.130	0.358	0.534	1.037
Proposed	0.001	0.115	0.350	0.529	0.950
DP-10.12					
Existing	0	0.018	0.074	0.126	0.297

	Design Storms				
Design Point	**1-inch**	**2-year**	**10-year**	**25-year**	**100-year**
Proposed	0	0.027	0.087	0.135	0.267
DP-10.14					
Existing	0	0.077	0.352	0.614	1.320
Proposed	0	0.046	0.318	0.579	1.282
DP-10.15					
Existing	0	0	0.055	0.143	0.619
Proposed	0	0.003	0.088	0.199	0.538



Project

Substation Location

Municipal Boundary

EVERSOURCE ENERGY

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

N

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

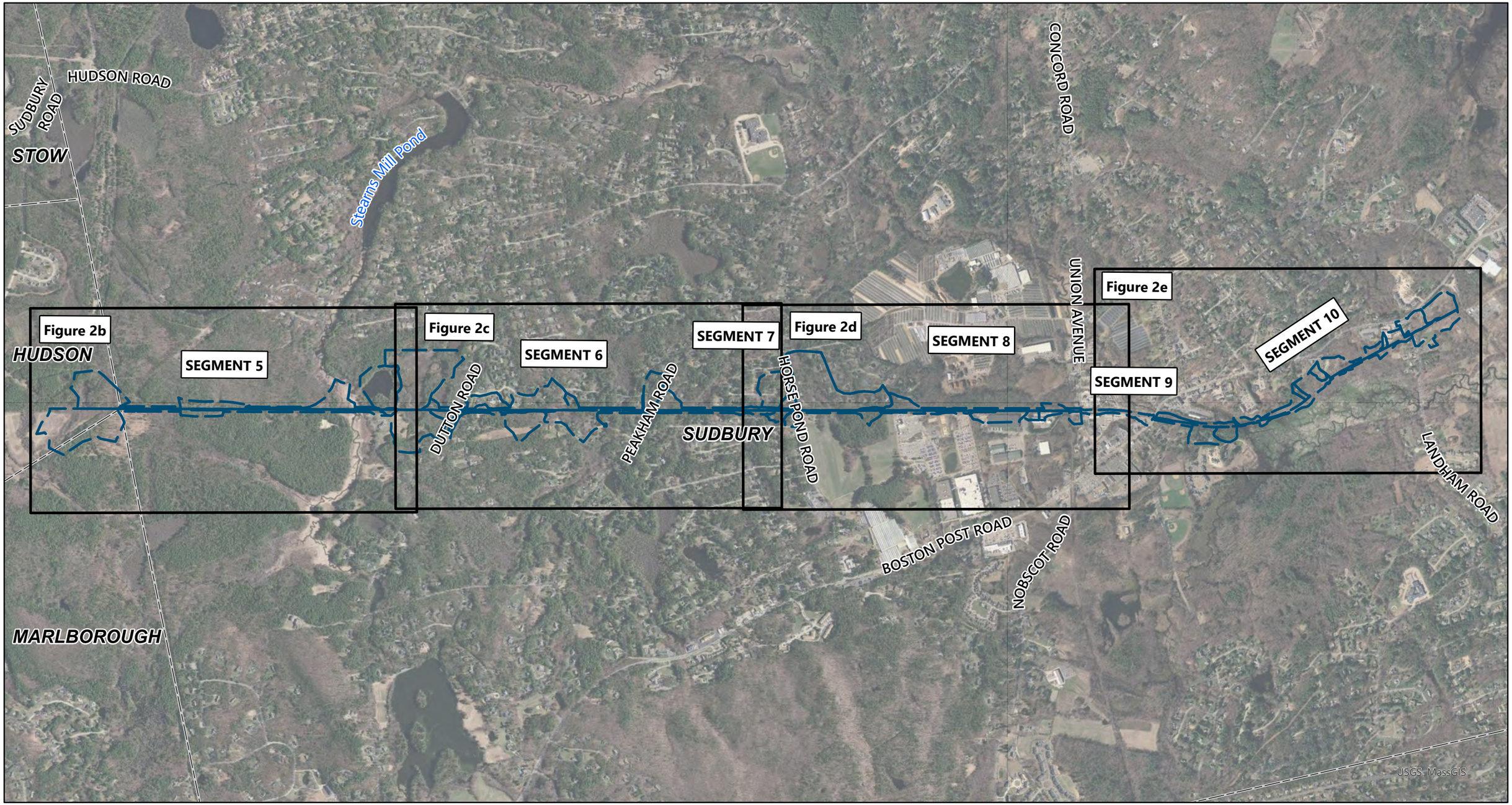
Figure 1: Locus Map (USGS)

Source:
MassGIS, VHB

2/21/2020

0 1,500 3,000 Feet

vhb



Map Boundaries

Existing Drainage Areas

Massachusetts Municipalities

N

Source:
MassGIS, VHB

0 1,500 3,000 Feet

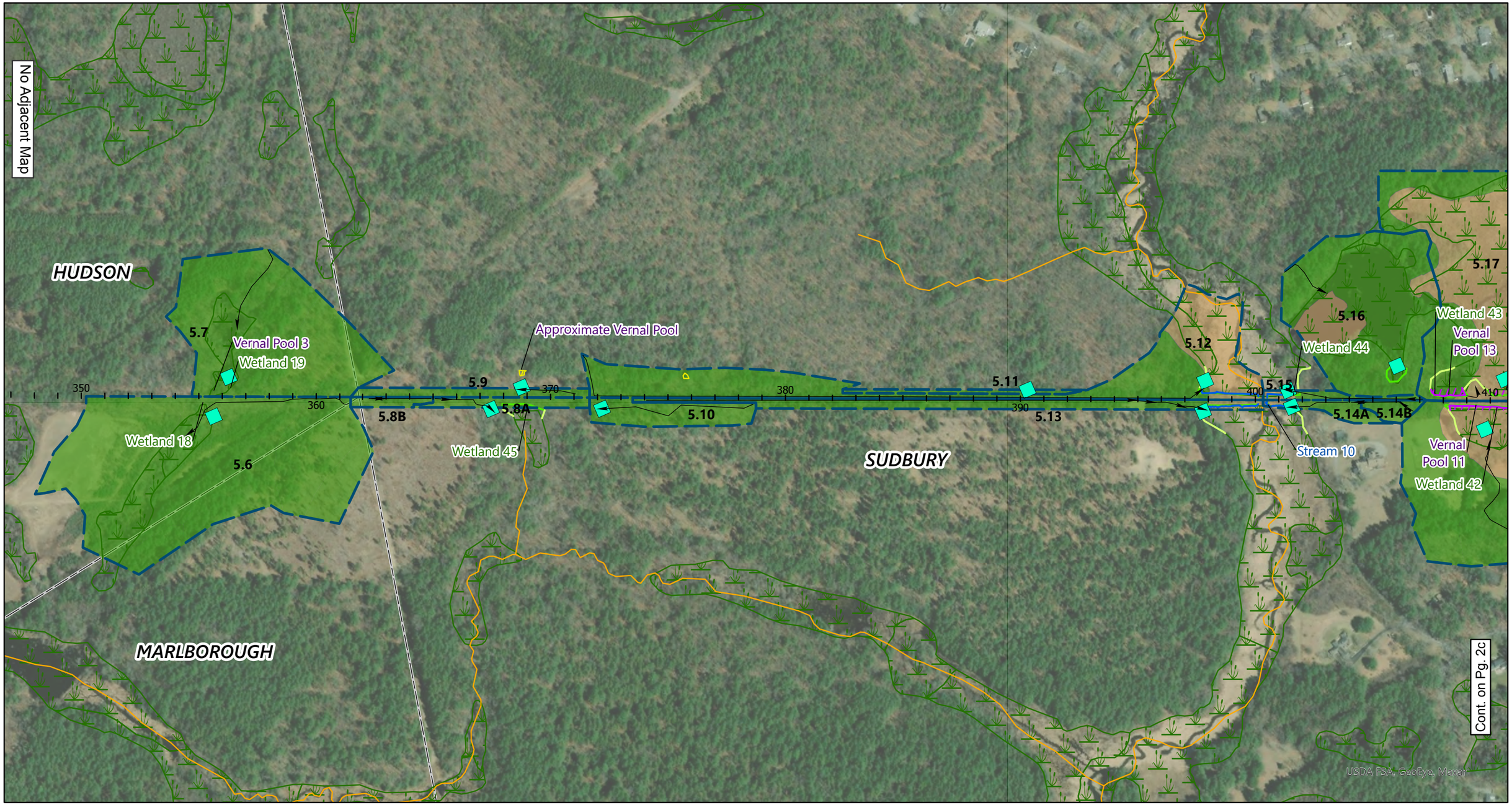
EVERSOURCE ENERGY

Sudbury-Hudson Overall Transmission Reliability Project

Figure 2a: Existing Drainage Areas

Date: 10/19/2020

vhb



MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydrologic Soil Group

A

A/D

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 2b: Existing Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb

MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydrologic Soil Group

A

A/D

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

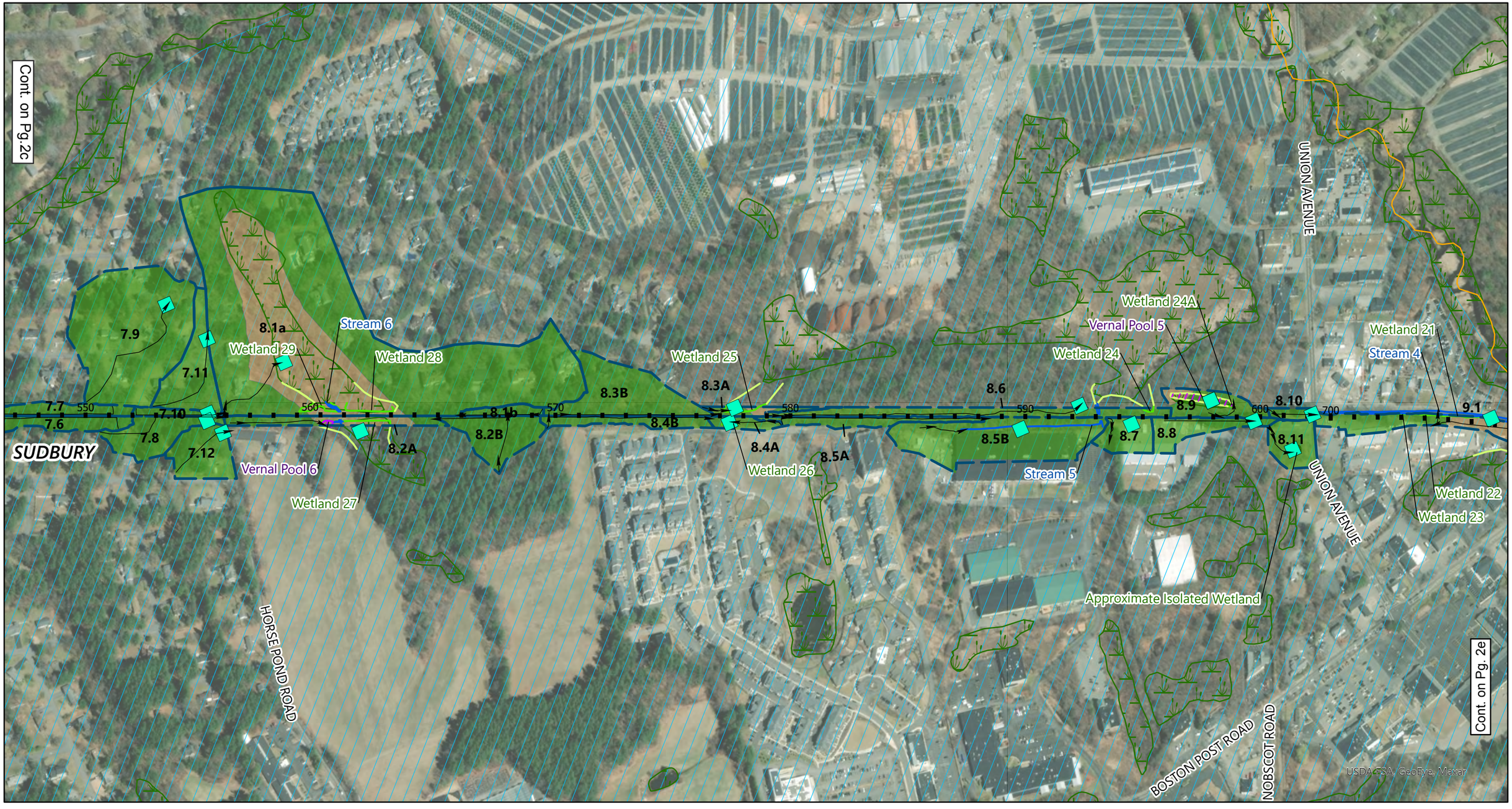
Sudbury-Hudson Transmission Reliability Project

Figure 2c: Existing Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydrologic Soil Group

A

A/D

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

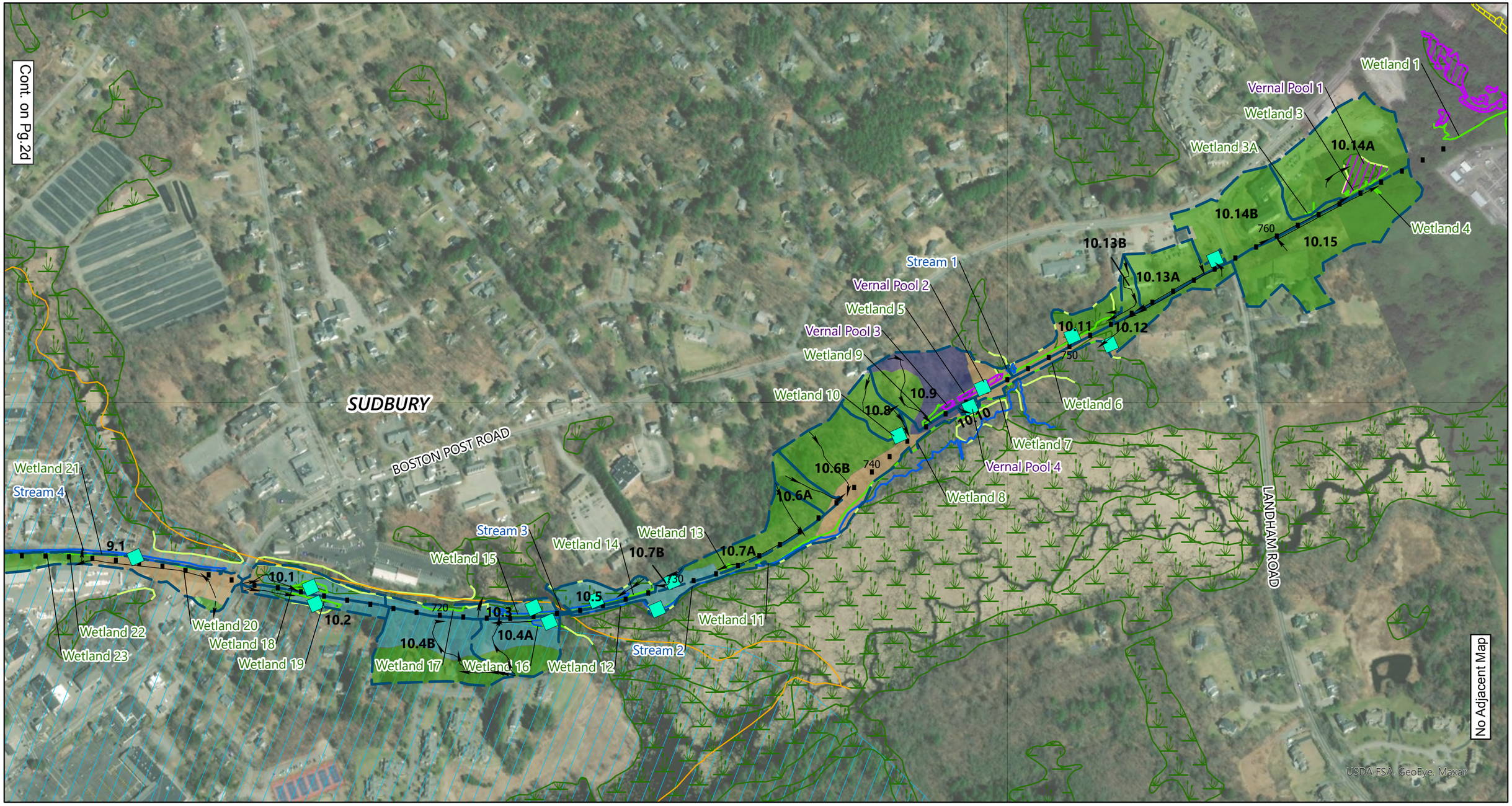
Sudbury-Hudson Transmission Reliability Project

Figure 2d: Existing Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydrologic Soil Group

A

A/D

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

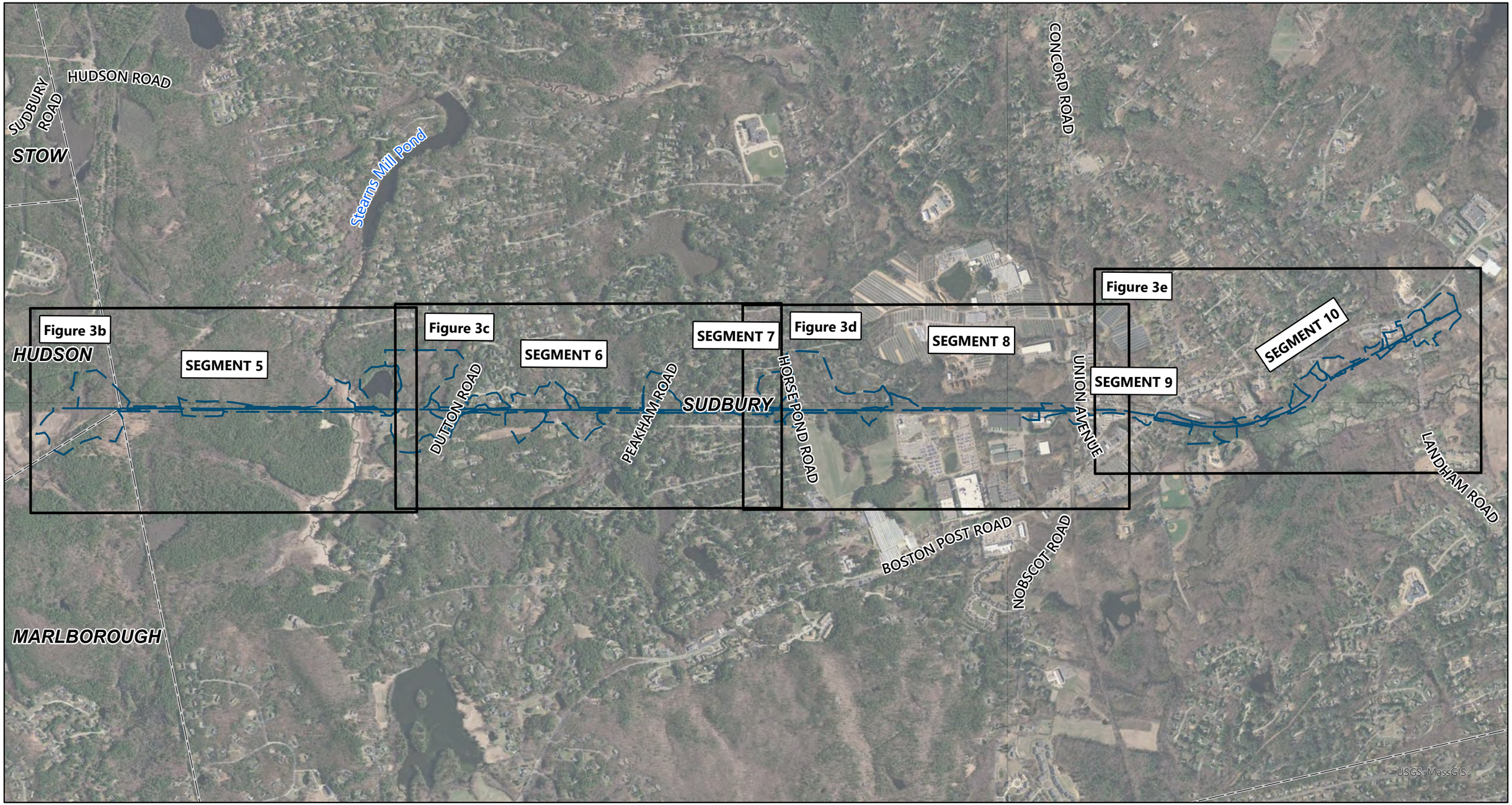
Sudbury-Hudson Transmission Reliability Project

Figure 2e: Existing Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



Map Boundaries

Proposed Drainage Areas

Massachusetts Municipalities

N

Source:
MassGIS, VHB

0 1,500 3,000 Feet

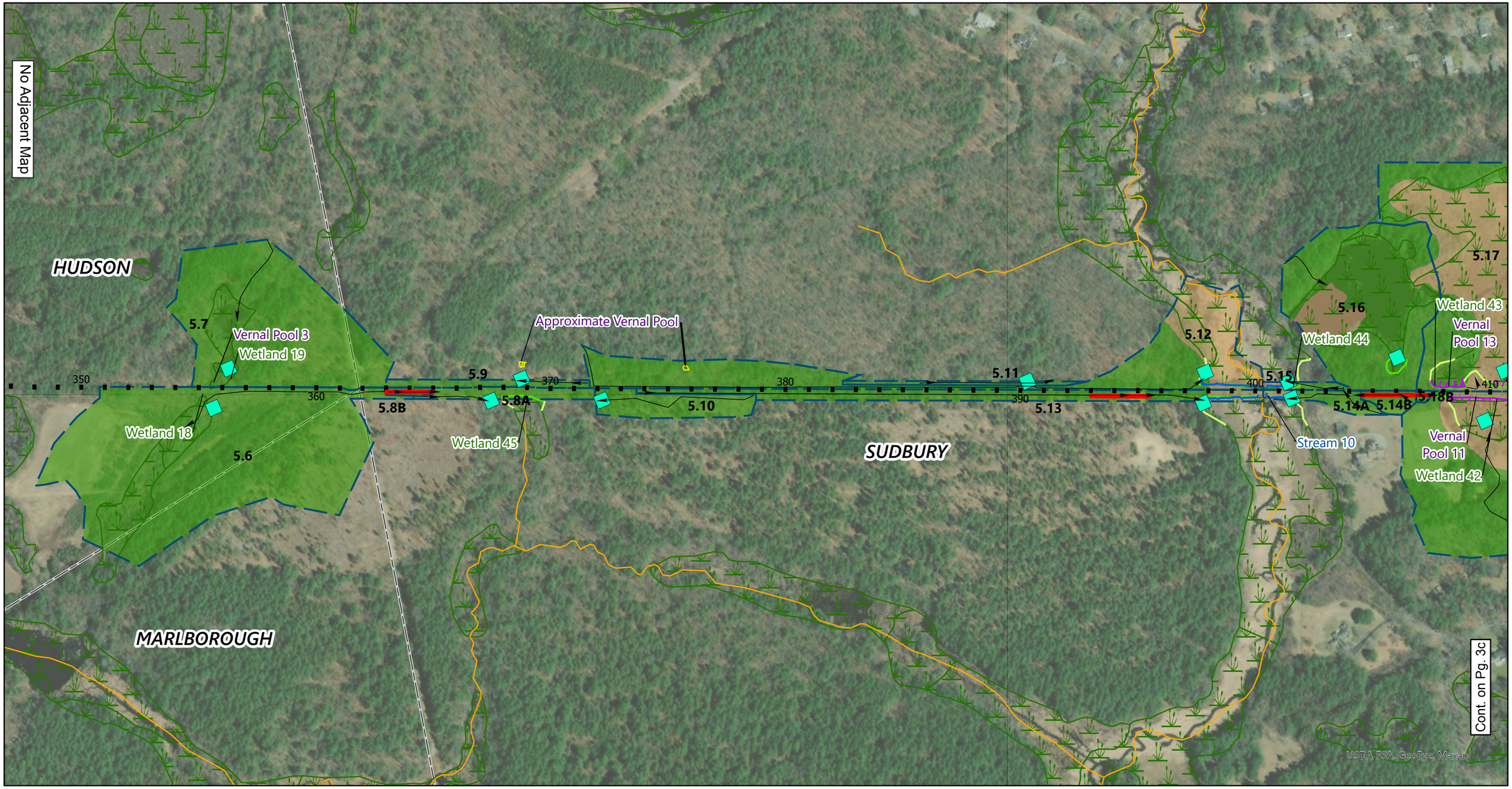
EVERSOURCE ENERGY

Sudbury-Hudson Overall Transmission Reliability Project

Figure 3a: Proposed Drainage Areas

Date: 10/19/2020

vhb



MA DFW Coldwater Fisheries Resources

Delineated Wetland Edge

Approximate Wetland Edge

Delineated Top of Bank

Delineated Vernal Pool Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Proposed Drainage Areas

Massachusetts Municipalities

Design Point

Time of Concentration

Area of Increased Infiltration

Hydrologic Soil Group

A

A/D

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 3b: Proposed Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb

MA DFW Coldwater Fisheries Resources

Delineated Wetland Edge

Approximate Wetland Edge

Delineated Top of Bank

Delineated Vernal Pool Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Proposed Drainage Areas

Massachusetts Municipalities

Design Point

Time of Concentration

Area of Increased Infiltration

Hydrologic Soil Group

A

A/D

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

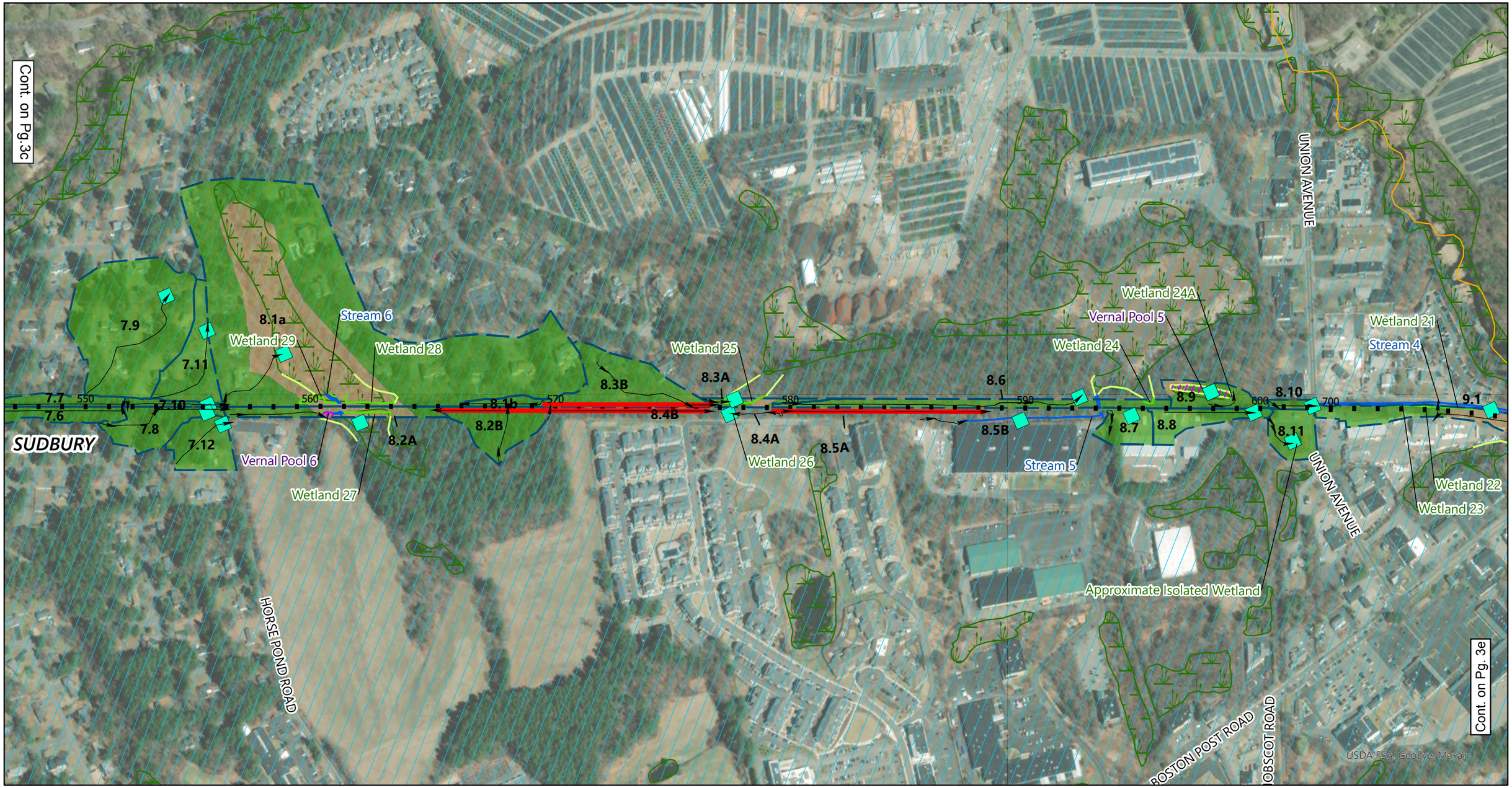
Sudbury-Hudson Transmission Reliability Project

Figure 3c: Proposed Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Wetland Edge

Approximate Wetland Edge

Delineated Top of Bank

Delineated Vernal Pool Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Proposed Drainage Areas

Massachusetts Municipalities

Design Point

Time of Concentration

Area of Increased Infiltration

Hydrologic Soil Group

A

A/D

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

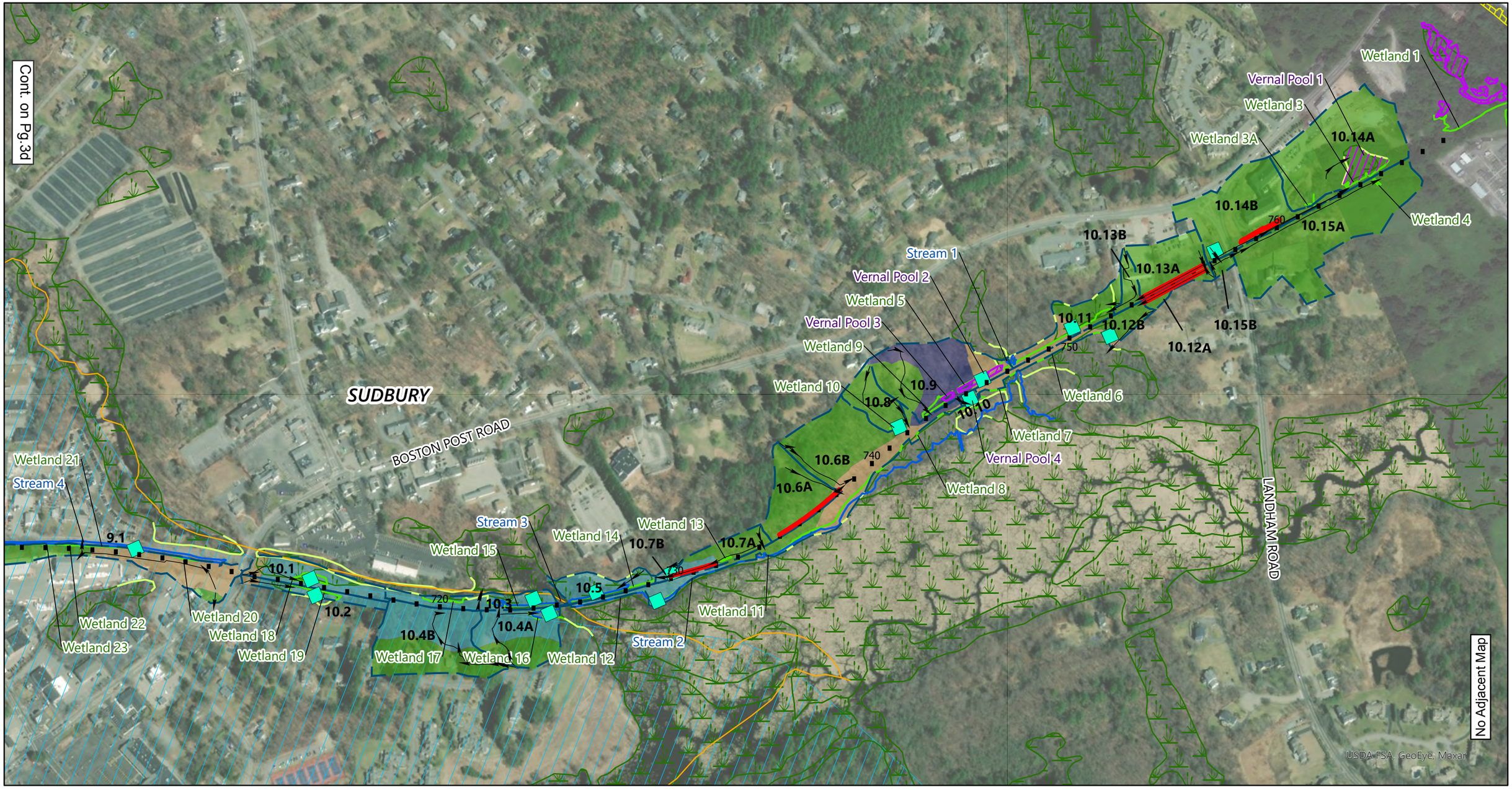
Sudbury-Hudson Transmission Reliability Project

Figure 3d: Proposed Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources
Delineated Wetland Edge
Approximate Wetland Edge
Delineated Top of Bank
Delineated Vernal Pool Edge

Vernal Pool
Approximate Vernal Pool
Approximate Isolated Wetland
Approximate Wetland Resource Areas (From MassGIS)
DEP Approved Zone II

Project Stationing
Proposed Drainage Areas
Massachusetts Municipalities
Design Point
Time of Concentration

Area of Increased Infiltration

Hydrologic Soil Group
A
A/D
B/D
C

N

0 400 800 Feet

EVERSOURCE ENERGY

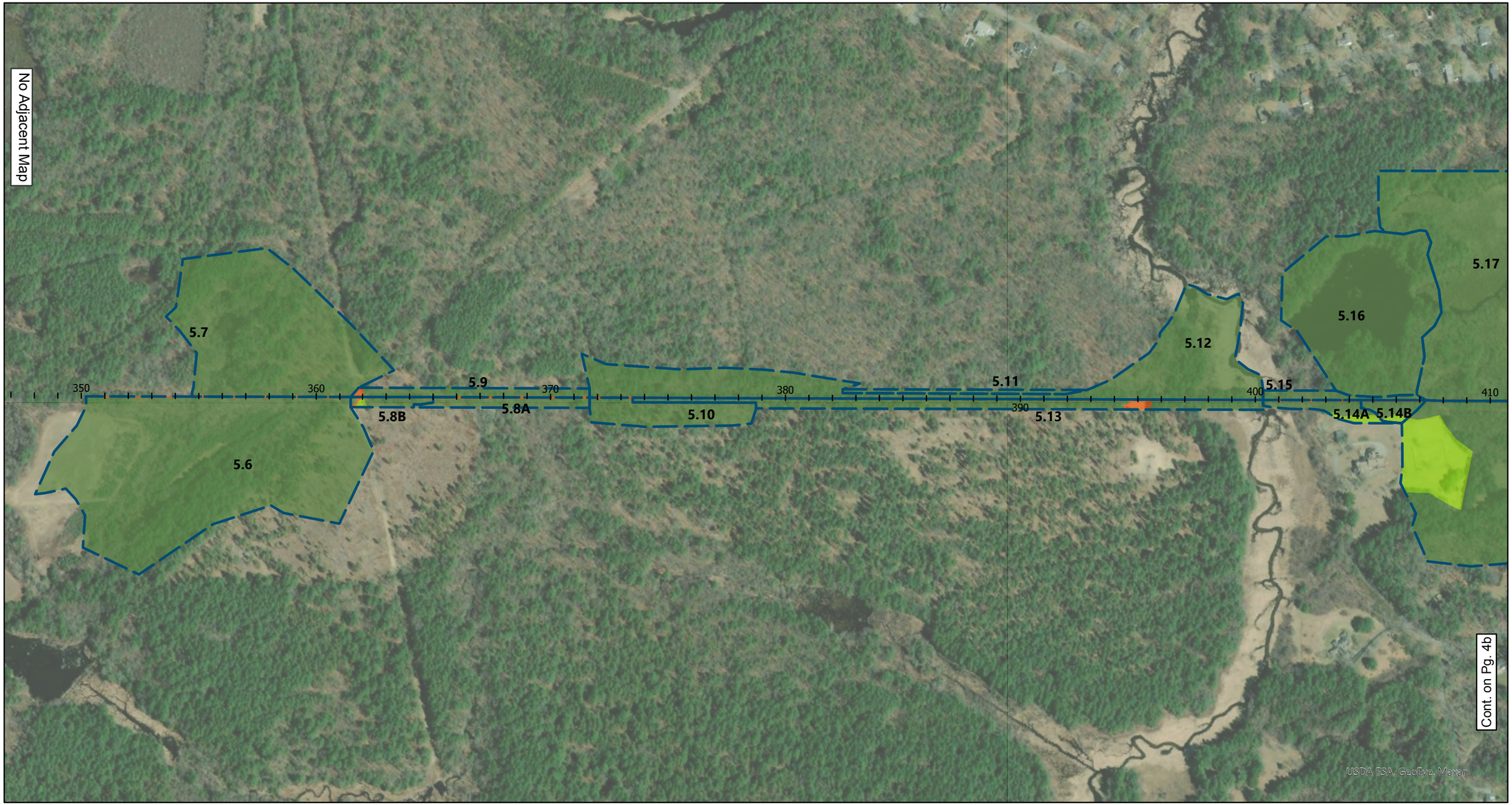
Sudbury-Hudson Transmission Reliability Project

Figure 3e: Proposed Drainage Areas

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Brush - Poor
- Grass - Good
- Gravel Road
- Paved Parking
- Paved Roads with Curb
- Roofs
- Water Surface
- Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

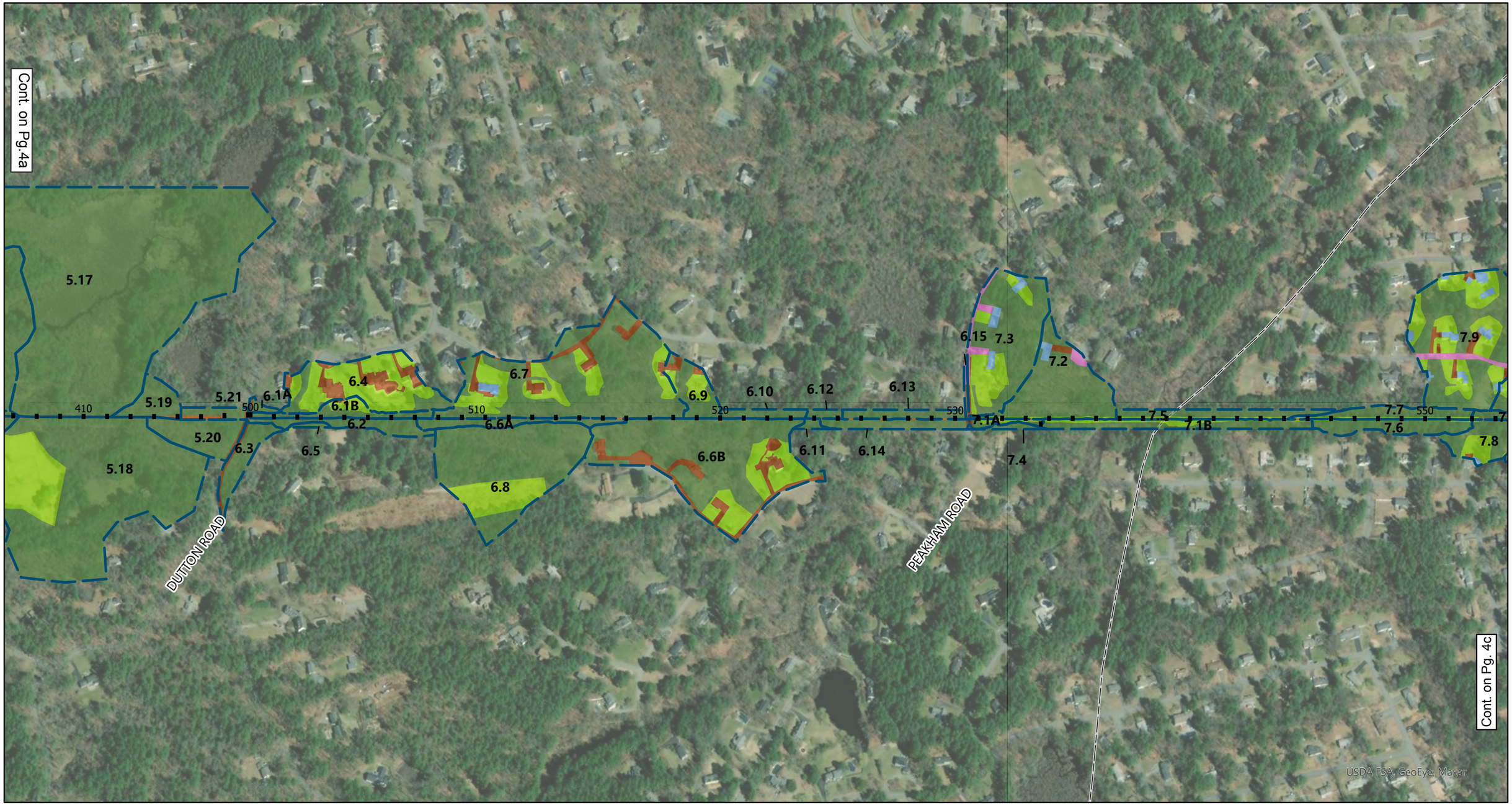
Sudbury-Hudson Transmission Reliability Project

Figure 4a: Existing Cover Type

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

Brush - Poor

Grass - Good

Gravel Road

Paved Parking

Paved Roads with Curb

Roofs

Water Surface

Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

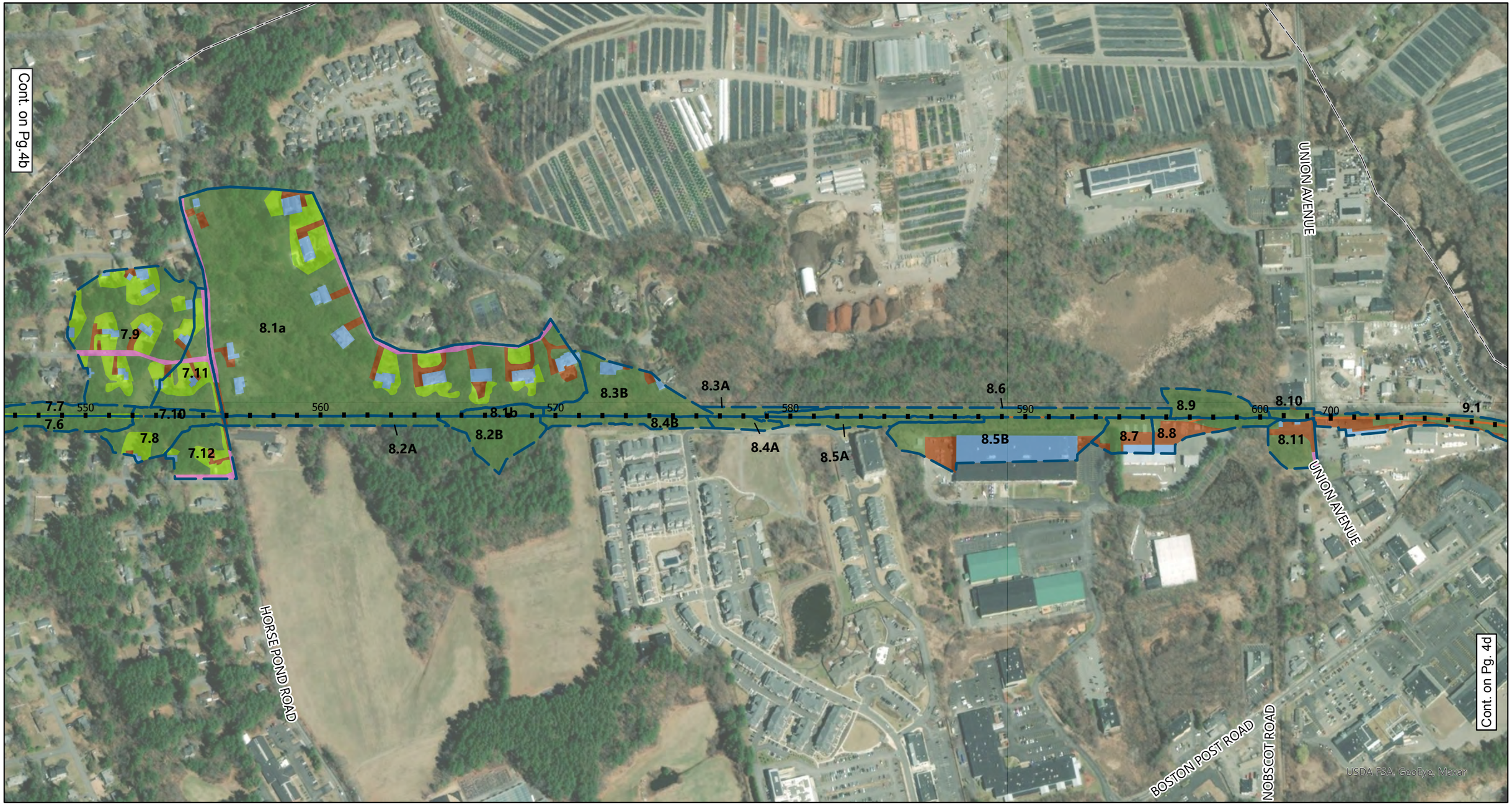
Sudbury-Hudson Transmission Reliability Project

Figure 4b: Existing Cover Type

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

Brush - Poor

Grass - Good

Gravel Road

Paved Parking

Paved Roads with Curb

Roofs

Water Surface

Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

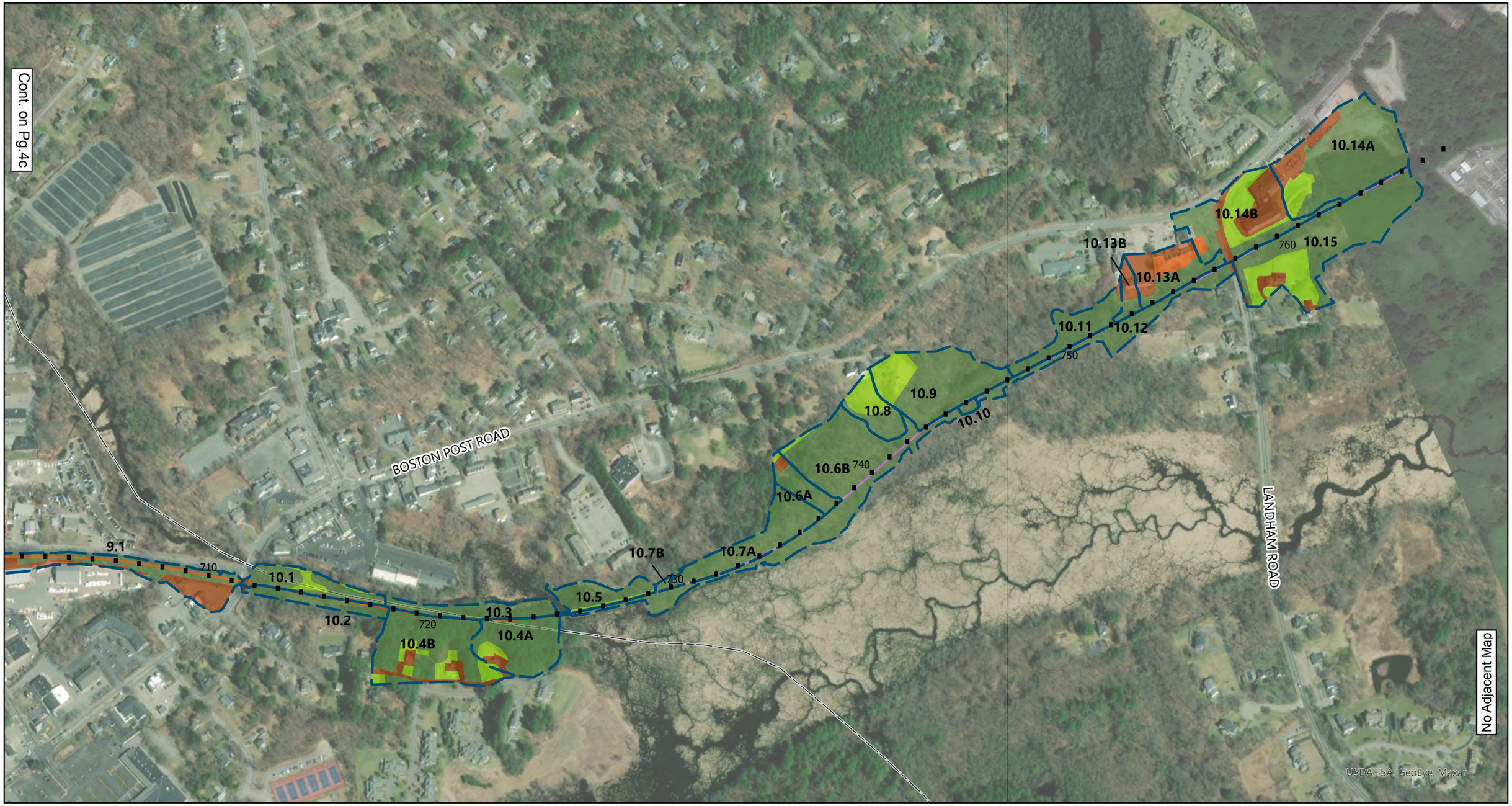
Sudbury-Hudson Transmission Reliability Project

Figure 4c: Existing Cover Type

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

Brush - Poor

Grass - Good

Gravel Road

Paved Parking

Paved Roads with Curb

Roofs

Water Surface

Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

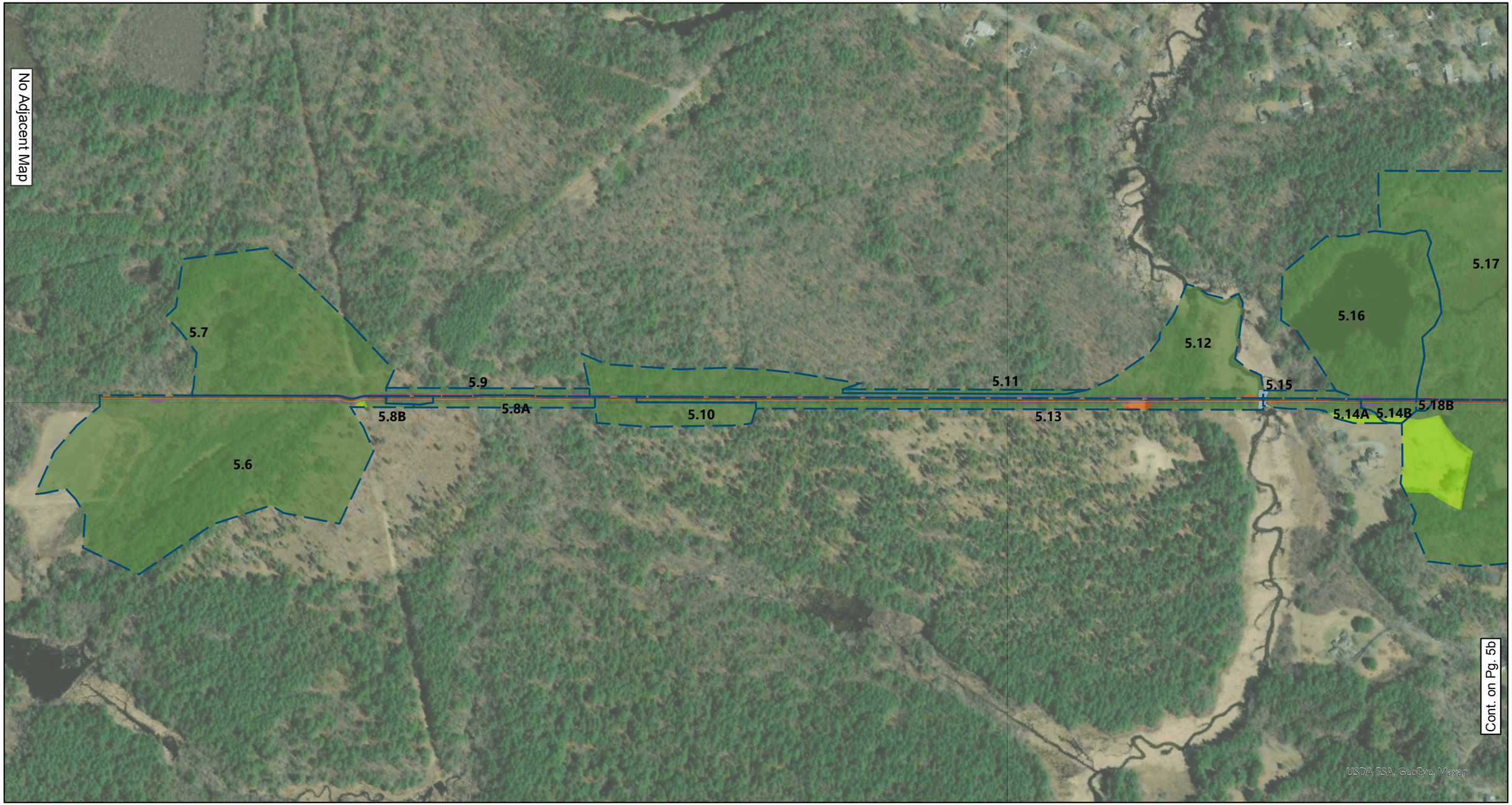
Sudbury-Hudson Transmission Reliability Project

Figure 4d: Existing Cover Type

Date: 10/19/2020

Source:
MassGIS, VHB

vhb



Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Grass - Good
- Gravel Road
- Meadow
- Paved Parking
- Paved Roads with Curb
- Roofs
- Water
- Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 5a: Proposed Cover Type

Date: 10/21/2020

Source:
MassGIS, VHB

vhb

Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

Grass - Good

Gravel Road

Meadow

Paved Parking

Paved Roads with Curb

Roofs

Water

Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

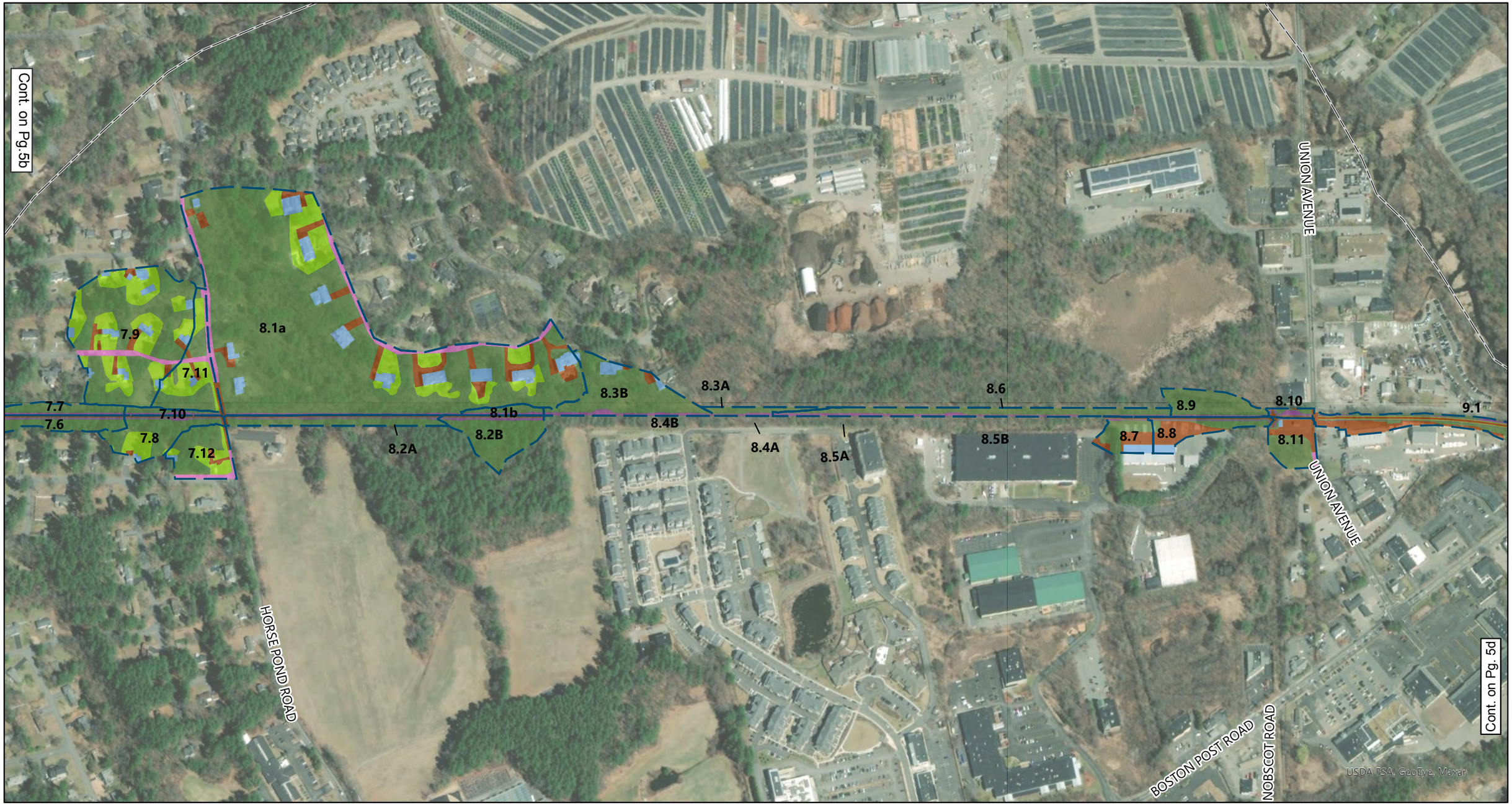
Sudbury-Hudson Transmission Reliability Project

Figure 5b: Proposed Cover Type

Date: 10/21/2020

Source:
MassGIS, VHB

vhb



Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

Grass - Good

Gravel Road

Meadow

Paved Parking

Paved Roads with Curb

Roofs

Water

Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

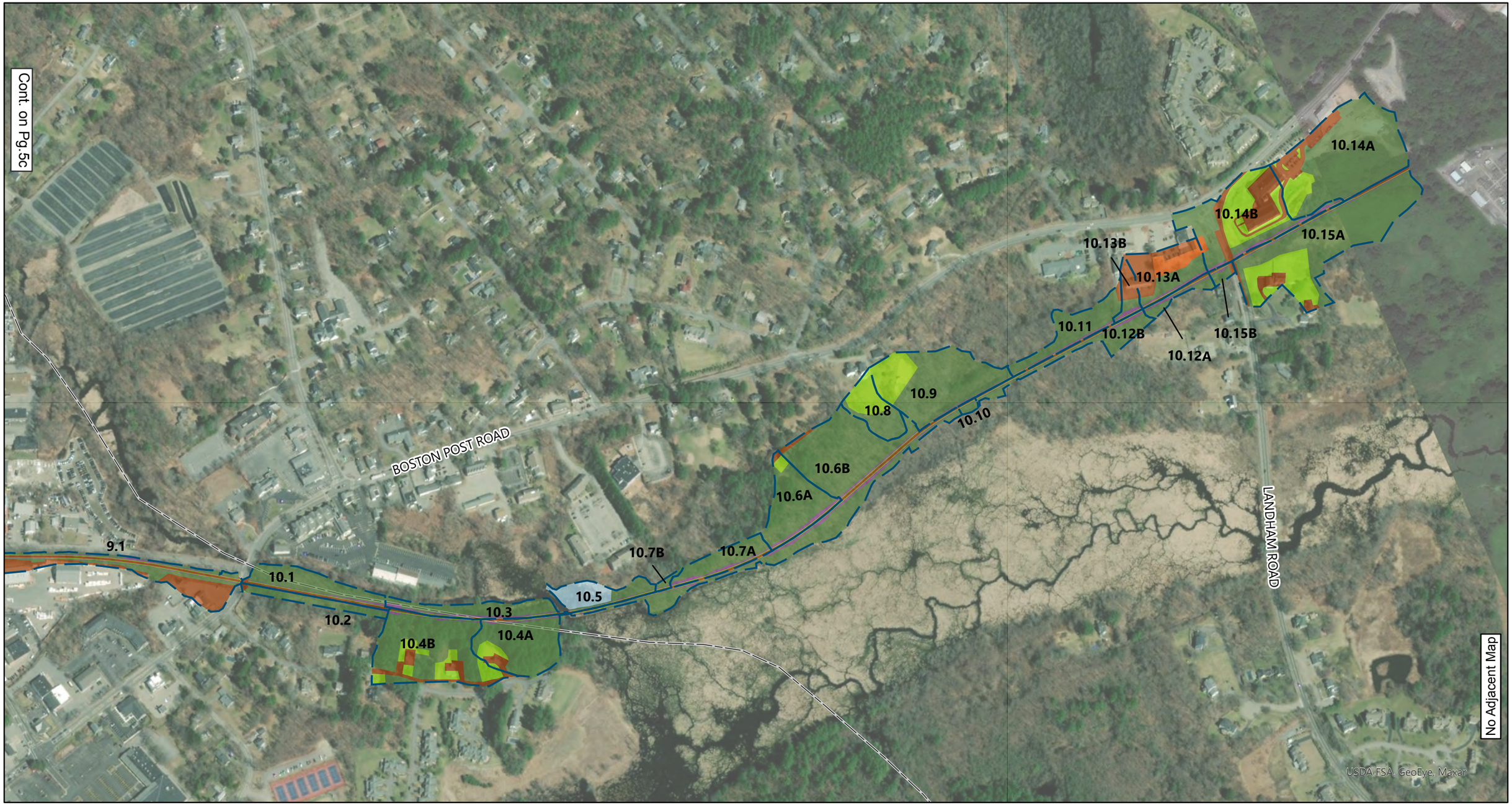
Sudbury-Hudson Transmission Reliability Project

Figure 5c: Proposed Cover Type

Date: 10/21/2020

Source:
MassGIS, VHB

vhb



Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Grass - Good
- Gravel Road
- Meadow
- Paved Parking
- Paved Roads with Curb
- Roofs
- Water
- Woods - Good

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 5d: Proposed Cover Type

Date: 10/21/2020

Source:
MassGIS, VHB

vhb

2

Compliance with Massachusetts Stormwater Management Standards

As required by Section 8.0(A)(1) of the Sudbury Bylaw Regulations, and as demonstrated below, the proposed Project complies with the performance standards in the most recent MassDEP Stormwater Management Standards for footpaths, bike paths, and other paths for pedestrians and/or nonmotorized vehicle access. The DEP Checklist for the Stormwater Report is provided in Appendix G.

The stormwater management system was designed for the final condition of the Project, which is a 10-foot-wide paved bike path and incorporates areas of increased infiltration and conveyance swales to promote recharge. Stormwater discharging from the bike path to critical areas (CFRs and Zone IIs) is conveyed to areas of increased infiltration. The characteristics of the areas of increased infiltration most closely match an infiltration basin or infiltration trench Best Management Practice ("BMP") because they detain, treat, and infiltrate stormwater. In addition to areas of increased infiltration, conveyance swales are also proposed to convey and treat stormwater. These conveyance swales will provide stormwater detention, infiltration, and treatment. However, although these features provide benefits, this report did not account for the recharge and water quality treatment from these swales because they are not considered recharge and treatment BMPs by MassDEP's Stormwater Management Handbook.

Stormwater from the bike path will also discharge to adjacent vegetated areas where stormwater will naturally infiltrate under the majority of storm events. This approach is referred to as an "impervious area disconnection," which is the redirection of stormwater from impervious cover (i.e., paved bike path) to an area of pervious cover (i.e., vegetated area) to provide filtering and infiltration. This non-structural BMP will provide peak rate attenuation, recharge and water quality treatment. The benefit of this feature is supported by EPA guidance, which notes pollutant and volume reductions from an impervious to pervious area ratio as little as 8:1 with no slope requirements.

The stormwater management design provides stormwater treatment and recharge throughout the Project area and targets additional treatment at critical areas while reducing disturbance to existing vegetation, limiting impacts to buffer zones and resource areas, and providing a manageable system for long-term maintenance. The proposed measures for this Project also exceed what is typically incorporated into rail trail projects, especially since stormwater runoff from bike paths is a limited source of pollutants such as total suspended solids and phosphorus.

Under 310 CMR 10.05(6)(m)6, the Stormwater Management Standards apply to the maximum extent practicable to bike paths. As required by 310 CMR 10.05(6)(o), all reasonable efforts were made to meet Standards 2, 3, 4, and 6. (Standard 5 does not apply.) A complete evaluation was made of possible stormwater management measures including environmentally sensitive site design and low impact development techniques that minimize land disturbance and impervious surfaces, structural stormwater best management practices, pollution prevention, erosion and sedimentation control and proper operation and maintenance of stormwater best management practices; and the highest practicable level of stormwater management is being implemented. The Project fully meets Standards 1, 8, and 9. See below for further descriptions regarding the Project's compliance with each standard.

Standard 1: No New Untreated Discharges or Erosion to Wetlands

The Project fully complies with Standard 1.

The existing drainage patterns will be maintained where feasible and all proposed Project stormwater outlets and conveyances were designed to not cause erosion or scour to wetlands or receiving waters or result in new untreated discharge points. The outlet from the closed drainage system was designed with a flared end section and stone protection to dissipate discharge velocity. Overflows from BMPs that impound stormwater were designed with vegetation to protect down-gradient areas from erosion. Velocities and shear stresses were calculated, and swales were appropriately designed to reduce the potential for erosion, as necessary in accordance with Federal Highway Administration ("FHWA") Hydraulic Engineering Circular Number 15 ("HEC-15"). Additionally, energy dissipation bowls and rip rap aprons were provided at overflow locations of BMPs with higher flows in accordance with Federal Highway Administration ("FHWA") Hydraulic Engineering Circular Number 14 ("HEC-14"). The 25-year event was used to calculate the effects of erosion and scour throughout the Project in accordance with the Massachusetts Department of

Transportation's ("MassDOT") Project Development and Design Guide. Computations and supporting information are provided in Appendix A.

Standard 2: Peak Rate Attenuation

The Project complies with Standard 2 to the maximum extent practicable for the following reasons:

- In order to construct additional structural stormwater BMPs significant earthwork, vegetation removal, and possible impacts to wetland resource areas would be necessary. The design avoided these additional impacts where there would be negligible peak rate attenuation benefits.
- The Project team evaluated several other structural BMP options in order to make all reasonable efforts to fully meet Standard 2. This included a trench along the downslope side of the path and subsurface detention/infiltration beneath the bike path. These were determined to be impractical due to long-term maintenance requirements, additional vegetation removal and wetland impacts, engineering challenges, costs, and negligible benefits in comparison to the proposed stormwater management design.

As outlined in the Stormwater Management Bylaw Regulations for the Town of Sudbury, the rainfall-runoff response of the Site under the existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100 years, with rainfall amounts of 3.2", 4.8", 6.0", and 8.6", respectively. A rainfall depth of one inch was also evaluated, as outlined by the Stormwater Management Bylaw Regulations for the Town of Sudbury. The results of the analysis are summarized in the following bullet points and in Tables 3 to 8 below.

- Seven design points exhibit an increase in peak discharge rates between the existing and proposed conditions for the 1-inch storm
- Twenty-three design points exhibit an increase in peak discharge rates between the existing and proposed conditions for the 2-year storm
- Thirty design points exhibit increases in peak discharge rates between the existing and proposed conditions in the 10-year storm
- Twenty-three design points exhibit an increase in peak discharge rate between the existing and proposed conditions for the 25-year storm
- Thirty-six design points exhibit an increase in peak discharge rate between existing and proposed conditions for the 100-year storm

The increases in peak rates described above between the existing and proposed conditions are minimal, so the impacts of implementing additional structural stormwater BMPs to decrease the peak flow outweigh the minor benefit gained from adding such measures. The red numbers in Tables 3 through 8 below indicate increases in peak rate attenuation between existing and proposed conditions.

It should also be noted that conveyance swales were not included as detention ponds in the proposed conditions model. Although these swales were not included as detention ponds they will filter and detain stormwater and include check dams that will detain and infiltrate

stormwater which will reduce the peak rate of runoff. If these swales were included in the modeling, peak rates in the proposed conditions would be further reduced from what is presented below.

Design Points with Proposed Structural Stormwater Controls:

The following design points can mitigate peak flows with the use of areas of increased infiltration:

DP-5.8: A one-foot-deep area of increased infiltration is proposed for 200 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-5.13: A one-foot-deep area of increased infiltration is proposed for 250 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-5.14: A one-foot-deep area of increased infiltration is proposed for 250 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-5.18: A one-foot-deep area of increased infiltration is proposed for 85 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-6.2 – An eight to ten-foot wide increased area of infiltration is proposed along the south side of the bike path to mitigate peak flows. This widened area of increased infiltration is in line with a swale that is relatively flat and includes additional check dams to promote infiltration above that of a standard swale prior to discharging into the area of increased infiltration.

DP-6.6: A one-foot-deep area of increased infiltration is proposed for 700 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-7.1: An increased area of infiltration basin is proposed approximately 270 ft from Peakham Road. A catch basin is proposed where the bike path and Peakham Road meet to collect any additional runoff from the Site onto Peakham Road and route the runoff to the area of increased infiltration.

DP-8.2: A one-foot-deep area of increased infiltration is proposed for 450 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-8.3: A one-foot-deep area of increased infiltration is proposed for 725 ft along the edge

of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-8.4: A one-foot-deep area of increased infiltration is proposed for 700 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-8.5: A one-foot-deep area of increased infiltration is proposed for 900 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.6: A one-foot-deep area of increased infiltration is proposed for 350 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.7: A one-foot-deep area of increased infiltration is proposed for 200 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.12: A one-foot-deep area of increased infiltration is proposed for 300 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.13: A one-foot-deep area of increased infiltration is proposed for 300 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.14: An area of increased infiltration basin is proposed along the north side of the bike path to mitigate peak flows. This widened area of increased infiltration includes a sediment forebay and two cells to promote infiltration above that of a standard swale prior to discharging into the design point.

Design Points that Comply with Standard 2 to the Maximum Extent Practicable

Thirty-six design points that were analyzed comply with Standard 2 to the maximum extent practicable and demonstrated an increase in peak runoff.

The time of concentrations for the sub-catchments with BMPs assumes a “grassed waterway” surface type for the entire length of the areas of increased infiltration and conveyance swales and does not take into account the impact of the check dams. This results in decreased times of concentration under proposed conditions as compared to existing conditions. However, the time of concentration is likely to increase based on flow attenuation and storage behind check dams within the areas if increased infiltration and conveyance swales. Additionally,

there are several locations where sub-watersheds were delineated in the proposed conditions but not the existing conditions in order to accurately design conveyance swales and areas of increased infiltration. In these locations the time of concentration was larger in the existing conditions than the proposed conditions which resulted in the modeling estimating larger flows under proposed conditions for areas with little or no impact from the proposed project.

As previously noted the project evaluated additional structural stormwater BMPs, however the construction impacts (tree clearing, earthwork, etc. in and near wetland resources) for implementing additional structural BMPs to mitigate these increases would outweigh the minor benefit gained from adding such measures.

Watersheds where there is an increase of more than 1 cfs between existing and proposed conditions for the 100-YR event were reviewed individually to understand the impacts to abutters and/or downstream waterbodies. The results of this review are summarized in Table 16. As a result of this review and two additional areas of increased infiltration were added since the July 2020 submission of the Stormwater Report.

Table 16 Design Points with Increased in Flow Greater than 1 CFS

	Flow (cfs)	Runoff Volume (af)	Description
			Design Point 5.6
EX5.6	2.1	0.787	DP 5.6 discharges to a large wetland system with a tributary area of 1.38 square miles. Potential impacts from the increase in peak rate and volume to this wetland will be de minimis.
PR5.6	3.6	1.004	
Delta	**1.5**	**0.217**	
			Design Point 5.13
EX5.13	1.6	0.373	DP5.13 discharges to Hop Brook with a large tributary area of 7.41 square miles. Potential impacts from the increase in peak rate and volume to this wetland will be de minimis. There is an area of disturbed existing vegetation within DP 5.13 and accordingly an additional area of increased infiltration has been incorporated to the design within this watershed.
PR5.13	3.1	0.531	
Delta	**1.5**	**0.158**	
			Design Point 6.6
EX6.6	7.7	1.057	The Project team evaluated the available storage volume at Wetland 36 in order to estimate the increase in water surface during the 100-year event. This conservative calculation does not account for outlets to the wetland which would further reduce potential impacts. Using LiDAR elevation data, the wetland surface area was approximated at 33,000 square feet, which equals an approximate 1.6-inch increase in water surface elevation during the 100-year event which would have limited to no impacts to abutters and wetland functions.
PR6.6	9.2	1.16	
Delta	**1.5**	**0.103**	
			Design Point 6.14
EX 6.14	0.2	0.047	

PR 6.14	1.2	0.133	The Project team evaluated the available storage volume at Wetland 33 in order to estimate the increase in water surface elevation during the 100-year event. This conservative calculation does not account for the wetland's outlets which would further reduce potential impacts. Using LiDAR elevation data the wetland was approximated at 67,000 square feet, which equals an approximate 0.7-inch increase in water surface elevation during the 100-year event which would have limited to no impacts to abutters and wetland functions.
Delta	**1**	**0.086**	
			Design Point 7.1
EX7.1	3	0.318	DP 7.1 discharges to Dudley Brook with a large tributary area of 1.72 square miles. Potential impacts from the increase in peak rate and volume to this brook will be de minimis.
PR7.1	4.5	0.451	
Delta	**1.5**	**0.133**	
			Design Point 8.4
EX8.4	0.3	0.074	Wetland 26 was modeled in HydroCAD as a pond in order to evaluate the peak water surface elevation during the 100-year event. This pond was conservatively modeled in HydroCAD to exclude the buried culvert which would realistically convey some flow from Wetland 26 to Wetland 25. The calculations estimate a post-development water surface elevation of 156.3 feet , which avoids potential impacts to an abutting an access road.
PR8.4	1.9	0.218	
Delta	**1.6**	**0.144**	
			Design Point 9.1
EX 9.1	8	1.207	The water surface elevation at the design point (tributary to Hop Brook) is driven by the elevation of Hop Brook, which at this location has a large tributary area of 15.4 square miles. The potential impacts from the increase in peak rate and volume will be de minimis. The Project team also considered an additional BMP within this watershed. This area is space constrained to the north and south. To the north is a tributary to Hop Brook, and to the South is an abutting development. A subsurface infiltration trench was also considered; however, it was determined to be unwarranted due to additional land disturbance and vegetation removal, increased costs and maintenance, and little to no stormwater benefits.
PR 9.1	9.5	1.23	
Delta	**1.5**	**0.023**	
			Design Point 10.4
EX 10.4	6.3	1.598	DP 10.4 discharges directly to Hop Brook with a large tributary area of 15.4 square miles. Potential impacts from the increase in peak rate and volume to this waterbody will be de minimis.
PR 10.4	7.4	1.676	
Delta	**1.1**	**0.078**	
			Design Point 10.6
EX10.6	10.6	1.062	There are no abutters directly downstream of DP10.6. Additionally, DP10.6 discharges to Wash Brook with a tributary area of 20.7 square miles.

PR10.6	12.4	1.18	Potential impacts from the increase in peak rate and volume to this wetland will be de minimis.
Delta	**1.8**	**0.118**	
			Design Point 10.7
EX10.7	0.9	0.214	There are no abutters directly downstream of DP10.7. Additionally, DP10.7 discharges to Hop Brook with a large tributary area of 15.5 square miles at this discharge point. Potential impacts from the increase in peak rate and volume to this wetland will be de-minimis.
PR10.7	1.9	0.193	
Delta	**1**	**-0.021**	
			Design Point 10.11/10.13
EX10.11 /10.13	9.7	0.952	There are no abutters directly downstream of DP10.11/10.13 and the closest upstream abutter is approximately 7 feet higher than the most upgradient portion of the bike path within this watershed. DP 10.11/10.13 discharges to Stream 1 which drains directly to Wash Brook with a large tributary area of 21.2 square miles. The potential impacts from the increase in peak rate and volume to this stream will be de minimis.
PR10.11 /10.13	12.1	0.95	
Delta	**2.4**	**-0.002**	
			Design Point 10.14
EX10.14	9.7	1.32	There are no abutters directly downstream of DP10.14 and the closest upstream abutter is approximately 9 feet higher than the most upgradient portion of the bike path within this watershed. DP10.14 drains to a large wetland system that drains to Wash Brook with a tributary area of 21.3 square miles. The potential impacts from the increase in peak rate and volume to this wetland will be de minimis. Although increases in peak rate and volume will be de minimis, an additional area of increased infiltration has been incorporated to the design within this watershed in order to capture and treatment upstream flows from Landham Road.
PR10.14	11.7	1.282	
Delta	**2**	**-0.038**	
			Design Point 10.15
EX10.15	2.6	0.433	There are no abutters directly downstream of DP10.15 and the closest upstream abutter is approximately 8 feet higher in elevation than the most upstream point where water is being collected from the bike path. DP10.15 drains to a large wetland system that drains to Wash Brook with a tributary area of 21.3 square miles. Potential impacts from the increase in peak rate and volume to this wetland will be de minimis.
PR10.15	3.7	0.538	

Delta	**1.1**	**0.105**

The computations and supporting information for the hydrologic model are provided in Appendix B.

Standard 3: Stormwater Recharge

The Project complies with Standard 3 to the maximum extent practicable.

A combination of structural and non-structural stormwater BMPs are used to meet Standard 3 to the maximum extent practicable. Along portions of the Project located in critical areas, structural stormwater BMPs are proposed to promote recharge. These areas of increased infiltration are basins or swales with check dams spaced to achieve the most effective recharge based on the longitudinal slope of the swale.

Additionally, stormwater from the bike path will discharge to the adjacent vegetated areas where stormwater will naturally infiltrate under the majority of storm events. This approach is a non-structural stormwater BMP known as impervious area disconnection, which redirects stormwater from areas of impervious cover to areas of pervious cover. This non-structural BMP provides stormwater recharge, and although DEP protocols do not provide credit for this feature, EPA guidance notes pollutant and volume reductions from this BMP type.

As noted previously, the Project evaluated whether additional structural stormwater BMPs would be practicable in order to more closely approximate annual recharge from pre-construction conditions. However, these BMPs would require additional impacts to existing vegetation and wetland resources and are impractical due to maintenance requirements and costs and would have provided minor improvement over the currently proposed stormwater management design.

The recharge calculations for the proposed structural stormwater BMPs (areas of increased infiltration) are provided in Table 17. The provided recharge calculations do not include the potential recharge volume from the conveyance swales or the non-structural stormwater BMP which are not considered recharge BMPs by MassDEP's Stormwater Management Handbook.

Table 17 Summary of Recharge Calculations

Infiltration BMP	Provided Recharge Volume (cf)
P-5.8B	226
P-5.13	219
P-5.14B	191
P-5.18B	46
P-6.2	473

Infiltration BMP	Provided Recharge Volume (cf)
P-6.6A	413
P-7.1	104
P-8.2B	578
P-8.3B	1,262
P-8.4B	578
P-8.5A	816
P-10.6A	653
P-10.7A	198
P-10.12A	258
P-10.13A	320
P-10.14B	414
Total Recharge Provided	6,748
Total Recharge Required	9,099
Total Recharge Required (with Capture Area Adjustment)	13,377

The soil evaluation, computations, and supporting information are provided in Appendix C.

Standard 4: Water Quality

The Project complies with Standard 4 to the maximum extent practicable.

As described above, the Project is proposing structural and non-structural stormwater BMPs to provide stormwater treatment, detention, and infiltration that will provide water quality treatment.

As noted previously, the Project completed an evaluation of additional structural stormwater BMPs. These BMPs were determined to be impractical due to long-term maintenance requirements, additional impacts to vegetated areas and wetland resources, engineering challenges, costs, and negligible benefits in comparison to proposed stormwater management design. From a water quality perspective, this conclusion considered that the bike paths do not have a source of contaminants to the path surface, and therefore little to no contaminants will be washed off the path surface by stormwater runoff (see the Standard 5 discussion below). Other than in emergency situations, vehicular access along the path is limited to bi-weekly mowing over the shoulder by DCR, annual mowing of the duct bank, inspections by Eversource approximately once every three years, and other maintenance as needed by both Eversource and DCR. The path will not be plowed or treated in the winter. Thus, the Project will not have a significant impact on water quality.

However, the Project will implement areas of increased infiltration with check dams along portions of the path to improve water quality. Overall, the Project proposes sixteen areas of increased infiltration which include basins and/or check dams to provide treatment of the water quality volume to the maximum extent practicable.

Per the Massachusetts Stormwater Standards, BMPs within and draining to critical areas should calculate the water quality volume based on 1-inch of runoff while BMPs outside of

these resource areas shall be calculated using the 0.5-inch runoff. While the majority of the BMPs are within the critical areas of a Zone II Wellhead Protection Area ("WPA") or a Coldwater Fishery Resource, six BMPs do fall outside of these resource areas (P-6.2, P-6.6, P-10. 7, P-10.6, P-10.7, P-10.12, and P-10.13.). Additionally, the Stormwater Management Bylaw Regulations for the Town of Sudbury require that the water quality volume for sizing of BMPs shall be based on the one-inch runoff volume. In order to meet by Sudbury Stormwater Bylaws and conservatively comply with the Massachusetts Stormwater Standards, the water quality volume was calculated using a one-inch rainfall depth across the impervious area of the entire project.

The water quality volume calculations for the proposed structural stormwater BMPs (areas of increased infiltration) are provided in Table 18. The provided recharge calculations do not include the potential treatment volume from the conveyance swales or the non-structural stormwater BMP which are not considered treatment BMPs by MassDEP's Stormwater Management Handbook.

Table 18 Summary of Water Quality Volume Calculations

Treatment BMP	Provided Water Quality Volume (cf)
P-5.8B	226
P-5.13	219
P-5.14B	191
P-5.18B	46
P-6.2	473
P-6.6A	413
P-7.1	104
P-8.2B	578
P-8.3B	1,262
P-8.4B	578
P-8.5A	816
P-10.6A	653
P-10.7A	198
P-10.12A	258
P-10.13A	320
P-10.14B	414
Total Water Quality Volume Provided	6,748
Total Water Quality Volume Required	19,058

Computations and supporting information are provided in Appendix D.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

This standard does not apply. The Project's end use will be a bike path, which is not considered a LUHPPL.

Standard 6: Critical Areas

The Project complies with Standard 6 to the maximum extent practicable. The Project is proposing structural and non-structural stormwater BMPs to provide stormwater treatment, detention, and infiltration to the proposed bike path and avoid impacts to critical areas.

The Project passes through one Zone II Wellhead Protection Area ("WPA") and a Coldwater Fishery Resource, which are considered critical areas. Although the Project avoids work within vernal pools (which qualify as Outstanding Resource Waters ("ORWs")) or vernal pool habitat, there are eight vernal pools within the ROW in Sudbury. The potential stormwater impacts (peak discharge rates and volume) to these resources were evaluated in Standard 2 above.

In critical areas, the Stormwater Management Standards require that at least 44% of the total suspended solids ("TSS") be removed prior to discharge into an infiltration structure. This requirement would typically require multiple pretreatment practices in series. The Stormwater Handbook identifies several acceptable stormwater treatment BMPs for critical areas, including bioretention areas, sand or organic filters, and infiltration basins, trenches, or subsurface structures. The Stormwater Management Standards also require that BMPs be set back 100 feet from vernal pools and that all infiltrating BMPs be located at least 50 feet from any surface water including wetlands, which limits the available space for such features within this linear corridor. As noted previously in the report the Project evaluated additional structural stormwater BMPs These BMPs were determined to be impractical due to long-term maintenance requirements, additional impacts to vegetated areas and wetlands, engineering challenges, and negligible benefits in comparison to proposed stormwater management design.

The proposed measures also exceed what is typically incorporated into rail trail projects, especially since stormwater runoff from bike paths is a limited source of pollutants such as total suspended solids and phosphorus.

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable

As required under Standard 7, the Project is designed to comply with Stormwater Management Standards 2, 3, 4, and 6 to the maximum extent practicable. (Standard 5 does not apply).

Please refer to the discussion above for each of these Standards for the applicable computations and supporting information.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Controls

The Project fully complies with Standard 8. As required, the proposed erosion and sedimentation controls are shown on the Project plans. The Project will disturb more than one acre of land; thus, coverage under the Environmental Protection Agency ("EPA") National

Pollutant Discharge Elimination System ("NPDES") Construction General Permit is required. Under this permit, a Stormwater Pollution Prevention Plan ("SWPPP") will be developed and submitted before land disturbance begins. Drafts of Eversource and DCR's SWPPP manuals are attached with this report in Appendix E.

Standard 9: Operation and Maintenance Plan

The Project fully complies with this standard. A draft Long-Term Operation and Maintenance (O&M) Plan for the stormwater management system is provided in Appendix F.

Standard 10: Prohibition of Illicit Discharges

This standard does not apply. There is no sanitary sewer infrastructure known to exist on-site. The stormwater management system has been designed in compliance with current standards. Once the Project is constructed a finalized and signed illicit discharge statement will be provided.

3

Additional Municipal Rules and Regulations

As demonstrated below, the proposed Project complies with the Design and Performance Criteria identified in Section 8.0.A parts 3, 4, and 5 of the Stormwater Management Bylaw Regulations for the Town of Sudbury.

3A. Environmentally Sensitive Site Design

The Project preserves the existing natural hydrologic conditions with respect to the ground and surface water to the maximum extent feasible. The design limits the amount of vegetation clearing and earthwork though the corridor. The Project uses vegetated shoulders and conveyance swales with check dams to promote infiltration and recharge to maintain the existing drainage patterns.

3B. Low Impact Development

The Project incorporates Low Impact Design where feasible including conveyance swales, areas of increased infiltration, impervious area disconnect, and low impact sustainable landscaping such as combined herbaceous/woody seed mix along the bike path. These design elements provide treatment while also preserving the existing landscape as much as possible.

3C. Limiting Contaminants and Pollution - Best Management Practices (BMPs)

The Project will be used by pedestrians and bicyclists, which will not contribute significant contaminants to the path surfaces. Other than in emergency situations, vehicular access along the path will be limited to bi-weekly mowing over the shoulder by DCR, annual mowing of the duct bank, inspections by Eversource approximately once every three years, and other periodic maintenance as needed by both Eversource and DCR. The path will not be plowed and/or treated in the winter. The proposed measures exceed what is typically incorporated into rail trail projects, especially since stormwater runoff from bike paths is a limited source of pollutants such as total suspended solids and phosphorus.

The Project was designed to include the use of areas of increased infiltration and conveyance swales along portions of the project to promote infiltration and recharge, consistent with DCR's standard design for all its rail trail facilities. In addition, the Project proposes:

- One area where the area of increased infiltration will be widened to create a greater infiltration area
- One area where an increased area of infiltration basin will be added to mitigate flows onto the roadway
- Twelve additional areas where areas of increased infiltration were added.

These areas of increased infiltration have additional check dams that were placed to maximize infiltration above that of a standard conveyance swale and provide treatment of the water quality volume to the maximum extent practicable.

3D. Water Quality Volume

The Sudbury Stormwater Regulations require that water quality volume for sizing of BMPs shall be based on 1-inch of runoff from the net new impervious area. This requirement was met.

3E. Methodology

The hydrologic analysis for the existing and proposed conditions, as previously described, was determined using HydroCAD modeling software which is based on the NRCS Technical Release 20 and 55 (TR-20 and TR-55) methodology.

3F. Design Storms: 1-inch, 2-, 10-, 25-, and 100-year

The rainfall-runoff response of the Site under the existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100 years, with rainfall amounts of 3.2", 4.8", 6.0", and 8.6", respectively, as outlined by the Stormwater Management Bylaw Regulations for the Town of Sudbury. A rainfall depth of one inch (1") was also evaluated, as outlined by the Stormwater Management Bylaw Regulations

for the Town of Sudbury. The results of the analysis, as summarized in Tables 3 to 8, are found in the above Section 2, Standard 2.

3G. Pre and Post Sub-Watershed

The Site was analyzed for the pre and post development, at designated design control points.

3H. Land Area for Existing and Proposed Conditions

The Site was analyzed using the same land area for the existing and proposed conditions per Section 8.0.A.3.h of the Sudbury Stormwater By-Law Regulations.

3I. Total Volume of Discharge and Peak Rates

The total volume of discharge and peak rates were calculated and are documented in the discussion of MassDEP Standard 2 in this report.

3J. Redevelopment Standards

Under this section of the Bylaw Regulations the Project must be designed in accordance with the redevelopment checklist provided in the latest Massachusetts Stormwater Handbook. The checklist provides additional details on compliance with the Stormwater Management Standards and specifically the standards that redevelopment projects are required to meet to the maximum extent practicable. The Project complies with the redevelopment checklist; see discussion of compliance with Standard 7 in Chapter 2 above.

4. Water Reuse/Water Conservation

This standard is not applicable as this Project does not include any buildings and irrigation is not proposed.

5. Landscape Design

The Project will restore all disturbed areas outside the 10-foot-wide MCRT using a native seed mix with a focus on developing herbaceous and low-growing woody vegetation over the two-foot shoulders and the duct bank (a 5-foot area). In addition, any areas outside of the 19-foot-wide maintained corridor (which includes the 10-foot paved MCRT, two 2-foot shoulders, and 5-foot area over the duct bank) will be allowed to naturally revegetate with herbaceous and taller woody vegetation.

Appendix A – Standard 1 Computations and Supporting Information

Flow Stability Calculations: Areas of Increased Infiltration

Project Name: Sudbury Hudson Eversource
Project Location: Sudbury/Hudson, MA

Proj. No.: 14009.00
Date: July 2020
Calculated by: RPL
Checked by: AHF
Oct 2020 REV.: AHF

		Channel Geometry																			
BMP ID:	Design Flow 'Q' (cfs)	Avg. Bottom Width 'B' (ft)	Channel Side Slope 'Z_1' (ft)	Channel Side Slope 'Z_2' (ft)	Top Width 'T' (ft)	Channel Slope 'S_o' (ft/ft)	Channel Depth 'd' (ft) [1]	Cross Sectional Area 'A' (sq. ft)	Wetted Perimeter 'P' (ft)	Hydraulic Radius 'R' (ft)	Mean Boundary Shear Stress 'τ_o' (lb/sq. ft)	Grass Roughness Coefficient 'C_n' [2]	Mannings Roughness 'n' [3]	Flow 'Q_1' (cfs)	Is Q1 within 5% of Q?	Max. Shear Stress in Channel @ depth 'τ_d' (lb/sq. ft)	Permissible Soil Shear Stress '$\tau_{p,soil}$' (lb/sq. ft) [4]	Cover Factor Values for Uniform Strands of Grass 'C_f' [5]	Soil Grain Roughness 'n_s' [6]	Permissible Vegetation/Soil Shear Stress 'τ_p' (lb/sq. ft)	Is the lining Stable? (Y/N)
P-5.8B	0.20	3.0	2.0	6.0	4.7	0.0045	0.210	0.81	4.75	0.17	0.05	0.168	0.121	0.20	YES	0.059	0.020	0.700	0.016	3.80	YES
P-5.14B	0.30	1.0	6.0	6.0	3.0	0.0318	0.165	0.33	3.00	0.11	0.22	0.168	0.066	0.30	YES	0.327	0.020	0.700	0.016	1.14	YES
P-5.18B	0.10	1.0	2.0	6.0	1.8	0.0427	0.095	0.13	1.79	0.07	0.20	0.168	0.069	0.10	YES	0.253	0.020	0.700	0.016	1.23	YES
P-6.2	0.30	1.0	2.0	7.5	2.6	0.0350	0.165	0.29	2.62	0.11	0.25	0.168	0.063	0.30	YES	0.360	0.020	0.700	0.016	1.03	YES
P-6.6A	0.40	3.0	1.0	6.0	3.8	0.0700	0.117	0.40	3.88	0.10	0.45	0.168	0.049	0.70	NO	0.511	0.020	0.700	0.016	0.63	YES
P-8.2B	0.10	5.0	2.0	6.0	5.4	0.0330	0.050	0.26	5.42	0.05	0.10	0.168	0.090	0.10	YES	0.103	0.020	0.700	0.016	2.12	YES
P-8.3B	0.10	8.0	2.0	6.0	8.3	0.0440	0.035	0.29	8.29	0.03	0.10	0.168	0.092	0.10	YES	0.097	0.020	0.700	0.016	2.19	YES
P-8.4B	0.40	5.0	2.0	6.0	5.7	0.0440	0.085	0.45	5.71	0.08	0.22	0.168	0.066	0.40	YES	0.234	0.020	0.700	0.016	1.13	YES
P-8.5A	0.60	3.0	2.0	6.0	4.3	0.0275	0.162	0.59	4.35	0.14	0.23	0.168	0.064	0.60	YES	0.277	0.020	0.700	0.016	1.07	YES
P-10.6A	0.10	6.5	2.0	6.0	7.0	0.0137	0.065	0.44	7.04	0.06	0.05	0.168	0.116	0.10	YES	0.056	0.020	0.700	0.016	3.48	YES
P-10.7A	0.50	1.0	2.0	6.0	4.0	0.0071	0.378	0.95	4.15	0.23	0.10	0.168	0.089	0.50	YES	0.168	0.020	0.700	0.016	2.08	YES
P-10.12A	0.10	1.0	2.0	6.0	1.9	0.0265	0.117	0.17	1.97	0.09	0.14	0.168	0.078	0.10	YES	0.193	0.020	0.700	0.016	1.58	YES
P-10.13A	4.40	1.0	2.0	6.0	5.5	0.0265	0.560	1.81	5.66	0.32	0.53	0.168	0.046	4.47	YES	0.926	0.020	0.980	0.016	8.31	YES

1) Channel Depth 'd' is determined by the iteritive process as shown in Chapter 3: General Design Procedures in HEC-15.
2) Grass Roughness Coefficient 'C_n' determined from Table 4.3 in HEC-15.
3) Manning's Roughness 'n' is determined from Equation 4.2 in HEC-15 and is a function of the Mean Boundary Shear Stress 'τ_o'.
4) Permissible Soil Shear Stress '$\tau_{p,soil}$' is conservatively estimated as 0.02 lb/sq.ft per section 4.3.2.1 Non-Cohesive Soils in HEC-15, as site soils are found to be silty sands.
5) Cover Factor Values for Uniform Strands of Grass 'Cf' is selected from Table 4.5 in HEC-15 for 'Mixed in Fair Condition'. P-10.13A is designed with a Cf of 0.98 (Sod in Excellent Conditon) to provide a stable lining.
6) 'Soil Grain Roughness 'ns' is conservatively estimated as 0.016 for D_{75} < 0.05 inches per Section 4.3.1 Effective Shear Stress in HEC-15

Flow Stability Calculations: Conveyance Swales

Project Name: Sudbury Hudson Eversource
Project Location: Sudbury/Hudson, MA

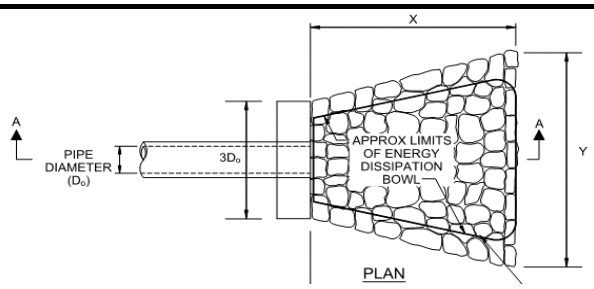
Proj. No.: 14009.00
Date: July 2020
Calculated by: RPL
Checked by: AHF
Oct 2020 REV.: AHF

		Channel Geometry																		
BMP ID:	Design Flow 'Q' (cfs)	Avg. Bottom Width 'B' (ft)	Channel Side Slope 'Z_1' (ft)	Channel Side Slope 'Z_2' (ft)	Channel Slope 'S_o' (ft/ft)	Channel Depth 'd' (ft) [1]	Cross Sectional Area 'A' (sq. ft)	Wetted Perimeter 'P' (ft)	Hydraulic Radius 'R' (ft)	Mean Boundary Shear Stress 'τ_o' (lb/sq. ft)	Grass Roughness Coefficient 'C_n' [2]	Mannings Roughness 'n' [3]	Flow 'Q_1' (cfs)	Is Q1 within 5% of Q?	Max. Shear Stress in Channel @ depth 'τ_d' (lb/sq. ft)	Permissible Soil Shear Stress '$\tau_{p,soil}$' (lb/sq. ft) [4]	Cover Factor Values for Uniform Strands of Grass 'C_f' [5]	Soil Grain Roughness 'n_s' [6]	Permissible Vegetation/Soil Shear Stress 'τ_p' (lb/sq. ft)	Is the lining Stable? (Y/N)
DP-5.6	1.10	1.0	6.0	2.0	0.0160	0.387	0.99	4.22	0.23	0.23	0.168	0.064	1.10	YES	0.386	0.020	0.700	0.016	1.07	YES
DP-5.7	0.10	7.5	6.0	2.0	0.0032	0.115	0.91	8.45	0.11	0.02	0.168	0.166	0.10	YES	0.023	0.020	0.700	0.016	7.19	YES
DP-5.9	0.00	7.0	6.0	2.0	0.0045		0.00	7.00	0.00	0.00	0.168				0.000	0.020	0.700	0.016		Flow = 0.0
DP-5.11	0.00	5.0	6.0	2.0	0.0100		0.00	5.00	0.00	0.00	0.168				0.000	0.020	0.700	0.016		Flow = 0.0
DP-5.12	1.90	8.5	6.0	2.0	0.0340	0.157	1.43	9.80	0.15	0.31	0.168	0.057	1.90	YES	0.332	0.020	0.700	0.016	0.85	YES
DP-5.13	1.90	1.0	6.0	2.0	0.0062	0.659	2.40	6.48	0.37	0.14	0.168	0.078	1.86	YES	0.255	0.020	0.700	0.016	1.58	YES
DP-6.1B	0.00	5.5	6.0	2.0	0.0270		0.00	5.50	0.00	0.00	0.168				0.000	0.020	0.700	0.016		Flow = 0.0
DP-6.7	1.10	7.5	6.0	2.0	0.0225	0.153	1.24	8.77	0.14	0.20	0.168	0.068	1.10	YES	0.215	0.020	0.700	0.016	1.22	YES
DP-6.7	1.10	3.0	6.0	2.0	0.0387	0.186	0.70	4.55	0.15	0.37	0.168	0.053	1.10	YES	0.450	0.020	0.700	0.016	0.74	YES
DP-7.2	0.10	1.0	6.0	2.0	0.0400	0.099	0.14	1.82	0.08	0.19	0.168	0.070	0.10	YES	0.246	0.020	0.700	0.016	1.27	YES
DP-8.1B	0.00	5.0	6.0	2.0	0.0024		0.00	5.00	0.00	0.00	0.168				0.000	0.020	0.700	0.016		Flow = 0.0
DP-10.4A	4.00	3.0	6.0	2.0	0.0083	0.614	3.35	8.10	0.41	0.21	0.168	0.066	3.80	YES	0.318	0.020	0.700	0.016	1.15	YES
DP-10.4B	6.40	3.0	6.0	2.0	0.0173	0.566	2.98	7.71	0.39	0.42	0.168	0.051	6.10	YES	0.611	0.020	0.700	0.016	0.67	YES
DP-10.14B	4.40	5.0	6.0	2.0	0.0103	0.712	5.59	10.93	0.51	0.33	0.168	0.056	9.69	NO	0.458	0.020	0.700	0.016	0.81	YES

1) Channel Depth 'd' is determined by the iteritive process as shown in Chapter 3: General Design Procedures in HEC-15.
2) Grass Roughness Coefficient 'C_n' determined from Table 4.3 in HEC-15.
3) Manning's Roughness 'n' is determined from Equation 4.2 in HEC-15 and is a function of the Mean Boundary Shear Stress 'τ_o'.
4) Permissible Soil Shear Stress '$\tau_{p,soil}$' is conservatively estimated as 0.02 lb/sq.ft per section 4.3.2.1 Non-Cohesive Soils in HEC-15, as site soils are found to be silty sands.
5) Cover Factor Values for Uniform Strands of Grass 'Cf' is selected from Table 4.5 in HEC-15 for 'Mixed in Fair Condition'.
6) 'Soil Grain Roughness 'ns' is conservatively estimated as 0.016 for D_{75} < 0.05 inches per Section 4.3.1 Effective Shear Stress in HEC-15

Outlet Protection Calculations: Stone For Pipe Ends

Project Name: Sudbury Hudson Eversource
Proj. No.: 14009.00
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: AHF
Checked by: MAC
Oct 2020 REV.: AHF



FES 10 STA 533+46, 14.9' RT

Calculations completed using FHWA Hydraulic Toolbox 4.1

Riprap Analysis

Structure type: Culvert Outlet Protection

Geotextile/Granular Filter Design...

Parameter	Value	Units	Notes
Channel Parameters			
Select Channel	<Define Local Data>		
	Channel Calculator...		
Input Parameters			
	Transfer Values From Channel Calculator		
Flow	0.400	cfs	
Culvert Diameter	1.000	ft	
Normal Depth in Culvert	0.269	ft	
Tailwater Depth	0.000	ft	If tailwater is unknown, use 0.4D
Flow Type	subcritical		
Results			
D50	0.175	in	
D50	0.015	ft	The sizing equation assumes a rock s.g.=2.65. If s.g. is not 2.65, rock size (D...
Riprap Shape	Riprap shape should be angular		
Riprap Class			
Riprap Class Name	CLASS I		
Riprap Class Order	1		
D15	4.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D50	6.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D85	9.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
D100	12.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
Layout			
Apron Length	4.000	ft	
Apron Depth	0.000	ft	
Apron Width (at apron end)	5.667	ft	
Computation Variables			
Tailwater Depth Used in Computations	0.400	ft	
Culvert Diameter Used in Calculations	1.000	ft	

OK Cancel

Stone Protection Dimensions:

X = 4.0 ft.
Y = 5.7 ft.
Z = 12.0 in. (Minimum)
d_{50} = 6.5 in.

HW 11 STA 713+63, 10.0' LT

Headwall 11 is replacing an existing headwall which is currently stable from erosion. Riprap is not proposed given there is no erosion under existing conditions and to reduce impacts to the abutting wetland.

Outlet Protection Calculations: Stone For Pipe Ends

Project Name: Sudbury Hudson Eversource
Proj. No.: 14009.00
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: AHF
Checked by: MAC
Oct 2020 REV.: AHF

HW 12

STA 713+63, 10.0' RT

Headwall 12 is replacing an existing headwall which is currently stable from erosion. Riprap is not proposed given there is no erosion under existing conditions and to reduce impacts to the abutting wetland.

HW 13

STA 738+77, 12.0' LT

Headwall 13 is replacing an existing headwall which is currently stable from erosion. The existing headwall does not experience erosion under existing conditions. The headwall is an upstream inlet of a low point along the right-of-way and is not expected to experience erosion as a result of the project.

HW 14

STA 738+77, 15.4' RT

Calculations completed using FHWA Hydraulic Toolbox 4.1

Riprap Analysis - HW 14

Structure type: Culvert Outlet Protection

Geotextile/Granular Filter Design...

Parameter	Value	Units	Notes
Channel Parameters			
Select Channel	<Define Local Data>		
	Channel Calculator...		
Input Parameters			
	Transfer Values From Channel Calculator		
Flow	5.500	cfs	
Culvert Diameter	1.500	ft	
Normal Depth in Culvert	0.992	ft	
Tailwater Depth	0.000	ft	If tailwater is unknown, use 0.4D
Flow Type	subcritical		
Results			
D50	2.236	in	
D50	0.186	ft	The sizing equation assumes a rock s.g.=2.65. If s.g. is not 2.65, rock size (D...
Riprap Shape	Riprap shape should be angular		
Riprap Class			
Riprap Class Name	CLASS I		
Riprap Class Order	1		
D15	4.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D50	6.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D85	9.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
D100	12.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
Layout			
Apron Length	6.000	ft	
Apron Depth	0.000	ft	
Apron Width (at apron end)	8.500	ft	
Computation Variables			
Tailwater Depth Used in Computations	0.600	ft	
Culvert Diameter Used in Calculations	1.500	ft	

OK Cancel

Stone Protection Dimensions:

X = 6.0 ft.
Y = 8.5 ft.
Z = 12.0 in. (Minimum)
d_{50} = 6.5 in.

Outlet Protection Calculations: Stone For Pipe Ends

Project Name: Sudbury Hudson Eversource
Proj. No.: 14009.00
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: AHF
Checked by: MAC
Oct 2020 REV.: AHF

DP-10.4A

STA 722+27, 17' RT

Stone Protection with an energy dissipation bowl will be placed following the terminating check dam out of the swale. Energy dissipation blow is sized using U.S. Department of Transportation Federal Highway Administration: Hydraulic Engineering Circular No. 14, Third Edition. Hydraulic Design of Energy Dissipators for Culverts and Channels; Equation 10.6

HEC 14. Equation 10.6

$$D_{50} = \frac{0.692}{S-1}\left(\frac{V^2}{2g}\right)$$

where,
D_{50} = median rock size, m (ft)
V = velocity at the exit of the dissipator, m/s (ft/s)
S = riprap specific gravity

v =	2.64	ft/second
v =	0.8	meter/second
S =	2.65	
d_{50} =	0.00	meter
d_{50} (in) =	**0.17**	***Use 6.5" D50 minimum***
X =	6.0	ft. (Minimum)
Y =	8.5	ft. (Minimum)
Z =	14.0	in. (Minimum)

DP-10.4B

STA 720+00

Flow stability calculation for DP-10.14B conveyance swale was provided in Appendix A of the previous submission. This calculation was very conservative as the full watershed is routed through the 100-foot swale on edge of watershed; based on the existing grade in the area, only a small portion of this watershed is expect to reach this swale. This conservative calculation showed that although the flow of this watershed is higher than that of other Design Points, the calculated erosive velocities are less than that of the erosion-resisting capacity of the proposed vegetation. This swale is considered stable to possible erosion and will remain as is.

DP-10.13A

STA 753+48, 9' LT

Stone Protection with an energy dissipation bowl will be placed following the terminating check dam out of the swale. Energy dissipation blow is sized using U.S. Department of Transportation Federal Highway Administration: Hydraulic Engineering Circular No. 14, Third Edition. Hydraulic Design of Energy Dissipators for Culverts and Channels; Equation 10.6

HEC 14. Equation 10.6

$$D_{50} = \frac{0.692}{S-1}\left(\frac{V^2}{2g}\right)$$

where,
D_{50} = median rock size, m (ft)
V = velocity at the exit of the dissipator, m/s (ft/s)
S = riprap specific gravity

v =	2.96	ft/second
v =	0.9	meter/second
S =	2.65	
d_{50} =	0.01	meter
d_{50} (in) =	**0.21**	***Use 6.5" D50 minimum***
X =	6.0	ft. (Minimum)
Y =	8.5	ft. (Minimum)
Z =	14.0	in. (Minimum)

Outlet Protection Calculations: Stone For Pipe Ends

Project Name: Sudbury Hudson Eversource
Proj. No.: 14009.00
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: AHF
Checked by: MAC
Oct 2020 REV.: AHF

DP-10.14B STA 763+13, 10' RT

A riprap apron will be placed following the swale. The riprap apron is sized using U.S. Department of Transportation Federal Highway Administration: Hydraulic Engineering Circular No. 14, Third Edition. Hydraulic Design of Energy Dissipators for Culverts and Channels; as shown by the FHWA Hydraulic Toolbox 4.1

Riprap Analysis - 10.14B

Structure type: Culvert Outlet Protection — Geotextile/Granular Filter Design...

Parameter	Value	Units	Notes
Channel Parameters			
Select Channel	<Define Local Data>		
	Channel Calculator...		
Input Parameters			
	Transfer Values From Channel Calculator		
Flow	4.500	cfs	
Culvert Diameter	1.500	ft	
Normal Depth in Culvert	0.083	ft	
Tailwater Depth	0.083	ft	If tailwater is unknown, use 0.4D
Flow Type	subcritical		
Results			
D50	1.711	in	
D50	0.143	ft	The sizing equation assumes a rock s.g.=2.65. If s.g. is not 2.65, rock size (D...
Riprap Shape	Riprap shape should be angular		
Riprap Class			
Riprap Class Name	CLASS I		
Riprap Class Order	1		
D15	4.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D50	6.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D85	9.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
D100	12.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
Layout			
Apron Length	6.000	ft	
Apron Depth	0.000	ft	
Apron Width (at apron end)	8.500	ft	
Computation Variables			
Tailwater Depth Used in Computations	0.600	ft	
Culvert Diameter Used in Calculations	1.500	ft	

OK Cancel

Stone Protection Dimensions:

X = 6.0 ft.
Y = 8.5 ft.
Z = 14.0 in. (Minimum)
d_{50} = 6.5

DP-10.15A STA 767+10, 10' RT

A riprap apron will be placed following the swale. The riprap apron is sized using U.S. Department of Transportation Federal Highway Administration: Hydraulic Engineering Circular No. 14, Third Edition. Hydraulic Design of Energy Dissipators for Culverts and Channels; as shown by the FHWA Hydraulic Toolbox 4.1

Riprap Analysis - 10.15A

Structure type: Culvert Outlet Protection — Geotextile/Granular Filter Design...

Parameter	Value	Units	Notes
Channel Parameters			

Outlet Protection Calculations: Stone For Pipe Ends

Project Name: Sudbury Hudson Eversource
Proj. No.: 14009.00
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: AHF
Checked by: MAC
Oct 2020 REV.: AHF

Select Channel	<Create New>		
	Channel Calculator...		
Input Parameters			
	Transfer Values From Channel Calculator		
Flow	0.800	cfs	
Culvert Diameter	1.500	ft	
Normal Depth in Culvert	0.500	ft	
Tailwater Depth	0.500	ft	If tailwater is unknown, use 0.4D
Flow Type	subcritical		
Results			
D50	0.171	in	
D50	0.014	ft	The sizing equation assumes a rock s.g.=2.65. If s.g. is not 2.65, rock size (D...
Riprap Shape	Riprap shape should be angular		
Riprap Class			
Riprap Class Name	CLASS I		
Riprap Class Order	1		
D15	4.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D50	6.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D85	9.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
D100	12.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
Layout			
Apron Length	6.000	ft	
Apron Depth	0.000	ft	
Apron Width (at apron end)	8.500	ft	
Computation Variables			
Tailwater Depth Used in Computations	0.600	ft	
Culvert Diameter Used in Calculations	1.500	ft	

OK Cancel

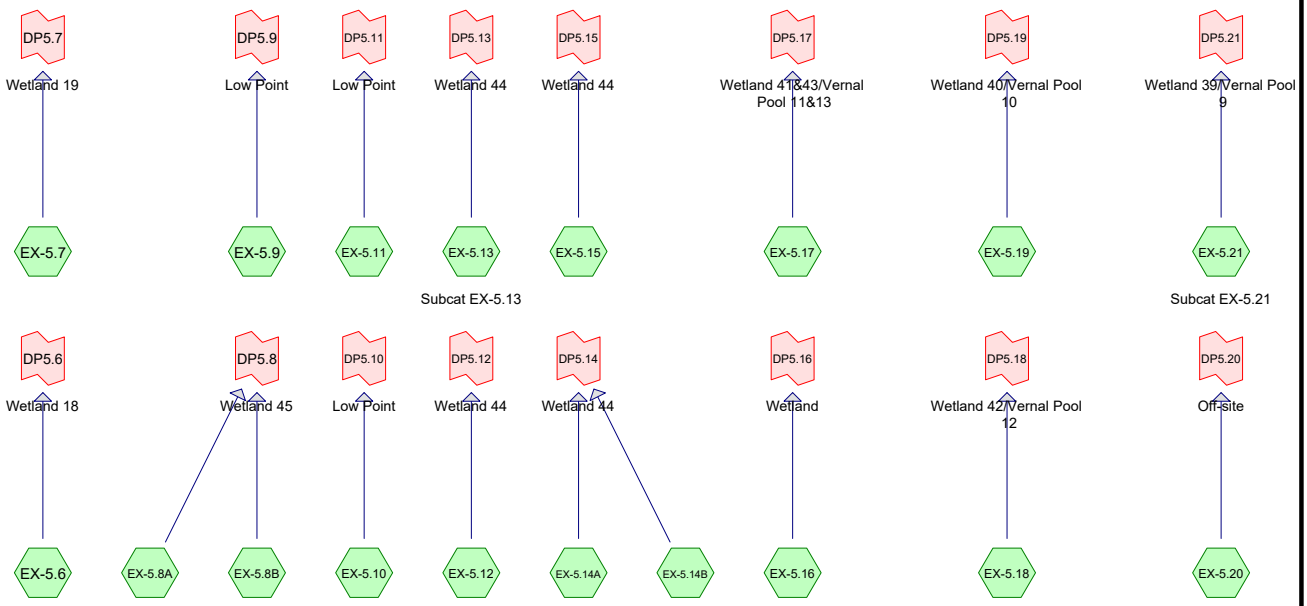
Stone Protection Dimensions:

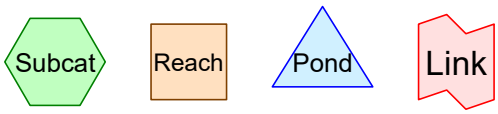
X = 6.0 ft.
Y = 8.5 ft.
Z = 14.0 in. (Minimum)
d_{50} = 6.5 in.

Appendix B – Standard 2 Computations and Supporting Information

The rainfall-runoff response of the Site under existing and proposed conditions was evaluated for storm events with recurrence intervals of 2, 10, 25 and 100-years. Rainfall volumes used for this analysis were based on the Stormwater Management Bylaw Regulations for the Town of Sudbury: 3.2, 4.8, 6.0, and 8.6 inches, respectively. Runoff coefficients for the pre- and post-development conditions, as previously shown in Tables 1 and 2 respectively, were determined using NRCS Technical Release 55 (TR-55) methodology as provided in HydroCAD. Drainage areas used in the analyses were described in previous sections and shown on Figures 2 and 3. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology.

HydroCAD Analysis: Existing Conditions





Routing Diagram for Sudbury_EX Segment 5_ResponsetoComments_REV_Full

Prepared by VHB, Printed 10/16/2020

HydroCAD® 10.10-3a s/n 01038 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.11: Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=554' Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.00"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.13: Subcat EX-5.13 Runoff Area=2.358 ac 0.83% Impervious Runoff Depth=0.01"
Flow Length=2,418' Tc=64.8 min CN=43/98 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.14A: Runoff Area=0.613 ac 1.80% Impervious Runoff Depth=0.01"
Flow Length=290' Tc=23.8 min CN=45/98 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.14B: Runoff Area=0.408 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=243' Tc=10.1 min CN=37/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.15: Runoff Area=0.454 ac 3.70% Impervious Runoff Depth=0.03"
Flow Length=575' Tc=51.5 min CN=49/98 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.21: Subcat EX-5.21 Runoff Area=0.334 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=194' Tc=12.0 min CN=37/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.8A: Runoff Area=0.697 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=256' Tc=19.3 min CN=36/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.8B: Runoff Area=0.322 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=280' Tc=24.1 min CN=40/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.9: Runoff Area=0.892 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=281' Tc=29.2 min CN=38/0 Runoff=0.0 cfs 0.000 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.12: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.13: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.14: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.15: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.16: Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.6: Wetland 18 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.8: Wetland 45 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 81.682 ac Runoff Volume = 0.004 af Average Runoff Depth = 0.00"
99.92% Pervious = 81.616 ac 0.08% Impervious = 0.067 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
26.6	504	0.0160	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
42.6	554	Total			

Summary for Subcatchment EX-5.12:

Runoff = 0.0 cfs @ 13.57 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13: Subcat EX-5.13

Runoff = 0.0 cfs @ 12.88 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.020	98	Water Surface, HSG D
1.679	30	Woods, Good, HSG A
0.169	77	Woods, Good, HSG D
2.358	44	Weighted Average
2.339	43	99.17% Pervious Area
0.020	98	0.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	78	0.0190	1.38		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
3.2	132	0.0189	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	88	0.1250	1.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
64.8	2,418	Total			

Summary for Subcatchment EX-5.14A:

Runoff = 0.0 cfs @ 12.31 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.146	39	>75% Grass cover, Good, HSG A
0.043	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.011	98	Water Surface, HSG D
0.294	30	Woods, Good, HSG A
0.095	77	Woods, Good, HSG D
0.613	46	Weighted Average
0.602	45	98.20% Pervious Area
0.011	98	1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0060	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.1	240	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.8	290	Total			

Summary for Subcatchment EX-5.14B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.060	39	>75% Grass cover, Good, HSG A
0.048	76	Gravel roads, HSG A
0.299	30	Woods, Good, HSG A
0.408	37	Weighted Average
0.408	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	193	0.0487	1.10		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	243	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.0 cfs @ 12.65 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
0.263	30	Woods, Good, HSG A
0.104	77	Woods, Good, HSG D
0.454	51	Weighted Average
0.437	49	96.30% Pervious Area
0.017	98	3.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	525	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
51.5	575	Total			

Summary for Subcatchment EX-5.16:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
7.220	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.549	37	Weighted Average
8.549	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21: Subcat EX-5.21

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
0.280	30	Woods, Good, HSG A
0.334	37	Weighted Average
0.334	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	144	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	194	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.098	76	Gravel roads, HSG A
0.598	30	Woods, Good, HSG A
0.697	36	Weighted Average
0.697	36	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.4	206	0.0248	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	256	Total			

Summary for Subcatchment EX-5.8B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.233	30	Woods, Good, HSG A
0.322	40	Weighted Average
0.322	40	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	230	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.1	280	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
0.738	30	Woods, Good, HSG A
0.892	38	Weighted Average
0.892	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.8	231	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	281	Total			

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.11: Low Point

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 13.57 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 13.57 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.13: Wetland 44

Inflow Area = 2.358 ac, 0.83% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.0 cfs @ 12.88 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.88 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.14: Wetland 44

Inflow Area = 1.021 ac, 1.08% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.0 cfs @ 12.31 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.31 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.15: Wetland 44

Inflow Area = 0.454 ac, 3.70% Impervious, Inflow Depth = 0.03" for 1-inch event
Inflow = 0.0 cfs @ 12.65 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.65 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.8: Wetland 45

Inflow Area = 1.019 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.9: Low Point

Inflow Area = 0.892 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.11: Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=554' Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.08"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=0.1 cfs 0.053 af

SubcatchmentEX-5.13: Subcat EX-5.13 Runoff Area=2.358 ac 0.83% Impervious Runoff Depth=0.06"
Flow Length=2,418' Tc=64.8 min CN=43/98 Runoff=0.0 cfs 0.011 af

SubcatchmentEX-5.14A: Runoff Area=0.613 ac 1.80% Impervious Runoff Depth=0.11"
Flow Length=290' Tc=23.8 min CN=45/98 Runoff=0.0 cfs 0.006 af

SubcatchmentEX-5.14B: Runoff Area=0.408 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=243' Tc=10.1 min CN=37/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.15: Runoff Area=0.454 ac 3.70% Impervious Runoff Depth=0.24"
Flow Length=575' Tc=51.5 min CN=49/98 Runoff=0.0 cfs 0.009 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=1.2 cfs 0.305 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=0.0 cfs 0.018 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.21: Subcat EX-5.21 Runoff Area=0.334 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=194' Tc=12.0 min CN=37/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.8A: Runoff Area=0.697 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=256' Tc=19.3 min CN=36/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.8B: Runoff Area=0.322 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=280' Tc=24.1 min CN=40/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.9: Runoff Area=0.892 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=281' Tc=29.2 min CN=38/0 Runoff=0.0 cfs 0.000 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.12: Wetland 44 Inflow=0.1 cfs 0.053 af
Primary=0.1 cfs 0.053 af

Link DP5.13: Wetland 44 Inflow=0.0 cfs 0.011 af
Primary=0.0 cfs 0.011 af

Link DP5.14: Wetland 44 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP5.15: Wetland 44 Inflow=0.0 cfs 0.009 af
Primary=0.0 cfs 0.009 af

Link DP5.16: Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=1.2 cfs 0.305 af
Primary=1.2 cfs 0.305 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=0.0 cfs 0.018 af
Primary=0.0 cfs 0.018 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.6: Wetland 18 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.8: Wetland 45 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.9: Low Point

Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 81.682 ac Runoff Volume = 0.401 af Average Runoff Depth = 0.06"
99.92% Pervious = 81.616 ac 0.08% Impervious = 0.067 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
26.6	504	0.0160	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
42.6	554	Total			

Summary for Subcatchment EX-5.12:

Runoff = 0.1 cfs @ 16.64 hrs, Volume= 0.053 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13: Subcat EX-5.13

Runoff = 0.0 cfs @ 12.82 hrs, Volume= 0.011 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.020	98	Water Surface, HSG D
1.679	30	Woods, Good, HSG A
0.169	77	Woods, Good, HSG D
2.358	44	Weighted Average
2.339	43	99.17% Pervious Area
0.020	98	0.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	78	0.0190	1.38		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
3.2	132	0.0189	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	88	0.1250	1.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
64.8	2,418	Total			

Summary for Subcatchment EX-5.14A:

Runoff = 0.0 cfs @ 12.30 hrs, Volume= 0.006 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.146	39	>75% Grass cover, Good, HSG A
0.043	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.011	98	Water Surface, HSG D
0.294	30	Woods, Good, HSG A
0.095	77	Woods, Good, HSG D
0.613	46	Weighted Average
0.602	45	98.20% Pervious Area
0.011	98	1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0060	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.1	240	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.8	290	Total			

Summary for Subcatchment EX-5.14B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.060	39	>75% Grass cover, Good, HSG A
0.048	76	Gravel roads, HSG A
0.299	30	Woods, Good, HSG A
0.408	37	Weighted Average
0.408	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	193	0.0487	1.10		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	243	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.0 cfs @ 12.76 hrs, Volume= 0.009 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
0.263	30	Woods, Good, HSG A
0.104	77	Woods, Good, HSG D
0.454	51	Weighted Average
0.437	49	96.30% Pervious Area
0.017	98	3.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	525	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
51.5	575	Total			

Summary for Subcatchment EX-5.16:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
7.220	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.549	37	Weighted Average
8.549	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 1.2 cfs @ 12.39 hrs, Volume= 0.305 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 0.0 cfs @ 21.65 hrs, Volume= 0.018 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21: Subcat EX-5.21

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
0.280	30	Woods, Good, HSG A
0.334	37	Weighted Average
0.334	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	144	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	194	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.098	76	Gravel roads, HSG A
0.598	30	Woods, Good, HSG A
0.697	36	Weighted Average
0.697	36	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.4	206	0.0248	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	256	Total			

Summary for Subcatchment EX-5.8B:

Runoff = 0.0 cfs @ 23.27 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.233	30	Woods, Good, HSG A
0.322	40	Weighted Average
0.322	40	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	230	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.1	280	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.0 cfs @ 24.17 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
0.738	30	Woods, Good, HSG A
0.892	38	Weighted Average
0.892	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.8	231	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	281	Total			

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.11: Low Point

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.08" for 2-year event
Inflow = 0.1 cfs @ 16.64 hrs, Volume= 0.053 af
Primary = 0.1 cfs @ 16.64 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.13: Wetland 44

Inflow Area = 2.358 ac, 0.83% Impervious, Inflow Depth = 0.06" for 2-year event
Inflow = 0.0 cfs @ 12.82 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 12.82 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.14: Wetland 44

Inflow Area = 1.021 ac, 1.08% Impervious, Inflow Depth = 0.07" for 2-year event
Inflow = 0.0 cfs @ 12.30 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 12.30 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.15: Wetland 44

Inflow Area = 0.454 ac, 3.70% Impervious, Inflow Depth = 0.24" for 2-year event
Inflow = 0.0 cfs @ 12.76 hrs, Volume= 0.009 af
Primary = 0.0 cfs @ 12.76 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 0.20" for 2-year event
Inflow = 1.2 cfs @ 12.39 hrs, Volume= 0.305 af
Primary = 1.2 cfs @ 12.39 hrs, Volume= 0.305 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.02" for 2-year event
Inflow = 0.0 cfs @ 21.65 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 21.65 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.8: Wetland 45

Inflow Area = 1.019 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 23.27 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.27 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.9: Low Point

Inflow Area = 0.892 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 24.17 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.17 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.003 af

SubcatchmentEX-5.11: Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=554' Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.53"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=0.8 cfs 0.362 af

SubcatchmentEX-5.13: Subcat EX-5.13 Runoff Area=2.358 ac 0.83% Impervious Runoff Depth=0.42"
Flow Length=2,418' Tc=64.8 min CN=43/98 Runoff=0.2 cfs 0.082 af

SubcatchmentEX-5.14A: Runoff Area=0.613 ac 1.80% Impervious Runoff Depth=0.55"
Flow Length=290' Tc=23.8 min CN=45/98 Runoff=0.1 cfs 0.028 af

SubcatchmentEX-5.14B: Runoff Area=0.408 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=243' Tc=10.1 min CN=37/0 Runoff=0.0 cfs 0.005 af

SubcatchmentEX-5.15: Runoff Area=0.454 ac 3.70% Impervious Runoff Depth=0.83"
Flow Length=575' Tc=51.5 min CN=49/98 Runoff=0.1 cfs 0.032 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=0.2 cfs 0.109 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=0.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=13.1 cfs 1.306 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.34"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=0.6 cfs 0.295 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.006 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.21: Subcat EX-5.21 Runoff Area=0.334 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=194' Tc=12.0 min CN=37/0 Runoff=0.0 cfs 0.004 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.0 cfs 0.011 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.006 af

SubcatchmentEX-5.8A: Runoff Area=0.697 ac 0.00% Impervious Runoff Depth=0.12"
Flow Length=256' Tc=19.3 min CN=36/0 Runoff=0.0 cfs 0.007 af

SubcatchmentEX-5.8B: Runoff Area=0.322 ac 0.00% Impervious Runoff Depth=0.26"
Flow Length=280' Tc=24.1 min CN=40/0 Runoff=0.0 cfs 0.007 af

SubcatchmentEX-5.9: Runoff Area=0.892 ac 0.00% Impervious Runoff Depth=0.19"
Flow Length=281' Tc=29.2 min CN=38/0 Runoff=0.0 cfs 0.014 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.12: Wetland 44 Inflow=0.8 cfs 0.362 af
Primary=0.8 cfs 0.362 af

Link DP5.13: Wetland 44 Inflow=0.2 cfs 0.082 af
Primary=0.2 cfs 0.082 af

Link DP5.14: Wetland 44 Inflow=0.1 cfs 0.033 af
Primary=0.1 cfs 0.033 af

Link DP5.15: Wetland 44 Inflow=0.1 cfs 0.032 af
Primary=0.1 cfs 0.032 af

Link DP5.16: Wetland Inflow=0.2 cfs 0.109 af
Primary=0.2 cfs 0.109 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=13.1 cfs 1.306 af
Primary=13.1 cfs 1.306 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=0.6 cfs 0.295 af
Primary=0.6 cfs 0.295 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP5.6: Wetland 18 Inflow=0.0 cfs 0.011 af
Primary=0.0 cfs 0.011 af

Link DP5.7: Wetland 19 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP5.8: Wetland 45 Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP5.9: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Total Runoff Area = 81.682 ac Runoff Volume = 2.279 af Average Runoff Depth = 0.33"
99.92% Pervious = 81.616 ac 0.08% Impervious = 0.067 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 22.52 hrs, Volume= 0.003 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 23.81 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
26.6	504	0.0160	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
42.6	554	Total			

Summary for Subcatchment EX-5.12:

Runoff = 0.8 cfs @ 14.11 hrs, Volume= 0.362 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13: Subcat EX-5.13

Runoff = 0.2 cfs @ 13.24 hrs, Volume= 0.082 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.020	98	Water Surface, HSG D
1.679	30	Woods, Good, HSG A
0.169	77	Woods, Good, HSG D
2.358	44	Weighted Average
2.339	43	99.17% Pervious Area
0.020	98	0.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	78	0.0190	1.38		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
3.2	132	0.0189	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	88	0.1250	1.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
64.8	2,418	Total			

Summary for Subcatchment EX-5.14A:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.028 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.146	39	>75% Grass cover, Good, HSG A
0.043	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.011	98	Water Surface, HSG D
0.294	30	Woods, Good, HSG A
0.095	77	Woods, Good, HSG D
0.613	46	Weighted Average
0.602	45	98.20% Pervious Area
0.011	98	1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0060	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.1	240	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.8	290	Total			

Summary for Subcatchment EX-5.14B:

Runoff = 0.0 cfs @ 13.86 hrs, Volume= 0.005 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.060	39	>75% Grass cover, Good, HSG A
0.048	76	Gravel roads, HSG A
0.299	30	Woods, Good, HSG A
0.408	37	Weighted Average
0.408	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	193	0.0487	1.10		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	243	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.1 cfs @ 12.87 hrs, Volume= 0.032 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
0.263	30	Woods, Good, HSG A
0.104	77	Woods, Good, HSG D
0.454	51	Weighted Average
0.437	49	96.30% Pervious Area
0.017	98	3.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	525	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
51.5	575	Total			

Summary for Subcatchment EX-5.16:

Runoff = 0.2 cfs @ 14.04 hrs, Volume= 0.109 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
7.220	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.549	37	Weighted Average
8.549	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 13.1 cfs @ 12.12 hrs, Volume= 1.306 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 0.6 cfs @ 13.56 hrs, Volume= 0.295 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 15.24 hrs, Volume= 0.006 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 23.48 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21: Subcat EX-5.21

Runoff = 0.0 cfs @ 13.88 hrs, Volume= 0.004 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
0.280	30	Woods, Good, HSG A
0.334	37	Weighted Average
0.334	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	144	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	194	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.0 cfs @ 23.86 hrs, Volume= 0.011 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8A:

Runoff = 0.0 cfs @ 14.95 hrs, Volume= 0.007 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.098	76	Gravel roads, HSG A
0.598	30	Woods, Good, HSG A
0.697	36	Weighted Average
0.697	36	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.4	206	0.0248	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	256	Total			

Summary for Subcatchment EX-5.8B:

Runoff = 0.0 cfs @ 12.72 hrs, Volume= 0.007 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.233	30	Woods, Good, HSG A
0.322	40	Weighted Average
0.322	40	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	230	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.1	280	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.0 cfs @ 13.92 hrs, Volume= 0.014 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
0.738	30	Woods, Good, HSG A
0.892	38	Weighted Average
0.892	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.8	231	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	281	Total			

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.02" for 10-year event
Inflow = 0.0 cfs @ 22.52 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 22.52 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.11: Low Point

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.81 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.81 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.53" for 10-year event
Inflow = 0.8 cfs @ 14.11 hrs, Volume= 0.362 af
Primary = 0.8 cfs @ 14.11 hrs, Volume= 0.362 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.13: Wetland 44

Inflow Area = 2.358 ac, 0.83% Impervious, Inflow Depth = 0.42" for 10-year event
Inflow = 0.2 cfs @ 13.24 hrs, Volume= 0.082 af
Primary = 0.2 cfs @ 13.24 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.14: Wetland 44

Inflow Area = 1.021 ac, 1.08% Impervious, Inflow Depth = 0.39" for 10-year event
Inflow = 0.1 cfs @ 12.54 hrs, Volume= 0.033 af
Primary = 0.1 cfs @ 12.54 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.15: Wetland 44

Inflow Area = 0.454 ac, 3.70% Impervious, Inflow Depth = 0.83" for 10-year event
Inflow = 0.1 cfs @ 12.87 hrs, Volume= 0.032 af
Primary = 0.1 cfs @ 12.87 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 0.15" for 10-year event
Inflow = 0.2 cfs @ 14.04 hrs, Volume= 0.109 af
Primary = 0.2 cfs @ 14.04 hrs, Volume= 0.109 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 0.85" for 10-year event
Inflow = 13.1 cfs @ 12.12 hrs, Volume= 1.306 af
Primary = 13.1 cfs @ 12.12 hrs, Volume= 1.306 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.34" for 10-year event
Inflow = 0.6 cfs @ 13.56 hrs, Volume= 0.295 af
Primary = 0.6 cfs @ 13.56 hrs, Volume= 0.295 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.10" for 10-year event
Inflow = 0.0 cfs @ 15.24 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 15.24 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.48 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 23.48 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 0.00% Impervious, Inflow Depth = 0.15" for 10-year event
Inflow = 0.0 cfs @ 13.88 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 13.88 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.86 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 23.86 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.8: Wetland 45

Inflow Area = 1.019 ac, 0.00% Impervious, Inflow Depth = 0.17" for 10-year event
Inflow = 0.0 cfs @ 13.96 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 13.96 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.9: Low Point

Inflow Area = 0.892 ac, 0.00% Impervious, Inflow Depth = 0.19" for 10-year event
Inflow = 0.0 cfs @ 13.92 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 13.92 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.13"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.018 af

SubcatchmentEX-5.11: Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=554' Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.003 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.98"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=1.7 cfs 0.664 af

SubcatchmentEX-5.13: Subcat EX-5.13 Runoff Area=2.358 ac 0.83% Impervious Runoff Depth=0.80"
Flow Length=2,418' Tc=64.8 min CN=43/98 Runoff=0.5 cfs 0.158 af

SubcatchmentEX-5.14A: Runoff Area=0.613 ac 1.80% Impervious Runoff Depth=0.99"
Flow Length=290' Tc=23.8 min CN=45/98 Runoff=0.3 cfs 0.050 af

SubcatchmentEX-5.14B: Runoff Area=0.408 ac 0.00% Impervious Runoff Depth=0.40"
Flow Length=243' Tc=10.1 min CN=37/0 Runoff=0.1 cfs 0.014 af

SubcatchmentEX-5.15: Runoff Area=0.454 ac 3.70% Impervious Runoff Depth=1.36"
Flow Length=575' Tc=51.5 min CN=49/98 Runoff=0.2 cfs 0.052 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=0.40"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=1.0 cfs 0.286 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=1.41"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=25.7 cfs 2.175 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.70"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=1.8 cfs 0.606 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.017 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.009 af

SubcatchmentEX-5.21: Subcat EX-5.21 Runoff Area=0.334 ac 0.00% Impervious Runoff Depth=0.40"
Flow Length=194' Tc=12.0 min CN=37/0 Runoff=0.0 cfs 0.011 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.2 cfs 0.136 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.1 cfs 0.077 af

SubcatchmentEX-5.8A: Runoff Area=0.697 ac 0.00% Impervious Runoff Depth=0.35"
Flow Length=256' Tc=19.3 min CN=36/0 Runoff=0.1 cfs 0.020 af

SubcatchmentEX-5.8B: Runoff Area=0.322 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=280' Tc=24.1 min CN=40/0 Runoff=0.1 cfs 0.015 af

SubcatchmentEX-5.9: Runoff Area=0.892 ac 0.00% Impervious Runoff Depth=0.46"
Flow Length=281' Tc=29.2 min CN=38/0 Runoff=0.1 cfs 0.034 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.018 af
Primary=0.0 cfs 0.018 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP5.12: Wetland 44 Inflow=1.7 cfs 0.664 af
Primary=1.7 cfs 0.664 af

Link DP5.13: Wetland 44 Inflow=0.5 cfs 0.158 af
Primary=0.5 cfs 0.158 af

Link DP5.14: Wetland 44 Inflow=0.4 cfs 0.064 af
Primary=0.4 cfs 0.064 af

Link DP5.15: Wetland 44 Inflow=0.2 cfs 0.052 af
Primary=0.2 cfs 0.052 af

Link DP5.16: Wetland Inflow=1.0 cfs 0.286 af
Primary=1.0 cfs 0.286 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=25.7 cfs 2.175 af
Primary=25.7 cfs 2.175 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=1.8 cfs 0.606 af
Primary=1.8 cfs 0.606 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.017 af
Primary=0.0 cfs 0.017 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.009 af
Primary=0.0 cfs 0.009 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.011 af
Primary=0.0 cfs 0.011 af

Link DP5.6: Wetland 18 Inflow=0.2 cfs 0.136 af
Primary=0.2 cfs 0.136 af

Link DP5.7: Wetland 19 Inflow=0.1 cfs 0.077 af
Primary=0.1 cfs 0.077 af

Link DP5.8: Wetland 45 Inflow=0.1 cfs 0.036 af
Primary=0.1 cfs 0.036 af

Link DP5.9: Low Point Inflow=0.1 cfs 0.034 af
Primary=0.1 cfs 0.034 af

Total Runoff Area = 81.682 ac Runoff Volume = 4.347 af Average Runoff Depth = 0.64"
99.92% Pervious = 81.616 ac 0.08% Impervious = 0.067 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 15.59 hrs, Volume= 0.018 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 15.76 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
26.6	504	0.0160	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
42.6	554	Total			

Summary for Subcatchment EX-5.12:

Runoff = 1.7 cfs @ 13.97 hrs, Volume= 0.664 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13: Subcat EX-5.13

Runoff = 0.5 cfs @ 13.10 hrs, Volume= 0.158 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.020	98	Water Surface, HSG D
1.679	30	Woods, Good, HSG A
0.169	77	Woods, Good, HSG D
2.358	44	Weighted Average
2.339	43	99.17% Pervious Area
0.020	98	0.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	78	0.0190	1.38		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
3.2	132	0.0189	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	88	0.1250	1.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
64.8	2,418	Total			

Summary for Subcatchment EX-5.14A:

Runoff = 0.3 cfs @ 12.45 hrs, Volume= 0.050 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.146	39	>75% Grass cover, Good, HSG A
0.043	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.011	98	Water Surface, HSG D
0.294	30	Woods, Good, HSG A
0.095	77	Woods, Good, HSG D
0.613	46	Weighted Average
0.602	45	98.20% Pervious Area
0.011	98	1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0060	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.1	240	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.8	290	Total			

Summary for Subcatchment EX-5.14B:

Runoff = 0.1 cfs @ 12.44 hrs, Volume= 0.014 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.060	39	>75% Grass cover, Good, HSG A
0.048	76	Gravel roads, HSG A
0.299	30	Woods, Good, HSG A
0.408	37	Weighted Average
0.408	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	193	0.0487	1.10		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	243	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.2 cfs @ 12.81 hrs, Volume= 0.052 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
0.263	30	Woods, Good, HSG A
0.104	77	Woods, Good, HSG D
0.454	51	Weighted Average
0.437	49	96.30% Pervious Area
0.017	98	3.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	525	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
51.5	575	Total			

Summary for Subcatchment EX-5.16:

Runoff = 1.0 cfs @ 12.63 hrs, Volume= 0.286 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
7.220	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.549	37	Weighted Average
8.549	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 25.7 cfs @ 12.11 hrs, Volume= 2.175 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 1.8 cfs @ 13.31 hrs, Volume= 0.606 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 12.67 hrs, Volume= 0.017 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 15.45 hrs, Volume= 0.009 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21: Subcat EX-5.21

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.011 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
0.280	30	Woods, Good, HSG A
0.334	37	Weighted Average
0.334	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	144	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	194	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.2 cfs @ 15.83 hrs, Volume= 0.136 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.1 cfs @ 16.12 hrs, Volume= 0.077 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8A:

Runoff = 0.1 cfs @ 12.59 hrs, Volume= 0.020 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.098	76	Gravel roads, HSG A
0.598	30	Woods, Good, HSG A
0.697	36	Weighted Average
0.697	36	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.4	206	0.0248	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	256	Total			

Summary for Subcatchment EX-5.8B:

Runoff = 0.1 cfs @ 12.56 hrs, Volume= 0.015 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.233	30	Woods, Good, HSG A
0.322	40	Weighted Average
0.322	40	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	230	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.1	280	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.1 cfs @ 12.69 hrs, Volume= 0.034 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
0.738	30	Woods, Good, HSG A
0.892	38	Weighted Average
0.892	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.8	231	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	281	Total			

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.13" for 25-year event
Inflow = 0.0 cfs @ 15.59 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 15.59 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.11: Low Point

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.0 cfs @ 15.76 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.76 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.98" for 25-year event
Inflow = 1.7 cfs @ 13.97 hrs, Volume= 0.664 af
Primary = 1.7 cfs @ 13.97 hrs, Volume= 0.664 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.13: Wetland 44

Inflow Area = 2.358 ac, 0.83% Impervious, Inflow Depth = 0.80" for 25-year event
Inflow = 0.5 cfs @ 13.10 hrs, Volume= 0.158 af
Primary = 0.5 cfs @ 13.10 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.14: Wetland 44

Inflow Area = 1.021 ac, 1.08% Impervious, Inflow Depth = 0.75" for 25-year event
Inflow = 0.4 cfs @ 12.44 hrs, Volume= 0.064 af
Primary = 0.4 cfs @ 12.44 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.15: Wetland 44

Inflow Area = 0.454 ac, 3.70% Impervious, Inflow Depth = 1.36" for 25-year event
Inflow = 0.2 cfs @ 12.81 hrs, Volume= 0.052 af
Primary = 0.2 cfs @ 12.81 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 0.40" for 25-year event
Inflow = 1.0 cfs @ 12.63 hrs, Volume= 0.286 af
Primary = 1.0 cfs @ 12.63 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 1.41" for 25-year event
Inflow = 25.7 cfs @ 12.11 hrs, Volume= 2.175 af
Primary = 25.7 cfs @ 12.11 hrs, Volume= 2.175 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.70" for 25-year event
Inflow = 1.8 cfs @ 13.31 hrs, Volume= 0.606 af
Primary = 1.8 cfs @ 13.31 hrs, Volume= 0.606 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.30" for 25-year event
Inflow = 0.0 cfs @ 12.67 hrs, Volume= 0.017 af
Primary = 0.0 cfs @ 12.67 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.0 cfs @ 15.45 hrs, Volume= 0.009 af
Primary = 0.0 cfs @ 15.45 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 0.00% Impervious, Inflow Depth = 0.40" for 25-year event
Inflow = 0.0 cfs @ 12.47 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 12.47 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.2 cfs @ 15.83 hrs, Volume= 0.136 af
Primary = 0.2 cfs @ 15.83 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 16.12 hrs, Volume= 0.077 af
Primary = 0.1 cfs @ 16.12 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.8: Wetland 45

Inflow Area = 1.019 ac, 0.00% Impervious, Inflow Depth = 0.42" for 25-year event
Inflow = 0.1 cfs @ 12.59 hrs, Volume= 0.036 af
Primary = 0.1 cfs @ 12.59 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.9: Low Point

Inflow Area = 0.892 ac, 0.00% Impervious, Inflow Depth = 0.46" for 25-year event
Inflow = 0.1 cfs @ 12.69 hrs, Volume= 0.034 af
Primary = 0.1 cfs @ 12.69 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.65"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.2 cfs 0.090 af

SubcatchmentEX-5.11: Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=554' Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.018 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=2.19"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=4.6 cfs 1.487 af

SubcatchmentEX-5.13: Subcat EX-5.13 Runoff Area=2.358 ac 0.83% Impervious Runoff Depth=1.90"
Flow Length=2,418' Tc=64.8 min CN=43/98 Runoff=1.6 cfs 0.373 af

SubcatchmentEX-5.14A: Runoff Area=0.613 ac 1.80% Impervious Runoff Depth=2.17"
Flow Length=290' Tc=23.8 min CN=45/98 Runoff=0.8 cfs 0.111 af

SubcatchmentEX-5.14B: Runoff Area=0.408 ac 0.00% Impervious Runoff Depth=1.21"
Flow Length=243' Tc=10.1 min CN=37/0 Runoff=0.3 cfs 0.041 af

SubcatchmentEX-5.15: Runoff Area=0.454 ac 3.70% Impervious Runoff Depth=2.73"
Flow Length=575' Tc=51.5 min CN=49/98 Runoff=0.6 cfs 0.103 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=1.21"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=5.2 cfs 0.865 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=2.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=58.0 cfs 4.396 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=1.73"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=5.9 cfs 1.511 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.3 cfs 0.059 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.2 cfs 0.053 af

SubcatchmentEX-5.21: Subcat EX-5.21 Runoff Area=0.334 ac 0.00% Impervious Runoff Depth=1.21"
Flow Length=194' Tc=12.0 min CN=37/0 Runoff=0.2 cfs 0.034 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=2.1 cfs 0.787 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=1.0 cfs 0.447 af

SubcatchmentEX-5.8A: Runoff Area=0.697 ac 0.00% Impervious Runoff Depth=1.11"
Flow Length=256' Tc=19.3 min CN=36/0 Runoff=0.4 cfs 0.065 af

SubcatchmentEX-5.8B: Runoff Area=0.322 ac 0.00% Impervious Runoff Depth=1.52"
Flow Length=280' Tc=24.1 min CN=40/0 Runoff=0.3 cfs 0.041 af

SubcatchmentEX-5.9: Runoff Area=0.892 ac 0.00% Impervious Runoff Depth=1.32"
Flow Length=281' Tc=29.2 min CN=38/0 Runoff=0.6 cfs 0.098 af

Link DP5.10: Low Point Inflow=0.2 cfs 0.090 af
Primary=0.2 cfs 0.090 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.018 af
Primary=0.0 cfs 0.018 af

Link DP5.12: Wetland 44 Inflow=4.6 cfs 1.487 af
Primary=4.6 cfs 1.487 af

Link DP5.13: Wetland 44 Inflow=1.6 cfs 0.373 af
Primary=1.6 cfs 0.373 af

Link DP5.14: Wetland 44 Inflow=1.1 cfs 0.152 af
Primary=1.1 cfs 0.152 af

Link DP5.15: Wetland 44 Inflow=0.6 cfs 0.103 af
Primary=0.6 cfs 0.103 af

Link DP5.16: Wetland Inflow=5.2 cfs 0.865 af
Primary=5.2 cfs 0.865 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=58.0 cfs 4.396 af
Primary=58.0 cfs 4.396 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=5.9 cfs 1.511 af
Primary=5.9 cfs 1.511 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.3 cfs 0.059 af
Primary=0.3 cfs 0.059 af

Link DP5.20: Off-site Inflow=0.2 cfs 0.053 af
Primary=0.2 cfs 0.053 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.2 cfs 0.034 af
Primary=0.2 cfs 0.034 af

Link DP5.6: Wetland 18 Inflow=2.1 cfs 0.787 af
Primary=2.1 cfs 0.787 af

Link DP5.7: Wetland 19 Inflow=1.0 cfs 0.447 af
Primary=1.0 cfs 0.447 af

Link DP5.8: Wetland 45 Inflow=0.7 cfs 0.106 af
Primary=0.7 cfs 0.106 af

Link DP5.9: Low Point Inflow=0.6 cfs 0.098 af
Primary=0.6 cfs 0.098 af

Total Runoff Area = 81.682 ac Runoff Volume = 10.578 af Average Runoff Depth = 1.55"
99.92% Pervious = 81.616 ac 0.08% Impervious = 0.067 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.2 cfs @ 13.02 hrs, Volume= 0.090 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 12.93 hrs, Volume= 0.018 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
26.6	504	0.0160	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
42.6	554	Total			

Summary for Subcatchment EX-5.12:

Runoff = 4.6 cfs @ 13.72 hrs, Volume= 1.487 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13: Subcat EX-5.13

Runoff = 1.6 cfs @ 13.03 hrs, Volume= 0.373 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.020	98	Water Surface, HSG D
1.679	30	Woods, Good, HSG A
0.169	77	Woods, Good, HSG D
2.358	44	Weighted Average
2.339	43	99.17% Pervious Area
0.020	98	0.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	78	0.0190	1.38		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
3.2	132	0.0189	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	88	0.1250	1.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
64.8	2,418	Total			

Summary for Subcatchment EX-5.14A:

Runoff = 0.8 cfs @ 12.38 hrs, Volume= 0.111 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.146	39	>75% Grass cover, Good, HSG A
0.043	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.011	98	Water Surface, HSG D
0.294	30	Woods, Good, HSG A
0.095	77	Woods, Good, HSG D
0.613	46	Weighted Average
0.602	45	98.20% Pervious Area
0.011	98	1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0060	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.1	240	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.8	290	Total			

Summary for Subcatchment EX-5.14B:

Runoff = 0.3 cfs @ 12.19 hrs, Volume= 0.041 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.060	39	>75% Grass cover, Good, HSG A
0.048	76	Gravel roads, HSG A
0.299	30	Woods, Good, HSG A
0.408	37	Weighted Average
0.408	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	193	0.0487	1.10		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	243	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.6 cfs @ 12.76 hrs, Volume= 0.103 af, Depth= 2.73"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
0.263	30	Woods, Good, HSG A
0.104	77	Woods, Good, HSG D
0.454	51	Weighted Average
0.437	49	96.30% Pervious Area
0.017	98	3.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	525	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
51.5	575	Total			

Summary for Subcatchment EX-5.16:

Runoff = 5.2 cfs @ 12.43 hrs, Volume= 0.865 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
7.220	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.549	37	Weighted Average
8.549	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 58.0 cfs @ 12.10 hrs, Volume= 4.396 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 5.9 cfs @ 13.22 hrs, Volume= 1.511 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.3 cfs @ 12.46 hrs, Volume= 0.059 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.2 cfs @ 12.58 hrs, Volume= 0.053 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21: Subcat EX-5.21

Runoff = 0.2 cfs @ 12.23 hrs, Volume= 0.034 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
0.280	30	Woods, Good, HSG A
0.334	37	Weighted Average
0.334	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	144	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	194	Total			

Summary for Subcatchment EX-5.6:

Runoff = 2.1 cfs @ 12.98 hrs, Volume= 0.787 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 1.0 cfs @ 13.35 hrs, Volume= 0.447 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8A:

Runoff = 0.4 cfs @ 12.41 hrs, Volume= 0.065 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.098	76	Gravel roads, HSG A
0.598	30	Woods, Good, HSG A
0.697	36	Weighted Average
0.697	36	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.4	206	0.0248	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	256	Total			

Summary for Subcatchment EX-5.8B:

Runoff = 0.3 cfs @ 12.42 hrs, Volume= 0.041 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.233	30	Woods, Good, HSG A
0.322	40	Weighted Average
0.322	40	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	230	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.1	280	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.6 cfs @ 12.53 hrs, Volume= 0.098 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
0.738	30	Woods, Good, HSG A
0.892	38	Weighted Average
0.892	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.8	231	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	281	Total			

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.65" for 100-year event
Inflow = 0.2 cfs @ 13.02 hrs, Volume= 0.090 af
Primary = 0.2 cfs @ 13.02 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.11: Low Point

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.0 cfs @ 12.93 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 12.93 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 2.19" for 100-year event
Inflow = 4.6 cfs @ 13.72 hrs, Volume= 1.487 af
Primary = 4.6 cfs @ 13.72 hrs, Volume= 1.487 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.13: Wetland 44

Inflow Area = 2.358 ac, 0.83% Impervious, Inflow Depth = 1.90" for 100-year event
Inflow = 1.6 cfs @ 13.03 hrs, Volume= 0.373 af
Primary = 1.6 cfs @ 13.03 hrs, Volume= 0.373 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.14: Wetland 44

Inflow Area = 1.021 ac, 1.08% Impervious, Inflow Depth = 1.79" for 100-year event
Inflow = 1.1 cfs @ 12.35 hrs, Volume= 0.152 af
Primary = 1.1 cfs @ 12.35 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.15: Wetland 44

Inflow Area = 0.454 ac, 3.70% Impervious, Inflow Depth = 2.73" for 100-year event
Inflow = 0.6 cfs @ 12.76 hrs, Volume= 0.103 af
Primary = 0.6 cfs @ 12.76 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 1.21" for 100-year event
Inflow = 5.2 cfs @ 12.43 hrs, Volume= 0.865 af
Primary = 5.2 cfs @ 12.43 hrs, Volume= 0.865 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 2.85" for 100-year event
Inflow = 58.0 cfs @ 12.10 hrs, Volume= 4.396 af
Primary = 58.0 cfs @ 12.10 hrs, Volume= 4.396 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 1.73" for 100-year event
Inflow = 5.9 cfs @ 13.22 hrs, Volume= 1.511 af
Primary = 5.9 cfs @ 13.22 hrs, Volume= 1.511 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 1.02" for 100-year event
Inflow = 0.3 cfs @ 12.46 hrs, Volume= 0.059 af
Primary = 0.3 cfs @ 12.46 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.2 cfs @ 12.58 hrs, Volume= 0.053 af
Primary = 0.2 cfs @ 12.58 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 0.00% Impervious, Inflow Depth = 1.21" for 100-year event
Inflow = 0.2 cfs @ 12.23 hrs, Volume= 0.034 af
Primary = 0.2 cfs @ 12.23 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 2.1 cfs @ 12.98 hrs, Volume= 0.787 af
Primary = 2.1 cfs @ 12.98 hrs, Volume= 0.787 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 1.0 cfs @ 13.35 hrs, Volume= 0.447 af
Primary = 1.0 cfs @ 13.35 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP5.8: Wetland 45

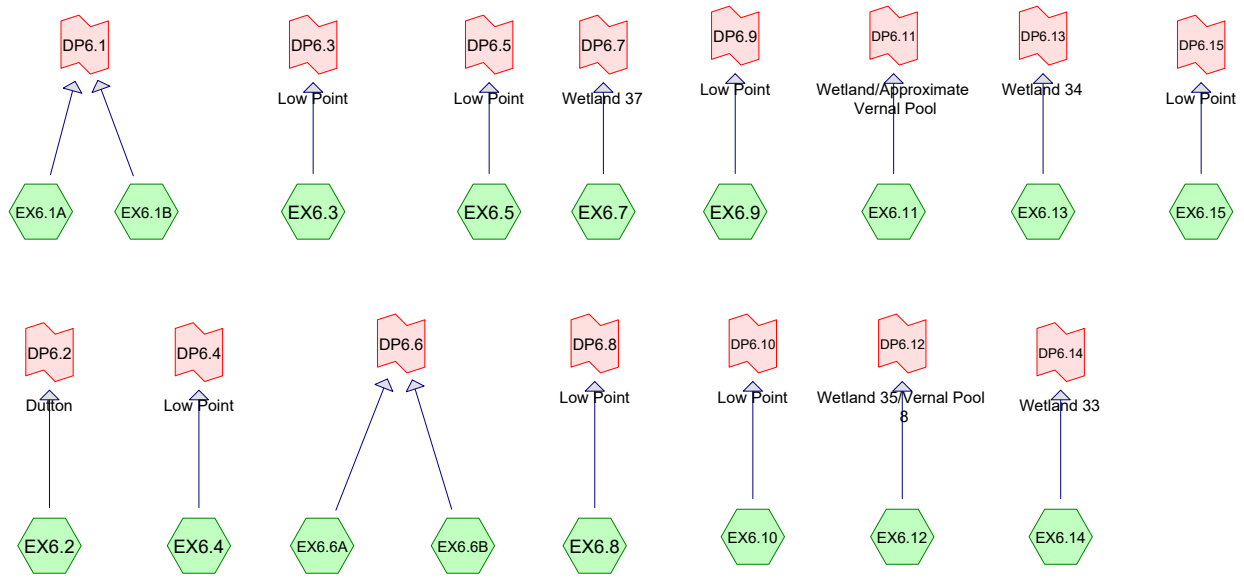
Inflow Area = 1.019 ac, 0.00% Impervious, Inflow Depth = 1.24" for 100-year event
Inflow = 0.7 cfs @ 12.42 hrs, Volume= 0.106 af
Primary = 0.7 cfs @ 12.42 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

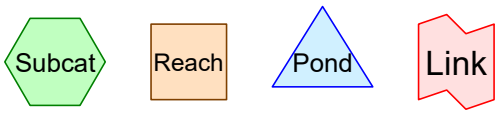
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.9: Low Point

Inflow Area = 0.892 ac, 0.00% Impervious, Inflow Depth = 1.32" for 100-year event
Inflow = 0.6 cfs @ 12.53 hrs, Volume= 0.098 af
Primary = 0.6 cfs @ 12.53 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

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





Routing Diagram for 14009.00-EX-Segment 6_ResponsetoComments_REV_Full

Prepared by VHB, Printed 10/16/2020

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.10: Runoff Area=0.330 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=169' Tc=17.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.11: Runoff Area=0.092 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=62' Tc=10.1 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.12: Runoff Area=0.135 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=50' Slope=0.2860 '/' Tc=7.3 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.13: Runoff Area=0.474 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=48' Slope=0.1460 '/' Tc=9.2 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.14: Runoff Area=0.617 ac 1.36% Impervious Runoff Depth=0.00"
Flow Length=126' Tc=22.6 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=0.15"
Tc=6.0 min CN=84 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.1A: Runoff Area=0.109 ac 20.30% Impervious Runoff Depth=0.00"
Flow Length=153' Tc=15.7 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.1B: Runoff Area=0.685 ac 2.30% Impervious Runoff Depth=0.00"
Flow Length=814' Tc=61.5 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.00"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.00"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=0.00"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.5: Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=96' Tc=15.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.6A: Runoff Area=0.620 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=890' Tc=86.4 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.6B: Runoff Area=6.542 ac 15.75% Impervious Runoff Depth=0.00"
Flow Length=244' Tc=21.7 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.00"
Flow Length=886' Tc=31.7 min CN=39 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.00"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.000 af

Link DP6.1: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.15: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 27.064 ac Runoff Volume = 0.001 af Average Runoff Depth = 0.00"
89.80% Pervious = 24.303 ac 10.20% Impervious = 2.761 ac

Summary for Subcatchment EX6.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.016	76	Gravel roads, HSG A
0.314	30	Woods, Good, HSG A
0.330	32	Weighted Average
0.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.5	119	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.1	169	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.006	76	Gravel roads, HSG A
0.086	30	Woods, Good, HSG A
0.092	33	Weighted Average
0.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.1360	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	12	0.0960	0.77		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.1	62	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.005	76	Gravel roads, HSG A
0.129	30	Woods, Good, HSG A
0.135	32	Weighted Average
0.135		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.2860	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.13:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.034	76	Gravel roads, HSG A
0.441	30	Woods, Good, HSG A
0.474	33	Weighted Average
0.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	48	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.14:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.045	76	Gravel roads, HSG A
0.008	98	Paved parking, HSG A
0.564	30	Woods, Good, HSG A
0.617	34	Weighted Average
0.609		98.64% Pervious Area
0.008		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.5	76	0.1080	0.82		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	126	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

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

Summary for Subcatchment EX6.1A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.022	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.109	44	Weighted Average
0.087		79.70% Pervious Area
0.022		20.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment EX6.1B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.016	98	Paved parking, HSG A
0.424	30	Woods, Good, HSG A
0.685	38	Weighted Average
0.669		97.70% Pervious Area
0.016		2.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
31.8	421	0.0078	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.9	343	0.0163	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
61.5	814	Total			

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	46	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.0	96	Total			

Summary for Subcatchment EX6.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.061	76	Gravel roads, HSG A
0.559	30	Woods, Good, HSG A
0.620	35	Weighted Average
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.2	840	0.0115	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
86.4	890	Total			

Summary for Subcatchment EX6.6B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.067	76	Gravel roads, HSG A
1.031	98	Paved parking, HSG A
4.212	30	Woods, Good, HSG A
6.542	43	Weighted Average
5.511		84.25% Pervious Area
1.031		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment EX6.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1:

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 0.330 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.092 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.135 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.474 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.617 ac, 1.36% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 0.15" for 1" event
Inflow = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6:

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.10: Runoff Area=0.330 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=169' Tc=17.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.11: Runoff Area=0.092 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=62' Tc=10.1 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.12: Runoff Area=0.135 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=50' Slope=0.2860 '/' Tc=7.3 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.13: Runoff Area=0.474 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=48' Slope=0.1460 '/' Tc=9.2 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.14: Runoff Area=0.617 ac 1.36% Impervious Runoff Depth=0.00"
Flow Length=126' Tc=22.6 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=1.77"
Tc=6.0 min CN=84 Runoff=0.2 cfs 0.012 af

SubcatchmentEX6.1A: Runoff Area=0.109 ac 20.30% Impervious Runoff Depth=0.04"
Flow Length=153' Tc=15.7 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.1B: Runoff Area=0.685 ac 2.30% Impervious Runoff Depth=0.00"
Flow Length=814' Tc=61.5 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.00"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.02"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=0.15"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.1 cfs 0.036 af

SubcatchmentEX6.5: Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=96' Tc=15.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.6A: Runoff Area=0.620 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=890' Tc=86.4 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.6B: Runoff Area=6.542 ac 15.75% Impervious Runoff Depth=0.03"
Flow Length=244' Tc=21.7 min CN=43 Runoff=0.0 cfs 0.017 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.00"
Flow Length=886' Tc=31.7 min CN=39 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.01"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.001 af

Link DP6.1: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.15: Low Point Inflow=0.2 cfs 0.012 af
Primary=0.2 cfs 0.012 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.4: Low Point Inflow=0.1 cfs 0.036 af
Primary=0.1 cfs 0.036 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Inflow=0.0 cfs 0.017 af
Primary=0.0 cfs 0.017 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Total Runoff Area = 27.064 ac Runoff Volume = 0.068 af Average Runoff Depth = 0.03"
89.80% Pervious = 24.303 ac 10.20% Impervious = 2.761 ac

Summary for Subcatchment EX6.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.016	76	Gravel roads, HSG A
0.314	30	Woods, Good, HSG A
0.330	32	Weighted Average
0.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.5	119	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.1	169	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.006	76	Gravel roads, HSG A
0.086	30	Woods, Good, HSG A
0.092	33	Weighted Average
0.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.1360	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	12	0.0960	0.77		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.1	62	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.005	76	Gravel roads, HSG A
0.129	30	Woods, Good, HSG A
0.135	32	Weighted Average
0.135		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.2860	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.13:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.034	76	Gravel roads, HSG A
0.441	30	Woods, Good, HSG A
0.474	33	Weighted Average
0.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	48	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.14:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.045	76	Gravel roads, HSG A
0.008	98	Paved parking, HSG A
0.564	30	Woods, Good, HSG A
0.617	34	Weighted Average
0.609		98.64% Pervious Area
0.008		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.5	76	0.1080	0.82		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	126	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

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

Summary for Subcatchment EX6.1A:

Runoff = 0.0 cfs @ 15.59 hrs, Volume= 0.000 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.022	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.109	44	Weighted Average
0.087		79.70% Pervious Area
0.022		20.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment EX6.1B:

Runoff = 0.0 cfs @ 24.45 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.016	98	Paved parking, HSG A
0.424	30	Woods, Good, HSG A
0.685	38	Weighted Average
0.669		97.70% Pervious Area
0.016		2.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
31.8	421	0.0078	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.9	343	0.0163	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
61.5	814	Total			

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.0 cfs @ 20.93 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 0.1 cfs @ 12.86 hrs, Volume= 0.036 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	46	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.0	96	Total			

Summary for Subcatchment EX6.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.061	76	Gravel roads, HSG A
0.559	30	Woods, Good, HSG A
0.620	35	Weighted Average
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.2	840	0.0115	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
86.4	890	Total			

Summary for Subcatchment EX6.6B:

Runoff = 0.0 cfs @ 17.00 hrs, Volume= 0.017 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.067	76	Gravel roads, HSG A
1.031	98	Paved parking, HSG A
4.212	30	Woods, Good, HSG A
6.542	43	Weighted Average
5.511		84.25% Pervious Area
1.031		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment EX6.7:

Runoff = 0.0 cfs @ 24.04 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.0 cfs @ 22.00 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1:

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 15.59 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 15.59 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 0.330 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.092 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.135 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.474 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.617 ac, 1.36% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 1.77" for 2-yr event
Inflow = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af
Primary = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.02" for 2-yr event
Inflow = 0.0 cfs @ 20.93 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 20.93 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.1 cfs @ 12.86 hrs, Volume= 0.036 af
Primary = 0.1 cfs @ 12.86 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6:

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.0 cfs @ 17.00 hrs, Volume= 0.017 af
Primary = 0.0 cfs @ 17.00 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.04 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 24.04 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.00 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 22.00 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.10: Runoff Area=0.330 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=169' Tc=17.1 min CN=32 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.11: Runoff Area=0.092 ac 0.00% Impervious Runoff Depth=0.05"
Flow Length=62' Tc=10.1 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.12: Runoff Area=0.135 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=50' Slope=0.2860 '/' Tc=7.3 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.13: Runoff Area=0.474 ac 0.00% Impervious Runoff Depth=0.05"
Flow Length=48' Slope=0.1460 '/' Tc=9.2 min CN=33 Runoff=0.0 cfs 0.002 af

SubcatchmentEX6.14: Runoff Area=0.617 ac 1.36% Impervious Runoff Depth=0.07"
Flow Length=126' Tc=22.6 min CN=34 Runoff=0.0 cfs 0.004 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=3.36"
Tc=6.0 min CN=84 Runoff=0.3 cfs 0.022 af

SubcatchmentEX6.1A: Runoff Area=0.109 ac 20.30% Impervious Runoff Depth=0.43"
Flow Length=153' Tc=15.7 min CN=44 Runoff=0.0 cfs 0.004 af

SubcatchmentEX6.1B: Runoff Area=0.685 ac 2.30% Impervious Runoff Depth=0.19"
Flow Length=814' Tc=61.5 min CN=38 Runoff=0.0 cfs 0.011 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.03"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.002 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.34"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.1 cfs 0.022 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=0.73"
Flow Length=877' Tc=27.4 min CN=50 Runoff=1.0 cfs 0.176 af

SubcatchmentEX6.5: Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=96' Tc=15.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.6A: Runoff Area=0.620 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=890' Tc=86.4 min CN=35 Runoff=0.0 cfs 0.005 af

SubcatchmentEX6.6B: Runoff Area=6.542 ac 15.75% Impervious Runoff Depth=0.38"
Flow Length=244' Tc=21.7 min CN=43 Runoff=0.8 cfs 0.208 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.22"
Flow Length=886' Tc=31.7 min CN=39 Runoff=0.2 cfs 0.131 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.013 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.30"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.1 cfs 0.022 af

Link DP6.1: Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP6.15: Low Point Inflow=0.3 cfs 0.022 af
Primary=0.3 cfs 0.022 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP6.3: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Link DP6.4: Low Point Inflow=1.0 cfs 0.176 af
Primary=1.0 cfs 0.176 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Inflow=0.8 cfs 0.213 af
Primary=0.8 cfs 0.213 af

Link DP6.7: Wetland 37 Inflow=0.2 cfs 0.131 af
Primary=0.2 cfs 0.131 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.013 af
Primary=0.0 cfs 0.013 af

Link DP6.9: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Total Runoff Area = 27.064 ac Runoff Volume = 0.624 af Average Runoff Depth = 0.28"
89.80% Pervious = 24.303 ac 10.20% Impervious = 2.761 ac

Summary for Subcatchment EX6.10:

Runoff = 0.0 cfs @ 17.42 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.016	76	Gravel roads, HSG A
0.314	30	Woods, Good, HSG A
0.330	32	Weighted Average
0.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.5	119	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.1	169	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 15.76 hrs, Volume= 0.000 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.006	76	Gravel roads, HSG A
0.086	30	Woods, Good, HSG A
0.092	33	Weighted Average
0.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.1360	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	12	0.0960	0.77		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.1	62	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 17.27 hrs, Volume= 0.000 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.005	76	Gravel roads, HSG A
0.129	30	Woods, Good, HSG A
0.135	32	Weighted Average
0.135		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.2860	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.13:

Runoff = 0.0 cfs @ 15.75 hrs, Volume= 0.002 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.034	76	Gravel roads, HSG A
0.441	30	Woods, Good, HSG A
0.474	33	Weighted Average
0.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	48	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.14:

Runoff = 0.0 cfs @ 15.59 hrs, Volume= 0.004 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.045	76	Gravel roads, HSG A
0.008	98	Paved parking, HSG A
0.564	30	Woods, Good, HSG A
0.617	34	Weighted Average
0.609		98.64% Pervious Area
0.008		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.5	76	0.1080	0.82		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	126	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

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

Summary for Subcatchment EX6.1A:

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.004 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.022	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.109	44	Weighted Average
0.087		79.70% Pervious Area
0.022		20.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment EX6.1B:

Runoff = 0.0 cfs @ 14.55 hrs, Volume= 0.011 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.016	98	Paved parking, HSG A
0.424	30	Woods, Good, HSG A
0.685	38	Weighted Average
0.669		97.70% Pervious Area
0.016		2.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
31.8	421	0.0078	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.9	343	0.0163	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
61.5	814	Total			

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 17.80 hrs, Volume= 0.002 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.022 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 1.0 cfs @ 12.52 hrs, Volume= 0.176 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	46	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.0	96	Total			

Summary for Subcatchment EX6.6A:

Runoff = 0.0 cfs @ 16.25 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.061	76	Gravel roads, HSG A
0.559	30	Woods, Good, HSG A
0.620	35	Weighted Average
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.2	840	0.0115	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
86.4	890	Total			

Summary for Subcatchment EX6.6B:

Runoff = 0.8 cfs @ 12.58 hrs, Volume= 0.208 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.067	76	Gravel roads, HSG A
1.031	98	Paved parking, HSG A
4.212	30	Woods, Good, HSG A
6.542	43	Weighted Average
5.511		84.25% Pervious Area
1.031		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment EX6.7:

Runoff = 0.2 cfs @ 13.10 hrs, Volume= 0.131 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.0 cfs @ 17.70 hrs, Volume= 0.013 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1:

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.22" for 10-yr event
Inflow = 0.0 cfs @ 14.40 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 14.40 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 0.330 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.42 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 17.42 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.092 ac, 0.00% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.0 cfs @ 15.76 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 15.76 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.135 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.27 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 17.27 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.474 ac, 0.00% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.0 cfs @ 15.75 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 15.75 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.617 ac, 1.36% Impervious, Inflow Depth = 0.07" for 10-yr event
Inflow = 0.0 cfs @ 15.59 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 15.59 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 3.36" for 10-yr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.80 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 17.80 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.34" for 10-yr event
Inflow = 0.1 cfs @ 12.51 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.51 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 1.0 cfs @ 12.52 hrs, Volume= 0.176 af
Primary = 1.0 cfs @ 12.52 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6:

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.36" for 10-yr event
Inflow = 0.8 cfs @ 12.58 hrs, Volume= 0.213 af
Primary = 0.8 cfs @ 12.58 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.22" for 10-yr event
Inflow = 0.2 cfs @ 13.10 hrs, Volume= 0.131 af
Primary = 0.2 cfs @ 13.10 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.70 hrs, Volume= 0.013 af
Primary = 0.0 cfs @ 17.70 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.10: Runoff Area=0.330 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=169' Tc=17.1 min CN=32 Runoff=0.0 cfs 0.005 af

SubcatchmentEX6.11: Runoff Area=0.092 ac 0.00% Impervious Runoff Depth=0.21"
Flow Length=62' Tc=10.1 min CN=33 Runoff=0.0 cfs 0.002 af

SubcatchmentEX6.12: Runoff Area=0.135 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=50' Slope=0.2860 '/' Tc=7.3 min CN=32 Runoff=0.0 cfs 0.002 af

SubcatchmentEX6.13: Runoff Area=0.474 ac 0.00% Impervious Runoff Depth=0.21"
Flow Length=48' Slope=0.1460 '/' Tc=9.2 min CN=33 Runoff=0.0 cfs 0.008 af

SubcatchmentEX6.14: Runoff Area=0.617 ac 1.36% Impervious Runoff Depth=0.25"
Flow Length=126' Tc=22.6 min CN=34 Runoff=0.0 cfs 0.013 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=4.41"
Tc=6.0 min CN=84 Runoff=0.4 cfs 0.030 af

SubcatchmentEX6.1A: Runoff Area=0.109 ac 20.30% Impervious Runoff Depth=0.83"
Flow Length=153' Tc=15.7 min CN=44 Runoff=0.0 cfs 0.008 af

SubcatchmentEX6.1B: Runoff Area=0.685 ac 2.30% Impervious Runoff Depth=0.46"
Flow Length=814' Tc=61.5 min CN=38 Runoff=0.1 cfs 0.026 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.17"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.010 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.70"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.3 cfs 0.045 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=1.26"
Flow Length=877' Tc=27.4 min CN=50 Runoff=2.0 cfs 0.301 af

SubcatchmentEX6.5: Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=96' Tc=15.0 min CN=30 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.6A: Runoff Area=0.620 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=890' Tc=86.4 min CN=35 Runoff=0.0 cfs 0.015 af

SubcatchmentEX6.6B: Runoff Area=6.542 ac 15.75% Impervious Runoff Depth=0.76"
Flow Length=244' Tc=21.7 min CN=43 Runoff=2.3 cfs 0.415 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.51"
Flow Length=886' Tc=31.7 min CN=39 Runoff=1.1 cfs 0.304 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.1 cfs 0.069 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.2 cfs 0.048 af

Link DP6.1: Inflow=0.1 cfs 0.034 af
Primary=0.1 cfs 0.034 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.013 af
Primary=0.0 cfs 0.013 af

Link DP6.15: Low Point Inflow=0.4 cfs 0.030 af
Primary=0.4 cfs 0.030 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.010 af

Link DP6.3: Low Point Inflow=0.3 cfs 0.045 af
Primary=0.3 cfs 0.045 af

Link DP6.4: Low Point Inflow=2.0 cfs 0.301 af
Primary=2.0 cfs 0.301 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.6: Inflow=2.3 cfs 0.430 af
Primary=2.3 cfs 0.430 af

Link DP6.7: Wetland 37 Inflow=1.1 cfs 0.304 af
Primary=1.1 cfs 0.304 af

Link DP6.8: Low Point Inflow=0.1 cfs 0.069 af
Primary=0.1 cfs 0.069 af

Link DP6.9: Low Point Inflow=0.2 cfs 0.048 af
Primary=0.2 cfs 0.048 af

Total Runoff Area = 27.064 ac Runoff Volume = 1.301 af Average Runoff Depth = 0.58"
89.80% Pervious = 24.303 ac 10.20% Impervious = 2.761 ac

Summary for Subcatchment EX6.10:

Runoff = 0.0 cfs @ 14.75 hrs, Volume= 0.005 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.016	76	Gravel roads, HSG A
0.314	30	Woods, Good, HSG A
0.330	32	Weighted Average
0.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.5	119	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.1	169	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 13.74 hrs, Volume= 0.002 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.006	76	Gravel roads, HSG A
0.086	30	Woods, Good, HSG A
0.092	33	Weighted Average
0.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.1360	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	12	0.0960	0.77		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.1	62	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 14.62 hrs, Volume= 0.002 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.005	76	Gravel roads, HSG A
0.129	30	Woods, Good, HSG A
0.135	32	Weighted Average
0.135		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.2860	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.13:

Runoff = 0.0 cfs @ 13.73 hrs, Volume= 0.008 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.034	76	Gravel roads, HSG A
0.441	30	Woods, Good, HSG A
0.474	33	Weighted Average
0.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	48	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.14:

Runoff = 0.0 cfs @ 13.00 hrs, Volume= 0.013 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.045	76	Gravel roads, HSG A
0.008	98	Paved parking, HSG A
0.564	30	Woods, Good, HSG A
0.617	34	Weighted Average
0.609		98.64% Pervious Area
0.008		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.5	76	0.1080	0.82		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	126	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

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

Summary for Subcatchment EX6.1A:

Runoff = 0.0 cfs @ 12.33 hrs, Volume= 0.008 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.022	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.109	44	Weighted Average
0.087		79.70% Pervious Area
0.022		20.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment EX6.1B:

Runoff = 0.1 cfs @ 13.24 hrs, Volume= 0.026 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.016	98	Paved parking, HSG A
0.424	30	Woods, Good, HSG A
0.685	38	Weighted Average
0.669		97.70% Pervious Area
0.016		2.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
31.8	421	0.0078	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.9	343	0.0163	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
61.5	814	Total			

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 15.10 hrs, Volume= 0.010 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.3 cfs @ 12.39 hrs, Volume= 0.045 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 2.0 cfs @ 12.46 hrs, Volume= 0.301 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.0 cfs @ 15.33 hrs, Volume= 0.001 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	46	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.0	96	Total			

Summary for Subcatchment EX6.6A:

Runoff = 0.0 cfs @ 14.48 hrs, Volume= 0.015 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.061	76	Gravel roads, HSG A
0.559	30	Woods, Good, HSG A
0.620	35	Weighted Average
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.2	840	0.0115	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
86.4	890	Total			

Summary for Subcatchment EX6.6B:

Runoff = 2.3 cfs @ 12.47 hrs, Volume= 0.415 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.067	76	Gravel roads, HSG A
1.031	98	Paved parking, HSG A
4.212	30	Woods, Good, HSG A
6.542	43	Weighted Average
5.511		84.25% Pervious Area
1.031		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment EX6.7:

Runoff = 1.1 cfs @ 12.70 hrs, Volume= 0.304 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.1 cfs @ 15.05 hrs, Volume= 0.069 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.2 cfs @ 12.45 hrs, Volume= 0.048 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1:

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.51" for 25-yr event
Inflow = 0.1 cfs @ 13.20 hrs, Volume= 0.034 af
Primary = 0.1 cfs @ 13.20 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 0.330 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.0 cfs @ 14.75 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 14.75 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.092 ac, 0.00% Impervious, Inflow Depth = 0.21" for 25-yr event
Inflow = 0.0 cfs @ 13.74 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 13.74 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.135 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.0 cfs @ 14.62 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 14.62 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.474 ac, 0.00% Impervious, Inflow Depth = 0.21" for 25-yr event
Inflow = 0.0 cfs @ 13.73 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 13.73 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.617 ac, 1.36% Impervious, Inflow Depth = 0.25" for 25-yr event
Inflow = 0.0 cfs @ 13.00 hrs, Volume= 0.013 af
Primary = 0.0 cfs @ 13.00 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 4.41" for 25-yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.0 cfs @ 15.10 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 15.10 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.70" for 25-yr event
Inflow = 0.3 cfs @ 12.39 hrs, Volume= 0.045 af
Primary = 0.3 cfs @ 12.39 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 2.0 cfs @ 12.46 hrs, Volume= 0.301 af
Primary = 2.0 cfs @ 12.46 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.33 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 15.33 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6:

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.72" for 25-yr event
Inflow = 2.3 cfs @ 12.47 hrs, Volume= 0.430 af
Primary = 2.3 cfs @ 12.47 hrs, Volume= 0.430 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.51" for 25-yr event
Inflow = 1.1 cfs @ 12.70 hrs, Volume= 0.304 af
Primary = 1.1 cfs @ 12.70 hrs, Volume= 0.304 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.1 cfs @ 15.05 hrs, Volume= 0.069 af
Primary = 0.1 cfs @ 15.05 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.2 cfs @ 12.45 hrs, Volume= 0.048 af
Primary = 0.2 cfs @ 12.45 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.10: Runoff Area=0.330 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=169' Tc=17.1 min CN=32 Runoff=0.1 cfs 0.020 af

SubcatchmentEX6.11: Runoff Area=0.092 ac 0.00% Impervious Runoff Depth=0.83"
Flow Length=62' Tc=10.1 min CN=33 Runoff=0.0 cfs 0.006 af

SubcatchmentEX6.12: Runoff Area=0.135 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=50' Slope=0.2860 '/' Tc=7.3 min CN=32 Runoff=0.0 cfs 0.008 af

SubcatchmentEX6.13: Runoff Area=0.474 ac 0.00% Impervious Runoff Depth=0.83"
Flow Length=48' Slope=0.1460 '/' Tc=9.2 min CN=33 Runoff=0.2 cfs 0.033 af

SubcatchmentEX6.14: Runoff Area=0.617 ac 1.36% Impervious Runoff Depth=0.92"
Flow Length=126' Tc=22.6 min CN=34 Runoff=0.2 cfs 0.047 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=6.67"
Tc=6.0 min CN=84 Runoff=0.6 cfs 0.045 af

SubcatchmentEX6.1A: Runoff Area=0.109 ac 20.30% Impervious Runoff Depth=1.95"
Flow Length=153' Tc=15.7 min CN=44 Runoff=0.2 cfs 0.018 af

SubcatchmentEX6.1B: Runoff Area=0.685 ac 2.30% Impervious Runoff Depth=1.32"
Flow Length=814' Tc=61.5 min CN=38 Runoff=0.3 cfs 0.075 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.74"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.2 cfs 0.045 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=1.73"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.9 cfs 0.113 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=2.62"
Flow Length=877' Tc=27.4 min CN=50 Runoff=4.8 cfs 0.628 af

SubcatchmentEX6.5: Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=96' Tc=15.0 min CN=30 Runoff=0.0 cfs 0.004 af

SubcatchmentEX6.6A: Runoff Area=0.620 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=890' Tc=86.4 min CN=35 Runoff=0.1 cfs 0.053 af

SubcatchmentEX6.6B: Runoff Area=6.542 ac 15.75% Impervious Runoff Depth=1.84"
Flow Length=244' Tc=21.7 min CN=43 Runoff=7.6 cfs 1.005 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=1.42"
Flow Length=886' Tc=31.7 min CN=39 Runoff=4.9 cfs 0.840 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=603' Tc=34.1 min CN=32 Runoff=1.1 cfs 0.303 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=1.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=1.0 cfs 0.122 af

Link DP6.1: Inflow=0.3 cfs 0.093 af
Primary=0.3 cfs 0.093 af

Link DP6.10: Low Point Inflow=0.1 cfs 0.020 af
Primary=0.1 cfs 0.020 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP6.13: Wetland 34 Inflow=0.2 cfs 0.033 af
Primary=0.2 cfs 0.033 af

Link DP6.14: Wetland 33 Inflow=0.2 cfs 0.047 af
Primary=0.2 cfs 0.047 af

Link DP6.15: Low Point Inflow=0.6 cfs 0.045 af
Primary=0.6 cfs 0.045 af

Link DP6.2: Dutton Inflow=0.2 cfs 0.045 af
Primary=0.2 cfs 0.045 af

Link DP6.3: Low Point Inflow=0.9 cfs 0.113 af
Primary=0.9 cfs 0.113 af

Link DP6.4: Low Point Inflow=4.8 cfs 0.628 af
Primary=4.8 cfs 0.628 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP6.6: Inflow=7.7 cfs 1.057 af
Primary=7.7 cfs 1.057 af

Link DP6.7: Wetland 37 Inflow=4.9 cfs 0.840 af
Primary=4.9 cfs 0.840 af

Link DP6.8: Low Point Inflow=1.1 cfs 0.303 af
Primary=1.1 cfs 0.303 af

Link DP6.9: Low Point Inflow=1.0 cfs 0.122 af
Primary=1.0 cfs 0.122 af

Total Runoff Area = 27.064 ac Runoff Volume = 3.364 af Average Runoff Depth = 1.49"
89.80% Pervious = 24.303 ac 10.20% Impervious = 2.761 ac

Summary for Subcatchment EX6.10:

Runoff = 0.1 cfs @ 12.48 hrs, Volume= 0.020 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.016	76	Gravel roads, HSG A
0.314	30	Woods, Good, HSG A
0.330	32	Weighted Average
0.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.5	119	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.1	169	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 12.35 hrs, Volume= 0.006 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.006	76	Gravel roads, HSG A
0.086	30	Woods, Good, HSG A
0.092	33	Weighted Average
0.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.1360	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	12	0.0960	0.77		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.1	62	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 12.33 hrs, Volume= 0.008 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.005	76	Gravel roads, HSG A
0.129	30	Woods, Good, HSG A
0.135	32	Weighted Average
0.135		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.2860	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.13:

Runoff = 0.2 cfs @ 12.33 hrs, Volume= 0.033 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.034	76	Gravel roads, HSG A
0.441	30	Woods, Good, HSG A
0.474	33	Weighted Average
0.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	48	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX6.14:

Runoff = 0.2 cfs @ 12.51 hrs, Volume= 0.047 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.045	76	Gravel roads, HSG A
0.008	98	Paved parking, HSG A
0.564	30	Woods, Good, HSG A
0.617	34	Weighted Average
0.609		98.64% Pervious Area
0.008		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.5	76	0.1080	0.82		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	126	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af, Depth= 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

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

Summary for Subcatchment EX6.1A:

Runoff = 0.2 cfs @ 12.26 hrs, Volume= 0.018 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.022	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.109	44	Weighted Average
0.087		79.70% Pervious Area
0.022		20.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment EX6.1B:

Runoff = 0.3 cfs @ 13.02 hrs, Volume= 0.075 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.016	98	Paved parking, HSG A
0.424	30	Woods, Good, HSG A
0.685	38	Weighted Average
0.669		97.70% Pervious Area
0.016		2.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
31.8	421	0.0078	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.9	343	0.0163	0.32		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
61.5	814	Total			

Summary for Subcatchment EX6.2:

Runoff = 0.2 cfs @ 12.84 hrs, Volume= 0.045 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.9 cfs @ 12.26 hrs, Volume= 0.113 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 0.004 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	46	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.0	96	Total			

Summary for Subcatchment EX6.6A:

Runoff = 0.1 cfs @ 13.49 hrs, Volume= 0.053 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.061	76	Gravel roads, HSG A
0.559	30	Woods, Good, HSG A
0.620	35	Weighted Average
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
52.2	840	0.0115	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
86.4	890	Total			

Summary for Subcatchment EX6.6B:

Runoff = 7.6 cfs @ 12.36 hrs, Volume= 1.005 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.067	76	Gravel roads, HSG A
1.031	98	Paved parking, HSG A
4.212	30	Woods, Good, HSG A
6.542	43	Weighted Average
5.511		84.25% Pervious Area
1.031		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment EX6.7:

Runoff = 4.9 cfs @ 12.56 hrs, Volume= 0.840 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 1.1 cfs @ 12.72 hrs, Volume= 0.303 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 1.0 cfs @ 12.30 hrs, Volume= 0.122 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1:

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 1.40" for 100-yr event
Inflow = 0.3 cfs @ 12.99 hrs, Volume= 0.093 af
Primary = 0.3 cfs @ 12.99 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 0.330 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 0.1 cfs @ 12.48 hrs, Volume= 0.020 af
Primary = 0.1 cfs @ 12.48 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.092 ac, 0.00% Impervious, Inflow Depth = 0.83" for 100-yr event
Inflow = 0.0 cfs @ 12.35 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 12.35 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.135 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 0.0 cfs @ 12.33 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.33 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.474 ac, 0.00% Impervious, Inflow Depth = 0.83" for 100-yr event
Inflow = 0.2 cfs @ 12.33 hrs, Volume= 0.033 af
Primary = 0.2 cfs @ 12.33 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.617 ac, 1.36% Impervious, Inflow Depth = 0.92" for 100-yr event
Inflow = 0.2 cfs @ 12.51 hrs, Volume= 0.047 af
Primary = 0.2 cfs @ 12.51 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 6.67" for 100-yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 0.2 cfs @ 12.84 hrs, Volume= 0.045 af
Primary = 0.2 cfs @ 12.84 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 1.73" for 100-yr event
Inflow = 0.9 cfs @ 12.26 hrs, Volume= 0.113 af
Primary = 0.9 cfs @ 12.26 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 2.62" for 100-yr event
Inflow = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af
Primary = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.0 cfs @ 12.51 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.51 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6:

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 1.77" for 100-yr event
Inflow = 7.7 cfs @ 12.36 hrs, Volume= 1.057 af
Primary = 7.7 cfs @ 12.36 hrs, Volume= 1.057 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 1.42" for 100-yr event
Inflow = 4.9 cfs @ 12.56 hrs, Volume= 0.840 af
Primary = 4.9 cfs @ 12.56 hrs, Volume= 0.840 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

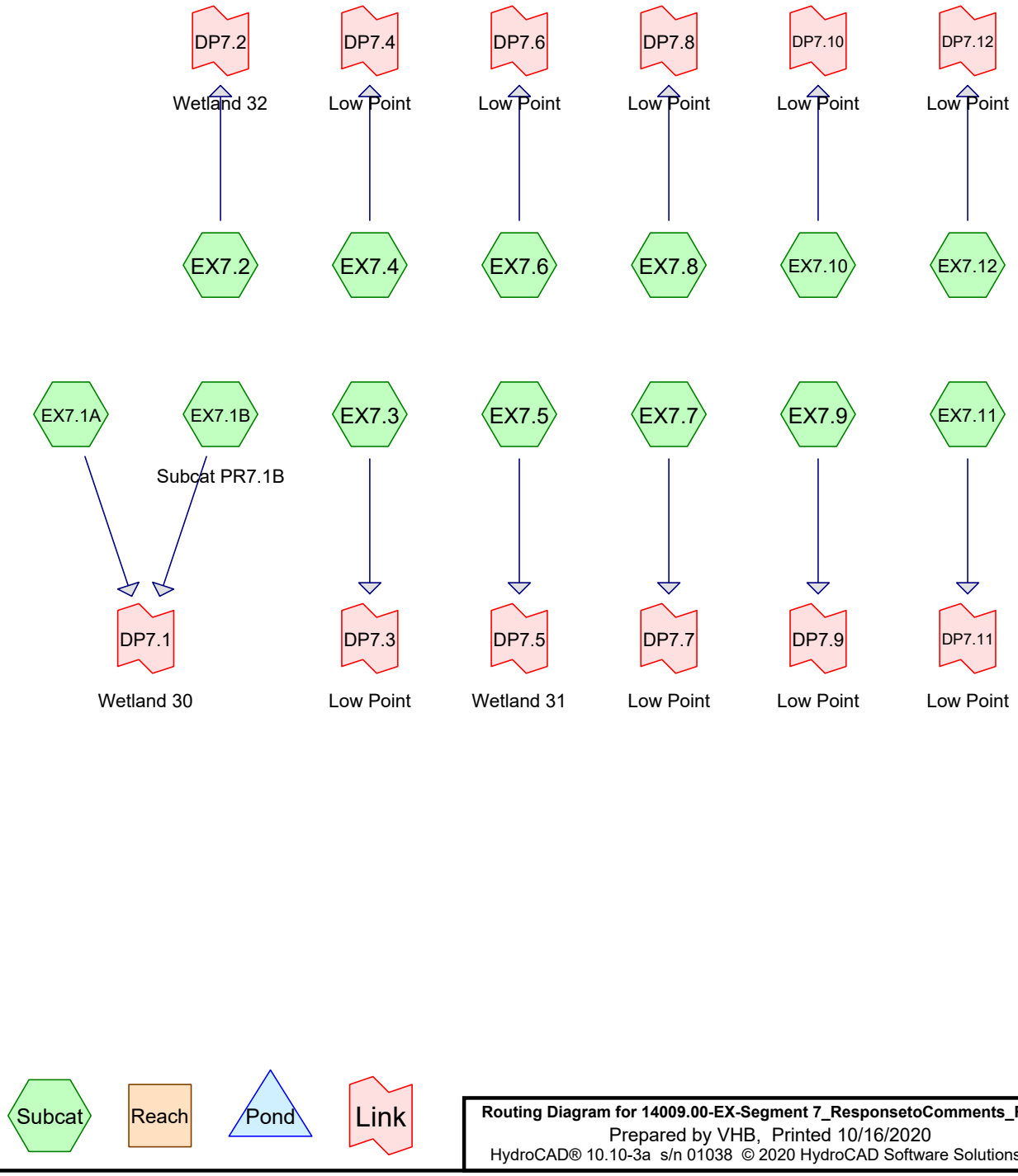
Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 1.1 cfs @ 12.72 hrs, Volume= 0.303 af
Primary = 1.1 cfs @ 12.72 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 1.0 cfs @ 12.30 hrs, Volume= 0.122 af
Primary = 1.0 cfs @ 12.30 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs



Routing Diagram for 14009.00-EX-Segment 7_ResponsetoComments_REV_Full

Prepared by VHB, Printed 10/16/2020

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

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.00"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.00"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.00"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.1A: Runoff Area=0.193 ac 4.56% Impervious Runoff Depth=0.00"
Flow Length=206' Tc=15.1 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.1B: Subcat PR7.1B Runoff Area=1.088 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=126' Tc=17.8 min CN=55 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.00"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.4: Runoff Area=0.125 ac 5.81% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.5: Runoff Area=0.815 ac 0.00% Impervious Runoff Depth=0.00"
Tc=24.2 min CN=58 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.00"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.00"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.000 af

Link DP7.1: Wetland 30 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.5: Wetland 31 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 20.185 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
89.68% Pervious = 18.103 ac 10.32% Impervious = 2.082 ac

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.1A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.026	76	Gravel roads, HSG A
0.009	98	Paved parking, HSG A
0.091	30	Woods, Good, HSG A
0.193	42	Weighted Average
0.184		95.44% Pervious Area
0.009		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.1440	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.2	105	0.0095	0.24		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.4	51	0.0196	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.1	206	Total			

Summary for Subcatchment EX7.1B: Subcat PR7.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.118	39	>75% Grass cover, Good, HSG A
0.175	80	>75% Grass cover, Good, HSG D
0.047	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.433	30	Woods, Good, HSG A
0.285	77	Woods, Good, HSG D
1.088	55	Weighted Average
1.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	126	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.007	98	Paved parking, HSG A
0.116	30	Woods, Good, HSG A
0.125	34	Weighted Average
0.117		94.19% Pervious Area
0.007		5.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum TC of 6 mins**

Summary for Subcatchment EX7.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.045	39	>75% Grass cover, Good, HSG A
0.084	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.310	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.815	58	Weighted Average
0.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2					**Direct Entry, Same TC as PR7.5**

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.281 ac, 0.69% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.125 ac, 5.81% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.815 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.00"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.007 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.07"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.007 af

SubcatchmentEX7.1A: Runoff Area=0.193 ac 4.56% Impervious Runoff Depth=0.02"
Flow Length=206' Tc=15.1 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.1B: Subcat PR7.1B Runoff Area=1.088 ac 0.00% Impervious Runoff Depth=0.28"
Flow Length=126' Tc=17.8 min CN=55 Runoff=0.1 cfs 0.025 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.01"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.004 af

SubcatchmentEX7.4: Runoff Area=0.125 ac 5.81% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.5: Runoff Area=0.815 ac 0.00% Impervious Runoff Depth=0.38"
Tc=24.2 min CN=58 Runoff=0.1 cfs 0.026 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.00"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.03"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.014 af

Link DP7.1: Wetland 30 Inflow=0.1 cfs 0.026 af
Primary=0.1 cfs 0.026 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.5: Wetland 31 Inflow=0.1 cfs 0.026 af
Primary=0.1 cfs 0.026 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Total Runoff Area = 20.185 ac Runoff Volume = 0.084 af Average Runoff Depth = 0.05"
89.68% Pervious = 18.103 ac 10.32% Impervious = 2.082 ac

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 24.11 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.1A:

Runoff = 0.0 cfs @ 20.89 hrs, Volume= 0.000 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.026	76	Gravel roads, HSG A
0.009	98	Paved parking, HSG A
0.091	30	Woods, Good, HSG A
0.193	42	Weighted Average
0.184		95.44% Pervious Area
0.009		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.1440	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.2	105	0.0095	0.24		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.4	51	0.0196	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.1	206	Total			

Summary for Subcatchment EX7.1B: Subcat PR7.1B

Runoff = 0.1 cfs @ 12.49 hrs, Volume= 0.025 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.118	39	>75% Grass cover, Good, HSG A
0.175	80	>75% Grass cover, Good, HSG D
0.047	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.433	30	Woods, Good, HSG A
0.285	77	Woods, Good, HSG D
1.088	55	Weighted Average
1.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	126	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.007	98	Paved parking, HSG A
0.116	30	Woods, Good, HSG A
0.125	34	Weighted Average
0.117		94.19% Pervious Area
0.007		5.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum TC of 6 mins**

Summary for Subcatchment EX7.5:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.026 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.045	39	>75% Grass cover, Good, HSG A
0.084	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.310	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.815	58	Weighted Average
0.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2					**Direct Entry, Same TC as PR7.5**

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.281 ac, 0.69% Impervious, Inflow Depth = 0.24" for 2-yr event
Inflow = 0.1 cfs @ 12.49 hrs, Volume= 0.026 af
Primary = 0.1 cfs @ 12.49 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.11 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.11 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.06" for 2-yr event
Inflow = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.125 ac, 5.81% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.815 ac, 0.00% Impervious, Inflow Depth = 0.38" for 2-yr event
Inflow = 0.1 cfs @ 12.51 hrs, Volume= 0.026 af
Primary = 0.1 cfs @ 12.51 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.19"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.004 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.47"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.3 cfs 0.063 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.52"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.3 cfs 0.054 af

SubcatchmentEX7.1A: Runoff Area=0.193 ac 4.56% Impervious Runoff Depth=0.34"
Flow Length=206' Tc=15.1 min CN=42 Runoff=0.0 cfs 0.005 af

SubcatchmentEX7.1B: Subcat PR7.1B Runoff Area=1.088 ac 0.00% Impervious Runoff Depth=1.03"
Flow Length=126' Tc=17.8 min CN=55 Runoff=0.7 cfs 0.093 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.12"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.0 cfs 0.027 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.30"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.2 cfs 0.090 af

SubcatchmentEX7.4: Runoff Area=0.125 ac 5.81% Impervious Runoff Depth=0.07"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.001 af

SubcatchmentEX7.5: Runoff Area=0.815 ac 0.00% Impervious Runoff Depth=1.22"
Tc=24.2 min CN=58 Runoff=0.6 cfs 0.083 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.05"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.004 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.0 cfs 0.006 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.10"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.0 cfs 0.010 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.38"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.8 cfs 0.183 af

Link DP7.1: Wetland 30 Inflow=0.8 cfs 0.099 af
Primary=0.8 cfs 0.099 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP7.11: Low Point Inflow=0.3 cfs 0.063 af
Primary=0.3 cfs 0.063 af

Link DP7.12: Low Point Inflow=0.3 cfs 0.054 af
Primary=0.3 cfs 0.054 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.027 af
Primary=0.0 cfs 0.027 af

Link DP7.3: Low Point Inflow=0.2 cfs 0.090 af
Primary=0.2 cfs 0.090 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP7.5: Wetland 31 Inflow=0.6 cfs 0.083 af
Primary=0.6 cfs 0.083 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.010 af

Link DP7.9: Low Point Inflow=0.8 cfs 0.183 af
Primary=0.8 cfs 0.183 af

Total Runoff Area = 20.185 ac Runoff Volume = 0.623 af Average Runoff Depth = 0.37"
89.68% Pervious = 18.103 ac 10.32% Impervious = 2.082 ac

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 13.80 hrs, Volume= 0.004 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.1A:

Runoff = 0.0 cfs @ 12.50 hrs, Volume= 0.005 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.026	76	Gravel roads, HSG A
0.009	98	Paved parking, HSG A
0.091	30	Woods, Good, HSG A
0.193	42	Weighted Average
0.184		95.44% Pervious Area
0.009		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.1440	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.2	105	0.0095	0.24		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.4	51	0.0196	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.1	206	Total			

Summary for Subcatchment EX7.1B: Subcat PR7.1B

Runoff = 0.7 cfs @ 12.29 hrs, Volume= 0.093 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.118	39	>75% Grass cover, Good, HSG A
0.175	80	>75% Grass cover, Good, HSG D
0.047	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.433	30	Woods, Good, HSG A
0.285	77	Woods, Good, HSG D
1.088	55	Weighted Average
1.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	126	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.0 cfs @ 15.04 hrs, Volume= 0.027 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 0.0 cfs @ 15.34 hrs, Volume= 0.001 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.007	98	Paved parking, HSG A
0.116	30	Woods, Good, HSG A
0.125	34	Weighted Average
0.117		94.19% Pervious Area
0.007		5.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum TC of 6 mins**

Summary for Subcatchment EX7.5:

Runoff = 0.6 cfs @ 12.39 hrs, Volume= 0.083 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.045	39	>75% Grass cover, Good, HSG A
0.084	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.310	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.815	58	Weighted Average
0.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2					**Direct Entry, Same TC as PR7.5**

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 15.84 hrs, Volume= 0.004 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.0 cfs @ 15.07 hrs, Volume= 0.006 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.0 cfs @ 15.19 hrs, Volume= 0.010 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.281 ac, 0.69% Impervious, Inflow Depth = 0.93" for 10-yr event
Inflow = 0.8 cfs @ 12.30 hrs, Volume= 0.099 af
Primary = 0.8 cfs @ 12.30 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.19" for 10-yr event
Inflow = 0.0 cfs @ 13.80 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 13.80 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.47" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.52" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.12" for 10-yr event
Inflow = 0.0 cfs @ 15.04 hrs, Volume= 0.027 af
Primary = 0.0 cfs @ 15.04 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af
Primary = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.125 ac, 5.81% Impervious, Inflow Depth = 0.07" for 10-yr event
Inflow = 0.0 cfs @ 15.34 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 15.34 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.815 ac, 0.00% Impervious, Inflow Depth = 1.22" for 10-yr event
Inflow = 0.6 cfs @ 12.39 hrs, Volume= 0.083 af
Primary = 0.6 cfs @ 12.39 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.0 cfs @ 15.84 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 15.84 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.07 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 15.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.19 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 15.19 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.38" for 10-yr event
Inflow = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af
Primary = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.46"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.010 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.90"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.8 cfs 0.118 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.96"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.7 cfs 0.100 af

SubcatchmentEX7.1A: Runoff Area=0.193 ac 4.56% Impervious Runoff Depth=0.70"
Flow Length=206' Tc=15.1 min CN=42 Runoff=0.1 cfs 0.011 af

SubcatchmentEX7.1B: Subcat PR7.1B Runoff Area=1.088 ac 0.00% Impervious Runoff Depth=1.65"
Flow Length=126' Tc=17.8 min CN=55 Runoff=1.3 cfs 0.150 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.35"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.2 cfs 0.077 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.8 cfs 0.192 af

SubcatchmentEX7.4: Runoff Area=0.125 ac 5.81% Impervious Runoff Depth=0.25"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.003 af

SubcatchmentEX7.5: Runoff Area=0.815 ac 0.00% Impervious Runoff Depth=1.90"
Tc=24.2 min CN=58 Runoff=1.1 cfs 0.129 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.21"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.016 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.1 cfs 0.018 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.30"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.1 cfs 0.030 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.76"
Flow Length=610' Tc=18.2 min CN=43 Runoff=2.1 cfs 0.364 af

Link DP7.1: Wetland 30 Inflow=1.4 cfs 0.161 af
Primary=1.4 cfs 0.161 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.010 af

Link DP7.11: Low Point Inflow=0.8 cfs 0.118 af
Primary=0.8 cfs 0.118 af

Link DP7.12: Low Point Inflow=0.7 cfs 0.100 af
Primary=0.7 cfs 0.100 af

Link DP7.2: Wetland 32 Inflow=0.2 cfs 0.077 af
Primary=0.2 cfs 0.077 af

Link DP7.3: Low Point Inflow=0.8 cfs 0.192 af
Primary=0.8 cfs 0.192 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP7.5: Wetland 31 Inflow=1.1 cfs 0.129 af
Primary=1.1 cfs 0.129 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.016 af
Primary=0.0 cfs 0.016 af

Link DP7.7: Low Point Inflow=0.1 cfs 0.018 af
Primary=0.1 cfs 0.018 af

Link DP7.8: Low Point Inflow=0.1 cfs 0.030 af
Primary=0.1 cfs 0.030 af

Link DP7.9: Low Point Inflow=2.1 cfs 0.364 af
Primary=2.1 cfs 0.364 af

Total Runoff Area = 20.185 ac Runoff Volume = 1.219 af Average Runoff Depth = 0.72"
89.68% Pervious = 18.103 ac 10.32% Impervious = 2.082 ac

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 12.57 hrs, Volume= 0.010 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.1A:

Runoff = 0.1 cfs @ 12.39 hrs, Volume= 0.011 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.026	76	Gravel roads, HSG A
0.009	98	Paved parking, HSG A
0.091	30	Woods, Good, HSG A
0.193	42	Weighted Average
0.184		95.44% Pervious Area
0.009		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.1440	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.2	105	0.0095	0.24		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.4	51	0.0196	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.1	206	Total			

Summary for Subcatchment EX7.1B: Subcat PR7.1B

Runoff = 1.3 cfs @ 12.28 hrs, Volume= 0.150 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.118	39	>75% Grass cover, Good, HSG A
0.175	80	>75% Grass cover, Good, HSG D
0.047	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.433	30	Woods, Good, HSG A
0.285	77	Woods, Good, HSG D
1.088	55	Weighted Average
1.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	126	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.2 cfs @ 12.69 hrs, Volume= 0.077 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.007	98	Paved parking, HSG A
0.116	30	Woods, Good, HSG A
0.125	34	Weighted Average
0.117		94.19% Pervious Area
0.007		5.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum TC of 6 mins**

Summary for Subcatchment EX7.5:

Runoff = 1.1 cfs @ 12.37 hrs, Volume= 0.129 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.045	39	>75% Grass cover, Good, HSG A
0.084	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.310	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.815	58	Weighted Average
0.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2					**Direct Entry, Same TC as PR7.5**

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 13.80 hrs, Volume= 0.016 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.018 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.1 cfs @ 12.63 hrs, Volume= 0.030 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.281 ac, 0.69% Impervious, Inflow Depth = 1.51" for 25-yr event
Inflow = 1.4 cfs @ 12.28 hrs, Volume= 0.161 af
Primary = 1.4 cfs @ 12.28 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.46" for 25-yr event
Inflow = 0.0 cfs @ 12.57 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 12.57 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.90" for 25-yr event
Inflow = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af
Primary = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.96" for 25-yr event
Inflow = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af
Primary = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.35" for 25-yr event
Inflow = 0.2 cfs @ 12.69 hrs, Volume= 0.077 af
Primary = 0.2 cfs @ 12.69 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af
Primary = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.125 ac, 5.81% Impervious, Inflow Depth = 0.25" for 25-yr event
Inflow = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.815 ac, 0.00% Impervious, Inflow Depth = 1.90" for 25-yr event
Inflow = 1.1 cfs @ 12.37 hrs, Volume= 0.129 af
Primary = 1.1 cfs @ 12.37 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.21" for 25-yr event
Inflow = 0.0 cfs @ 13.80 hrs, Volume= 0.016 af
Primary = 0.0 cfs @ 13.80 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.51 hrs, Volume= 0.018 af
Primary = 0.1 cfs @ 12.51 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.63 hrs, Volume= 0.030 af
Primary = 0.1 cfs @ 12.63 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.76" for 25-yr event
Inflow = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af
Primary = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=1.32"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.2 cfs 0.029 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=2.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=2.3 cfs 0.273 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=2.17"
Flow Length=295' Tc=19.3 min CN=46 Runoff=1.9 cfs 0.224 af

SubcatchmentEX7.1A: Runoff Area=0.193 ac 4.56% Impervious Runoff Depth=1.73"
Flow Length=206' Tc=15.1 min CN=42 Runoff=0.2 cfs 0.028 af

SubcatchmentEX7.1B: Subcat PR7.1B Runoff Area=1.088 ac 0.00% Impervious Runoff Depth=3.20"
Flow Length=126' Tc=17.8 min CN=55 Runoff=2.8 cfs 0.290 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=1.11"
Flow Length=485' Tc=25.2 min CN=36 Runoff=1.4 cfs 0.247 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=1.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=2.9 cfs 0.494 af

SubcatchmentEX7.4: Runoff Area=0.125 ac 5.81% Impervious Runoff Depth=0.92"
Tc=6.0 min CN=34 Runoff=0.1 cfs 0.010 af

SubcatchmentEX7.5: Runoff Area=0.815 ac 0.00% Impervious Runoff Depth=3.55"
Tc=24.2 min CN=58 Runoff=2.1 cfs 0.241 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.83"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.3 cfs 0.062 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.4 cfs 0.063 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=1.02"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.6 cfs 0.102 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=1.84"
Flow Length=610' Tc=18.2 min CN=43 Runoff=7.2 cfs 0.881 af

Link DP7.1: Wetland 30 Inflow=3.0 cfs 0.318 af
Primary=3.0 cfs 0.318 af

Link DP7.10: Low Point Inflow=0.2 cfs 0.029 af
Primary=0.2 cfs 0.029 af

Link DP7.11: Low Point Inflow=2.3 cfs 0.273 af
Primary=2.3 cfs 0.273 af

Link DP7.12: Low Point Inflow=1.9 cfs 0.224 af
Primary=1.9 cfs 0.224 af

Link DP7.2: Wetland 32 Inflow=1.4 cfs 0.247 af
Primary=1.4 cfs 0.247 af

Link DP7.3: Low Point Inflow=2.9 cfs 0.494 af
Primary=2.9 cfs 0.494 af

Link DP7.4: Low Point Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP7.5: Wetland 31 Inflow=2.1 cfs 0.241 af
Primary=2.1 cfs 0.241 af

Link DP7.6: Low Point Inflow=0.3 cfs 0.062 af
Primary=0.3 cfs 0.062 af

Link DP7.7: Low Point Inflow=0.4 cfs 0.063 af
Primary=0.4 cfs 0.063 af

Link DP7.8: Low Point Inflow=0.6 cfs 0.102 af
Primary=0.6 cfs 0.102 af

Link DP7.9: Low Point Inflow=7.2 cfs 0.881 af
Primary=7.2 cfs 0.881 af

Total Runoff Area = 20.185 ac Runoff Volume = 2.944 af Average Runoff Depth = 1.75"
89.68% Pervious = 18.103 ac 10.32% Impervious = 2.082 ac

Summary for Subcatchment EX7.10:

Runoff = 0.2 cfs @ 12.40 hrs, Volume= 0.029 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.1A:

Runoff = 0.2 cfs @ 12.25 hrs, Volume= 0.028 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.026	76	Gravel roads, HSG A
0.009	98	Paved parking, HSG A
0.091	30	Woods, Good, HSG A
0.193	42	Weighted Average
0.184		95.44% Pervious Area
0.009		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.1440	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.2	105	0.0095	0.24		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.4	51	0.0196	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.1	206	Total			

Summary for Subcatchment EX7.1B: Subcat PR7.1B

Runoff = 2.8 cfs @ 12.26 hrs, Volume= 0.290 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.118	39	>75% Grass cover, Good, HSG A
0.175	80	>75% Grass cover, Good, HSG D
0.047	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.433	30	Woods, Good, HSG A
0.285	77	Woods, Good, HSG D
1.088	55	Weighted Average
1.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	126	Total			

Summary for Subcatchment EX7.2:

Runoff = 1.4 cfs @ 12.51 hrs, Volume= 0.247 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 0.1 cfs @ 12.14 hrs, Volume= 0.010 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.007	98	Paved parking, HSG A
0.116	30	Woods, Good, HSG A
0.125	34	Weighted Average
0.117		94.19% Pervious Area
0.007		5.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum TC of 6 mins**

Summary for Subcatchment EX7.5:

Runoff = 2.1 cfs @ 12.34 hrs, Volume= 0.241 af, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.045	39	>75% Grass cover, Good, HSG A
0.084	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.310	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.815	58	Weighted Average
0.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2					**Direct Entry, Same TC as PR7.5**

Summary for Subcatchment EX7.6:

Runoff = 0.3 cfs @ 12.42 hrs, Volume= 0.062 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.4 cfs @ 12.26 hrs, Volume= 0.063 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.6 cfs @ 12.43 hrs, Volume= 0.102 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.281 ac, 0.69% Impervious, Inflow Depth = 2.98" for 100-yr event
Inflow = 3.0 cfs @ 12.26 hrs, Volume= 0.318 af
Primary = 3.0 cfs @ 12.26 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 1.32" for 100-yr event
Inflow = 0.2 cfs @ 12.40 hrs, Volume= 0.029 af
Primary = 0.2 cfs @ 12.40 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 2.06" for 100-yr event
Inflow = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af
Primary = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 2.17" for 100-yr event
Inflow = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af
Primary = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 1.11" for 100-yr event
Inflow = 1.4 cfs @ 12.51 hrs, Volume= 0.247 af
Primary = 1.4 cfs @ 12.51 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af
Primary = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.125 ac, 5.81% Impervious, Inflow Depth = 0.92" for 100-yr event
Inflow = 0.1 cfs @ 12.14 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.14 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.815 ac, 0.00% Impervious, Inflow Depth = 3.55" for 100-yr event
Inflow = 2.1 cfs @ 12.34 hrs, Volume= 0.241 af
Primary = 2.1 cfs @ 12.34 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.83" for 100-yr event
Inflow = 0.3 cfs @ 12.42 hrs, Volume= 0.062 af
Primary = 0.3 cfs @ 12.42 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.4 cfs @ 12.26 hrs, Volume= 0.063 af
Primary = 0.4 cfs @ 12.26 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

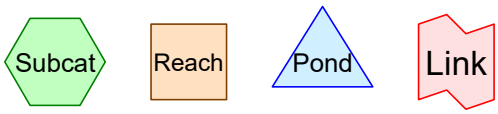
Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.6 cfs @ 12.43 hrs, Volume= 0.102 af
Primary = 0.6 cfs @ 12.43 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 1.84" for 100-yr event
Inflow = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af
Primary = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Atten= 0%, Lag= 0.0 min

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



Routing Diagram for 14009.00-EX-Segment 8_ResponsetoComments_REV_Full

Prepared by VHB, Printed 10/16/2020

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

SubcatchmentEX8.10: Runoff Area=0.210 ac 11.43% Impervious Runoff Depth=0.00"
Flow Length=204' Tc=16.7 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.11: Runoff Area=0.877 ac 37.17% Impervious Runoff Depth=0.00"
Flow Length=145' Tc=8.9 min CN=55 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=0.00"
Flow Length=356' Tc=17.5 min CN=56 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.2A: Runoff Area=0.872 ac 1.07% Impervious Runoff Depth=0.00"
Flow Length=397' Tc=47.3 min CN=54 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.2B: Runoff Area=1.333 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=541' Tc=70.9 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.3A: Runoff Area=0.321 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=101' Tc=13.8 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.3B: Runoff Area=2.286 ac 8.69% Impervious Runoff Depth=0.00"
Flow Length=691' Tc=60.7 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.4A: Runoff Area=0.325 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=203' Tc=14.0 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.4B: Runoff Area=0.703 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=733' Tc=36.6 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.5A: Runoff Area=0.688 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=901' Tc=37.8 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.5B: Runoff Area=3.426 ac 51.46% Impervious Runoff Depth=0.00"
Flow Length=188' Tc=15.3 min CN=65 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.6: Runoff Area=1.509 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,298' Tc=70.7 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.50% Impervious Runoff Depth=0.00"
Flow Length=87' Tc=17.8 min CN=61 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.8: Runoff Area=0.882 ac 54.88% Impervious Runoff Depth=0.00"
Flow Length=418' Tc=34.8 min CN=70 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.0 cfs 0.000 af

Pond Wetl26: Wetland 26 Peak Elev=152.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.11: Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.2: Wetland 27 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link EX8.3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 35.349 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
82.08% Pervious = 29.015 ac 17.92% Impervious = 6.334 ac

Summary for Subcatchment EX8.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.003	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.183	30	Woods, Good, HSG A
0.210	38	Weighted Average
0.186		88.57% Pervious Area
0.024		11.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.0260	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
5.8	154	0.0040	0.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.7	204	Total			

Summary for Subcatchment EX8.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.551	30	Woods, Good, HSG A
0.877	55	Weighted Average
0.551		62.83% Pervious Area
0.326		37.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.037	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.009	98	Paved parking, HSG A
0.434	30	Woods, Good, HSG A
0.363	77	Woods, Good, HSG D
0.872	54	Weighted Average
0.863		98.93% Pervious Area
0.009		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment EX8.2B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
1.289	30	Woods, Good, HSG A
1.333	32	Weighted Average
1.333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.4	194	0.0412	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.0	297	0.0034	0.15		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
70.9	541	Total			

Summary for Subcatchment EX8.3A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.013	76	Gravel roads, HSG A
0.003	91	Gravel roads, HSG D
0.226	30	Woods, Good, HSG A
0.078	77	Woods, Good, HSG D
0.321	44	Weighted Average
0.321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment EX8.3B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
2.043	30	Woods, Good, HSG A
2.286	37	Weighted Average
2.087		91.31% Pervious Area
0.199		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.2	641	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
60.7	691	Total			

Summary for Subcatchment EX8.4A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.014	76	Gravel roads, HSG A
0.312	30	Woods, Good, HSG A
0.325	32	Weighted Average
0.325		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment EX8.4B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.054	76	Gravel roads, HSG A
0.636	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.703	34	Weighted Average
0.703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
27.2	683	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.6	733	Total			

Summary for Subcatchment EX8.5A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.050	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.636	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
0.688	34	Weighted Average
0.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1520	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.4	851	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.8	901	Total			

Summary for Subcatchment EX8.5B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.024	76	Gravel roads, HSG A
0.448	98	Paved parking, HSG A
1.315	98	Roofs, HSG A
0.835	30	Woods, Good, HSG A
0.804	30	Woods, Good, HSG A
3.426	65	Weighted Average
1.663		48.54% Pervious Area
1.763		51.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment EX8.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.148	76	Gravel roads, HSG A
1.358	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
1.509	35	Weighted Average
1.509		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,248	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
70.7	1,298	Total			

Summary for Subcatchment EX8.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.222	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.755	61	Weighted Average
0.419		55.50% Pervious Area
0.336		44.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 0.0 cfs @ 21.77 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.279	30	Woods, Good, HSG A
0.077	30	Woods, Good, HSG A
0.882	70	Weighted Average
0.398		45.12% Pervious Area
0.484		54.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 152.00' @ 0.00 hrs Surf.Area= 564 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	12,615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	2,004	1,633	2,546
155.00	2,841	2,423	4,969
156.00	3,741	3,291	8,260
157.00	4,970	4,356	12,615

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**75.0' long x 13.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63
#2	Discarded	152.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.210 ac, 11.43% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.877 ac, 37.17% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.205 ac, 0.42% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.114 ac, 42.85% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.509 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.50% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.882 ac, 54.88% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 21.77 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 21.77 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link EX8.3:

Inflow Area = 2.606 ac, 7.62% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX8.10: Runoff Area=0.210 ac 11.43% Impervious Runoff Depth=0.00"
Flow Length=204' Tc=16.7 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.11: Runoff Area=0.877 ac 37.17% Impervious Runoff Depth=0.28"
Flow Length=145' Tc=8.9 min CN=55 Runoff=0.1 cfs 0.021 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=0.31"
Flow Length=356' Tc=17.5 min CN=56 Runoff=2.6 cfs 0.517 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.2A: Runoff Area=0.872 ac 1.07% Impervious Runoff Depth=0.25"
Flow Length=397' Tc=47.3 min CN=54 Runoff=0.1 cfs 0.018 af

SubcatchmentEX8.2B: Runoff Area=1.333 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=541' Tc=70.9 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.3A: Runoff Area=0.321 ac 0.00% Impervious Runoff Depth=0.04"
Flow Length=101' Tc=13.8 min CN=44 Runoff=0.0 cfs 0.001 af

SubcatchmentEX8.3B: Runoff Area=2.286 ac 8.69% Impervious Runoff Depth=0.00"
Flow Length=691' Tc=60.7 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.4A: Runoff Area=0.325 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=203' Tc=14.0 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.4B: Runoff Area=0.703 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=733' Tc=36.6 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.5A: Runoff Area=0.688 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=901' Tc=37.8 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.5B: Runoff Area=3.426 ac 51.46% Impervious Runoff Depth=0.65"
Flow Length=188' Tc=15.3 min CN=65 Runoff=1.5 cfs 0.185 af

SubcatchmentEX8.6: Runoff Area=1.509 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,298' Tc=70.7 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.50% Impervious Runoff Depth=0.49"
Flow Length=87' Tc=17.8 min CN=61 Runoff=0.2 cfs 0.031 af

SubcatchmentEX8.8: Runoff Area=0.882 ac 54.88% Impervious Runoff Depth=0.89"
Flow Length=418' Tc=34.8 min CN=70 Runoff=0.4 cfs 0.065 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.0 cfs 0.001 af

Pond Wetl26: Wetland 26 Peak Elev=152.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=2.6 cfs 0.517 af
Primary=2.6 cfs 0.517 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.11: Wetland Inflow=0.1 cfs 0.021 af
Primary=0.1 cfs 0.021 af

Link DP8.2: Wetland 27 Inflow=0.1 cfs 0.018 af
Primary=0.1 cfs 0.018 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=1.5 cfs 0.185 af
Primary=1.5 cfs 0.185 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.7: Low Point Inflow=0.2 cfs 0.031 af
Primary=0.2 cfs 0.031 af

Link DP8.8: Low Point Inflow=0.4 cfs 0.065 af
Primary=0.4 cfs 0.065 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link EX8.3: Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Total Runoff Area = 35.349 ac Runoff Volume = 0.839 af Average Runoff Depth = 0.28"
82.08% Pervious = 29.015 ac 17.92% Impervious = 6.334 ac

Summary for Subcatchment EX8.10:

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.003	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.183	30	Woods, Good, HSG A
0.210	38	Weighted Average
0.186		88.57% Pervious Area
0.024		11.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.0260	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
5.8	154	0.0040	0.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.7	204	Total			

Summary for Subcatchment EX8.11:

Runoff = 0.1 cfs @ 12.36 hrs, Volume= 0.021 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.551	30	Woods, Good, HSG A
0.877	55	Weighted Average
0.551		62.83% Pervious Area
0.326		37.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 2.6 cfs @ 12.47 hrs, Volume= 0.517 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2A:

Runoff = 0.1 cfs @ 12.98 hrs, Volume= 0.018 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.037	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.009	98	Paved parking, HSG A
0.434	30	Woods, Good, HSG A
0.363	77	Woods, Good, HSG D
0.872	54	Weighted Average
0.863		98.93% Pervious Area
0.009		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment EX8.2B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
1.289	30	Woods, Good, HSG A
1.333	32	Weighted Average
1.333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.4	194	0.0412	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.0	297	0.0034	0.15		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
70.9	541	Total			

Summary for Subcatchment EX8.3A:

Runoff = 0.0 cfs @ 15.56 hrs, Volume= 0.001 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.013	76	Gravel roads, HSG A
0.003	91	Gravel roads, HSG D
0.226	30	Woods, Good, HSG A
0.078	77	Woods, Good, HSG D
0.321	44	Weighted Average
0.321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment EX8.3B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
2.043	30	Woods, Good, HSG A
2.286	37	Weighted Average
2.087		91.31% Pervious Area
0.199		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.2	641	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
60.7	691	Total			

Summary for Subcatchment EX8.4A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.014	76	Gravel roads, HSG A
0.312	30	Woods, Good, HSG A
0.325	32	Weighted Average
0.325		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment EX8.4B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.054	76	Gravel roads, HSG A
0.636	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.703	34	Weighted Average
0.703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
27.2	683	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.6	733	Total			

Summary for Subcatchment EX8.5A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.050	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.636	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
0.688	34	Weighted Average
0.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1520	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.4	851	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.8	901	Total			

Summary for Subcatchment EX8.5B:

Runoff = 1.5 cfs @ 12.26 hrs, Volume= 0.185 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.024	76	Gravel roads, HSG A
0.448	98	Paved parking, HSG A
1.315	98	Roofs, HSG A
0.835	30	Woods, Good, HSG A
0.804	30	Woods, Good, HSG A
3.426	65	Weighted Average
1.663		48.54% Pervious Area
1.763		51.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment EX8.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.148	76	Gravel roads, HSG A
1.358	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
1.509	35	Weighted Average
1.509		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,248	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
70.7	1,298	Total			

Summary for Subcatchment EX8.7:

Runoff = 0.2 cfs @ 12.34 hrs, Volume= 0.031 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.222	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.755	61	Weighted Average
0.419		55.50% Pervious Area
0.336		44.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 0.4 cfs @ 12.56 hrs, Volume= 0.065 af, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.279	30	Woods, Good, HSG A
0.077	30	Woods, Good, HSG A
0.882	70	Weighted Average
0.398		45.12% Pervious Area
0.484		54.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.0 cfs @ 22.12 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 152.00' @ 0.00 hrs Surf.Area= 564 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	12,615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	2,004	1,633	2,546
155.00	2,841	2,423	4,969
156.00	3,741	3,291	8,260
157.00	4,970	4,356	12,615

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**75.0' long x 13.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63
#2	Discarded	152.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└─**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 2.6 cfs @ 12.47 hrs, Volume= 0.517 af
Primary = 2.6 cfs @ 12.47 hrs, Volume= 0.517 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.210 ac, 11.43% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.07 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.877 ac, 37.17% Impervious, Inflow Depth = 0.28" for 2-yr event
Inflow = 0.1 cfs @ 12.36 hrs, Volume= 0.021 af
Primary = 0.1 cfs @ 12.36 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.205 ac, 0.42% Impervious, Inflow Depth = 0.10" for 2-yr event
Inflow = 0.1 cfs @ 12.98 hrs, Volume= 0.018 af
Primary = 0.1 cfs @ 12.98 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.114 ac, 42.85% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 1.5 cfs @ 12.26 hrs, Volume= 0.185 af
Primary = 1.5 cfs @ 12.26 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.509 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.50% Impervious, Inflow Depth = 0.49" for 2-yr event
Inflow = 0.2 cfs @ 12.34 hrs, Volume= 0.031 af
Primary = 0.2 cfs @ 12.34 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.882 ac, 54.88% Impervious, Inflow Depth = 0.89" for 2-yr event
Inflow = 0.4 cfs @ 12.56 hrs, Volume= 0.065 af
Primary = 0.4 cfs @ 12.56 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.12 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 22.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link EX8.3:

Inflow Area = 2.606 ac, 7.62% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 15.56 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 15.56 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX8.10: Runoff Area=0.210 ac 11.43% Impervious Runoff Depth=0.19"
Flow Length=204' Tc=16.7 min CN=38 Runoff=0.0 cfs 0.003 af

SubcatchmentEX8.11: Runoff Area=0.877 ac 37.17% Impervious Runoff Depth=1.03"
Flow Length=145' Tc=8.9 min CN=55 Runoff=0.8 cfs 0.075 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=1.09"
Flow Length=356' Tc=17.5 min CN=56 Runoff=15.0 cfs 1.812 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.001 af

SubcatchmentEX8.2A: Runoff Area=0.872 ac 1.07% Impervious Runoff Depth=0.97"
Flow Length=397' Tc=47.3 min CN=54 Runoff=0.4 cfs 0.070 af

SubcatchmentEX8.2B: Runoff Area=1.333 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=541' Tc=70.9 min CN=32 Runoff=0.0 cfs 0.004 af

SubcatchmentEX8.3A: Runoff Area=0.321 ac 0.00% Impervious Runoff Depth=0.43"
Flow Length=101' Tc=13.8 min CN=44 Runoff=0.1 cfs 0.011 af

SubcatchmentEX8.3B: Runoff Area=2.286 ac 8.69% Impervious Runoff Depth=0.15"
Flow Length=691' Tc=60.7 min CN=37 Runoff=0.0 cfs 0.029 af

SubcatchmentEX8.4A: Runoff Area=0.325 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=203' Tc=14.0 min CN=32 Runoff=0.0 cfs 0.001 af

SubcatchmentEX8.4B: Runoff Area=0.703 ac 0.00% Impervious Runoff Depth=0.07"
Flow Length=733' Tc=36.6 min CN=34 Runoff=0.0 cfs 0.004 af

SubcatchmentEX8.5A: Runoff Area=0.688 ac 0.00% Impervious Runoff Depth=0.07"
Flow Length=901' Tc=37.8 min CN=34 Runoff=0.0 cfs 0.004 af

SubcatchmentEX8.5B: Runoff Area=3.426 ac 51.46% Impervious Runoff Depth=1.72"
Flow Length=188' Tc=15.3 min CN=65 Runoff=4.9 cfs 0.491 af

SubcatchmentEX8.6: Runoff Area=1.509 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=1,298' Tc=70.7 min CN=35 Runoff=0.0 cfs 0.012 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.50% Impervious Runoff Depth=1.43"
Flow Length=87' Tc=17.8 min CN=61 Runoff=0.8 cfs 0.090 af

SubcatchmentEX8.8: Runoff Area=0.882 ac 54.88% Impervious Runoff Depth=2.11"
Flow Length=418' Tc=34.8 min CN=70 Runoff=1.1 cfs 0.155 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.1 cfs 0.024 af

Pond Wetl26: Wetland 26 Peak Elev=152.21' Storage=132 cf Inflow=0.0 cfs 0.005 af
Discarded=0.0 cfs 0.005 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.005 af

Link DP8.1: Wetland 28/29 Inflow=15.0 cfs 1.813 af
Primary=15.0 cfs 1.813 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP8.11: Wetland Inflow=0.8 cfs 0.075 af
Primary=0.8 cfs 0.075 af

Link DP8.2: Wetland 27 Inflow=0.4 cfs 0.074 af
Primary=0.4 cfs 0.074 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=4.9 cfs 0.495 af
Primary=4.9 cfs 0.495 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.012 af
Primary=0.0 cfs 0.012 af

Link DP8.7: Low Point Inflow=0.8 cfs 0.090 af
Primary=0.8 cfs 0.090 af

Link DP8.8: Low Point Inflow=1.1 cfs 0.155 af
Primary=1.1 cfs 0.155 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.1 cfs 0.024 af
Primary=0.1 cfs 0.024 af

Link EX8.3: Inflow=0.1 cfs 0.041 af
Primary=0.1 cfs 0.041 af

Total Runoff Area = 35.349 ac Runoff Volume = 2.788 af Average Runoff Depth = 0.95"
82.08% Pervious = 29.015 ac 17.92% Impervious = 6.334 ac

Summary for Subcatchment EX8.10:

Runoff = 0.0 cfs @ 13.75 hrs, Volume= 0.003 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.003	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.183	30	Woods, Good, HSG A
0.210	38	Weighted Average
0.186		88.57% Pervious Area
0.024		11.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.0260	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
5.8	154	0.0040	0.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.7	204	Total			

Summary for Subcatchment EX8.11:

Runoff = 0.8 cfs @ 12.15 hrs, Volume= 0.075 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.551	30	Woods, Good, HSG A
0.877	55	Weighted Average
0.551		62.83% Pervious Area
0.326		37.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 15.0 cfs @ 12.28 hrs, Volume= 1.812 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 17.74 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2A:

Runoff = 0.4 cfs @ 12.77 hrs, Volume= 0.070 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.037	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.009	98	Paved parking, HSG A
0.434	30	Woods, Good, HSG A
0.363	77	Woods, Good, HSG D
0.872	54	Weighted Average
0.863		98.93% Pervious Area
0.009		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment EX8.2B:

Runoff = 0.0 cfs @ 21.35 hrs, Volume= 0.004 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
1.289	30	Woods, Good, HSG A
1.333	32	Weighted Average
1.333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.4	194	0.0412	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.0	297	0.0034	0.15		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
70.9	541	Total			

Summary for Subcatchment EX8.3A:

Runoff = 0.1 cfs @ 12.44 hrs, Volume= 0.011 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.013	76	Gravel roads, HSG A
0.003	91	Gravel roads, HSG D
0.226	30	Woods, Good, HSG A
0.078	77	Woods, Good, HSG D
0.321	44	Weighted Average
0.321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment EX8.3B:

Runoff = 0.0 cfs @ 15.18 hrs, Volume= 0.029 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
2.043	30	Woods, Good, HSG A
2.286	37	Weighted Average
2.087		91.31% Pervious Area
0.199		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.2	641	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
60.7	691	Total			

Summary for Subcatchment EX8.4A:

Runoff = 0.0 cfs @ 17.38 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.014	76	Gravel roads, HSG A
0.312	30	Woods, Good, HSG A
0.325	32	Weighted Average
0.325		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment EX8.4B:

Runoff = 0.0 cfs @ 15.82 hrs, Volume= 0.004 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.054	76	Gravel roads, HSG A
0.636	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.703	34	Weighted Average
0.703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
27.2	683	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.6	733	Total			

Summary for Subcatchment EX8.5A:

Runoff = 0.0 cfs @ 15.83 hrs, Volume= 0.004 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.050	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.636	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
0.688	34	Weighted Average
0.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1520	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.4	851	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.8	901	Total			

Summary for Subcatchment EX8.5B:

Runoff = 4.9 cfs @ 12.22 hrs, Volume= 0.491 af, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.024	76	Gravel roads, HSG A
0.448	98	Paved parking, HSG A
1.315	98	Roofs, HSG A
0.835	30	Woods, Good, HSG A
0.804	30	Woods, Good, HSG A
3.426	65	Weighted Average
1.663		48.54% Pervious Area
1.763		51.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment EX8.6:

Runoff = 0.0 cfs @ 16.10 hrs, Volume= 0.012 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.148	76	Gravel roads, HSG A
1.358	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
1.509	35	Weighted Average
1.509		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,248	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
70.7	1,298	Total			

Summary for Subcatchment EX8.7:

Runoff = 0.8 cfs @ 12.28 hrs, Volume= 0.090 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.222	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.755	61	Weighted Average
0.419		55.50% Pervious Area
0.336		44.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 1.1 cfs @ 12.49 hrs, Volume= 0.155 af, Depth= 2.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.279	30	Woods, Good, HSG A
0.077	30	Woods, Good, HSG A
0.882	70	Weighted Average
0.398		45.12% Pervious Area
0.484		54.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.1 cfs @ 12.76 hrs, Volume= 0.024 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.06" for 10-yr event
Inflow = 0.0 cfs @ 15.90 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 24.38 hrs, Volume= 0.005 af, Atten= 62%, Lag= 508.5 min
Discarded = 0.0 cfs @ 24.38 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 152.21' @ 24.38 hrs Surf.Area= 708 sf Storage= 132 cf

Plug-Flow detention time= 486.8 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 487.0 min (1,628.8 - 1,141.8)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	12,615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	2,004	1,633	2,546
155.00	2,841	2,423	4,969
156.00	3,741	3,291	8,260
157.00	4,970	4,356	12,615

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**75.0' long x 13.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63
#2	Discarded	152.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.38 hrs HW=152.21' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 1.08" for 10-yr event
Inflow = 15.0 cfs @ 12.28 hrs, Volume= 1.813 af
Primary = 15.0 cfs @ 12.28 hrs, Volume= 1.813 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.210 ac, 11.43% Impervious, Inflow Depth = 0.19" for 10-yr event
Inflow = 0.0 cfs @ 13.75 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 13.75 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.877 ac, 37.17% Impervious, Inflow Depth = 1.03" for 10-yr event
Inflow = 0.8 cfs @ 12.15 hrs, Volume= 0.075 af
Primary = 0.8 cfs @ 12.15 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.205 ac, 0.42% Impervious, Inflow Depth = 0.40" for 10-yr event
Inflow = 0.4 cfs @ 12.77 hrs, Volume= 0.074 af
Primary = 0.4 cfs @ 12.77 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.114 ac, 42.85% Impervious, Inflow Depth = 1.44" for 10-yr event
Inflow = 4.9 cfs @ 12.22 hrs, Volume= 0.495 af
Primary = 4.9 cfs @ 12.22 hrs, Volume= 0.495 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.509 ac, 0.00% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 16.10 hrs, Volume= 0.012 af
Primary = 0.0 cfs @ 16.10 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.50% Impervious, Inflow Depth = 1.43" for 10-yr event
Inflow = 0.8 cfs @ 12.28 hrs, Volume= 0.090 af
Primary = 0.8 cfs @ 12.28 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.882 ac, 54.88% Impervious, Inflow Depth = 2.11" for 10-yr event
Inflow = 1.1 cfs @ 12.49 hrs, Volume= 0.155 af
Primary = 1.1 cfs @ 12.49 hrs, Volume= 0.155 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.76 hrs, Volume= 0.024 af
Primary = 0.1 cfs @ 12.76 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link EX8.3:

Inflow Area = 2.606 ac, 7.62% Impervious, Inflow Depth = 0.19" for 10-yr event
Inflow = 0.1 cfs @ 14.77 hrs, Volume= 0.041 af
Primary = 0.1 cfs @ 14.77 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX8.10: Runoff Area=0.210 ac 11.43% Impervious Runoff Depth=0.46"
Flow Length=204' Tc=16.7 min CN=38 Runoff=0.0 cfs 0.008 af

SubcatchmentEX8.11: Runoff Area=0.877 ac 37.17% Impervious Runoff Depth=1.65"
Flow Length=145' Tc=8.9 min CN=55 Runoff=1.4 cfs 0.121 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=1.73"
Flow Length=356' Tc=17.5 min CN=56 Runoff=26.1 cfs 2.873 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.004 af

SubcatchmentEX8.2A: Runoff Area=0.872 ac 1.07% Impervious Runoff Depth=1.57"
Flow Length=397' Tc=47.3 min CN=54 Runoff=0.6 cfs 0.114 af

SubcatchmentEX8.2B: Runoff Area=1.333 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=541' Tc=70.9 min CN=32 Runoff=0.0 cfs 0.019 af

SubcatchmentEX8.3A: Runoff Area=0.321 ac 0.00% Impervious Runoff Depth=0.83"
Flow Length=101' Tc=13.8 min CN=44 Runoff=0.1 cfs 0.022 af

SubcatchmentEX8.3B: Runoff Area=2.286 ac 8.69% Impervious Runoff Depth=0.40"
Flow Length=691' Tc=60.7 min CN=37 Runoff=0.2 cfs 0.077 af

SubcatchmentEX8.4A: Runoff Area=0.325 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=203' Tc=14.0 min CN=32 Runoff=0.0 cfs 0.005 af

SubcatchmentEX8.4B: Runoff Area=0.703 ac 0.00% Impervious Runoff Depth=0.25"
Flow Length=733' Tc=36.6 min CN=34 Runoff=0.0 cfs 0.015 af

SubcatchmentEX8.5A: Runoff Area=0.688 ac 0.00% Impervious Runoff Depth=0.25"
Flow Length=901' Tc=37.8 min CN=34 Runoff=0.0 cfs 0.015 af

SubcatchmentEX8.5B: Runoff Area=3.426 ac 51.46% Impervious Runoff Depth=2.52"
Flow Length=188' Tc=15.3 min CN=65 Runoff=7.4 cfs 0.719 af

SubcatchmentEX8.6: Runoff Area=1.509 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=1,298' Tc=70.7 min CN=35 Runoff=0.1 cfs 0.038 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.50% Impervious Runoff Depth=2.16"
Flow Length=87' Tc=17.8 min CN=61 Runoff=1.3 cfs 0.136 af

SubcatchmentEX8.8: Runoff Area=0.882 ac 54.88% Impervious Runoff Depth=2.99"
Flow Length=418' Tc=34.8 min CN=70 Runoff=1.6 cfs 0.220 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.63"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.2 cfs 0.051 af

Pond Wetl26: Wetland 26 Peak Elev=152.81' Storage=683 cf Inflow=0.0 cfs 0.019 af
Discarded=0.0 cfs 0.017 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.017 af

Link DP8.1: Wetland 28/29 Inflow=26.1 cfs 2.878 af
Primary=26.1 cfs 2.878 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP8.11: Wetland Inflow=1.4 cfs 0.121 af
Primary=1.4 cfs 0.121 af

Link DP8.2: Wetland 27 Inflow=0.6 cfs 0.133 af
Primary=0.6 cfs 0.133 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=7.4 cfs 0.734 af
Primary=7.4 cfs 0.734 af

Link DP8.6: Wetland 24 Inflow=0.1 cfs 0.038 af
Primary=0.1 cfs 0.038 af

Link DP8.7: Low Point Inflow=1.3 cfs 0.136 af
Primary=1.3 cfs 0.136 af

Link DP8.8: Low Point Inflow=1.6 cfs 0.220 af
Primary=1.6 cfs 0.220 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.2 cfs 0.051 af
Primary=0.2 cfs 0.051 af

Link EX8.3: Inflow=0.2 cfs 0.099 af
Primary=0.2 cfs 0.099 af

Total Runoff Area = 35.349 ac Runoff Volume = 4.436 af Average Runoff Depth = 1.51"
82.08% Pervious = 29.015 ac 17.92% Impervious = 6.334 ac

Summary for Subcatchment EX8.10:

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 0.008 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.003	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.183	30	Woods, Good, HSG A
0.210	38	Weighted Average
0.186		88.57% Pervious Area
0.024		11.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.0260	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
5.8	154	0.0040	0.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.7	204	Total			

Summary for Subcatchment EX8.11:

Runoff = 1.4 cfs @ 12.14 hrs, Volume= 0.121 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.551	30	Woods, Good, HSG A
0.877	55	Weighted Average
0.551		62.83% Pervious Area
0.326		37.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 26.1 cfs @ 12.27 hrs, Volume= 2.873 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 15.05 hrs, Volume= 0.004 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2A:

Runoff = 0.6 cfs @ 12.72 hrs, Volume= 0.114 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.037	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.009	98	Paved parking, HSG A
0.434	30	Woods, Good, HSG A
0.363	77	Woods, Good, HSG D
0.872	54	Weighted Average
0.863		98.93% Pervious Area
0.009		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment EX8.2B:

Runoff = 0.0 cfs @ 15.52 hrs, Volume= 0.019 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
1.289	30	Woods, Good, HSG A
1.333	32	Weighted Average
1.333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.4	194	0.0412	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.0	297	0.0034	0.15		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
70.9	541	Total			

Summary for Subcatchment EX8.3A:

Runoff = 0.1 cfs @ 12.28 hrs, Volume= 0.022 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.013	76	Gravel roads, HSG A
0.003	91	Gravel roads, HSG D
0.226	30	Woods, Good, HSG A
0.078	77	Woods, Good, HSG D
0.321	44	Weighted Average
0.321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment EX8.3B:

Runoff = 0.2 cfs @ 13.29 hrs, Volume= 0.077 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
2.043	30	Woods, Good, HSG A
2.286	37	Weighted Average
2.087		91.31% Pervious Area
0.199		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.2	641	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
60.7	691	Total			

Summary for Subcatchment EX8.4A:

Runoff = 0.0 cfs @ 14.73 hrs, Volume= 0.005 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.014	76	Gravel roads, HSG A
0.312	30	Woods, Good, HSG A
0.325	32	Weighted Average
0.325		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment EX8.4B:

Runoff = 0.0 cfs @ 13.87 hrs, Volume= 0.015 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.054	76	Gravel roads, HSG A
0.636	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.703	34	Weighted Average
0.703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
27.2	683	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.6	733	Total			

Summary for Subcatchment EX8.5A:

Runoff = 0.0 cfs @ 13.90 hrs, Volume= 0.015 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.050	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.636	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
0.688	34	Weighted Average
0.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1520	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.4	851	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.8	901	Total			

Summary for Subcatchment EX8.5B:

Runoff = 7.4 cfs @ 12.22 hrs, Volume= 0.719 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.024	76	Gravel roads, HSG A
0.448	98	Paved parking, HSG A
1.315	98	Roofs, HSG A
0.835	30	Woods, Good, HSG A
0.804	30	Woods, Good, HSG A
3.426	65	Weighted Average
1.663		48.54% Pervious Area
1.763		51.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment EX8.6:

Runoff = 0.1 cfs @ 14.06 hrs, Volume= 0.038 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.148	76	Gravel roads, HSG A
1.358	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
1.509	35	Weighted Average
1.509		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,248	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
70.7	1,298	Total			

Summary for Subcatchment EX8.7:

Runoff = 1.3 cfs @ 12.26 hrs, Volume= 0.136 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.222	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.755	61	Weighted Average
0.419		55.50% Pervious Area
0.336		44.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 1.6 cfs @ 12.49 hrs, Volume= 0.220 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.279	30	Woods, Good, HSG A
0.077	30	Woods, Good, HSG A
0.882	70	Weighted Average
0.398		45.12% Pervious Area
0.484		54.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.2 cfs @ 12.63 hrs, Volume= 0.051 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.23" for 25-yr event
Inflow = 0.0 cfs @ 13.95 hrs, Volume= 0.019 af
Outflow = 0.0 cfs @ 24.49 hrs, Volume= 0.017 af, Atten= 86%, Lag= 632.2 min
Discarded = 0.0 cfs @ 24.49 hrs, Volume= 0.017 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 152.81' @ 24.49 hrs Surf.Area= 1,128 sf Storage= 683 cf

Plug-Flow detention time= 1,432.6 min calculated for 0.017 af (90% of inflow)
Center-of-Mass det. time= 1,391.8 min (2,432.7 - 1,040.9)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	12,615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	2,004	1,633	2,546
155.00	2,841	2,423	4,969
156.00	3,741	3,291	8,260
157.00	4,970	4,356	12,615

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**75.0' long x 13.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63
#2	Discarded	152.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.49 hrs HW=152.81' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 1.71" for 25-yr event
Inflow = 26.1 cfs @ 12.27 hrs, Volume= 2.878 af
Primary = 26.1 cfs @ 12.27 hrs, Volume= 2.878 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.210 ac, 11.43% Impervious, Inflow Depth = 0.46" for 25-yr event
Inflow = 0.0 cfs @ 12.51 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.51 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.877 ac, 37.17% Impervious, Inflow Depth = 1.65" for 25-yr event
Inflow = 1.4 cfs @ 12.14 hrs, Volume= 0.121 af
Primary = 1.4 cfs @ 12.14 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.205 ac, 0.42% Impervious, Inflow Depth = 0.72" for 25-yr event
Inflow = 0.6 cfs @ 12.72 hrs, Volume= 0.133 af
Primary = 0.6 cfs @ 12.72 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.114 ac, 42.85% Impervious, Inflow Depth = 2.14" for 25-yr event
Inflow = 7.4 cfs @ 12.22 hrs, Volume= 0.734 af
Primary = 7.4 cfs @ 12.22 hrs, Volume= 0.734 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.509 ac, 0.00% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 14.06 hrs, Volume= 0.038 af
Primary = 0.1 cfs @ 14.06 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.50% Impervious, Inflow Depth = 2.16" for 25-yr event
Inflow = 1.3 cfs @ 12.26 hrs, Volume= 0.136 af
Primary = 1.3 cfs @ 12.26 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.882 ac, 54.88% Impervious, Inflow Depth = 2.99" for 25-yr event
Inflow = 1.6 cfs @ 12.49 hrs, Volume= 0.220 af
Primary = 1.6 cfs @ 12.49 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.2 cfs @ 12.63 hrs, Volume= 0.051 af
Primary = 0.2 cfs @ 12.63 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link EX8.3:

Inflow Area = 2.606 ac, 7.62% Impervious, Inflow Depth = 0.45" for 25-yr event
Inflow = 0.2 cfs @ 13.29 hrs, Volume= 0.099 af
Primary = 0.2 cfs @ 13.29 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX8.10: Runoff Area=0.210 ac 11.43% Impervious Runoff Depth=1.32"
Flow Length=204' Tc=16.7 min CN=38 Runoff=0.2 cfs 0.023 af

SubcatchmentEX8.11: Runoff Area=0.877 ac 37.17% Impervious Runoff Depth=3.20"
Flow Length=145' Tc=8.9 min CN=55 Runoff=2.9 cfs 0.234 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=3.32"
Flow Length=356' Tc=17.5 min CN=56 Runoff=53.4 cfs 5.500 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.1 cfs 0.019 af

SubcatchmentEX8.2A: Runoff Area=0.872 ac 1.07% Impervious Runoff Depth=3.09"
Flow Length=397' Tc=47.3 min CN=54 Runoff=1.4 cfs 0.224 af

SubcatchmentEX8.2B: Runoff Area=1.333 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=541' Tc=70.9 min CN=32 Runoff=0.2 cfs 0.082 af

SubcatchmentEX8.3A: Runoff Area=0.321 ac 0.00% Impervious Runoff Depth=1.95"
Flow Length=101' Tc=13.8 min CN=44 Runoff=0.5 cfs 0.052 af

SubcatchmentEX8.3B: Runoff Area=2.286 ac 8.69% Impervious Runoff Depth=1.21"
Flow Length=691' Tc=60.7 min CN=37 Runoff=0.9 cfs 0.231 af

SubcatchmentEX8.4A: Runoff Area=0.325 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=203' Tc=14.0 min CN=32 Runoff=0.1 cfs 0.020 af

SubcatchmentEX8.4B: Runoff Area=0.703 ac 0.00% Impervious Runoff Depth=0.92"
Flow Length=733' Tc=36.6 min CN=34 Runoff=0.2 cfs 0.054 af

SubcatchmentEX8.5A: Runoff Area=0.688 ac 0.00% Impervious Runoff Depth=0.92"
Flow Length=901' Tc=37.8 min CN=34 Runoff=0.2 cfs 0.053 af

SubcatchmentEX8.5B: Runoff Area=3.426 ac 51.46% Impervious Runoff Depth=4.38"
Flow Length=188' Tc=15.3 min CN=65 Runoff=13.2 cfs 1.252 af

SubcatchmentEX8.6: Runoff Area=1.509 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=1,298' Tc=70.7 min CN=35 Runoff=0.4 cfs 0.128 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.50% Impervious Runoff Depth=3.91"
Flow Length=87' Tc=17.8 min CN=61 Runoff=2.4 cfs 0.246 af

SubcatchmentEX8.8: Runoff Area=0.882 ac 54.88% Impervious Runoff Depth=4.98"
Flow Length=418' Tc=34.8 min CN=70 Runoff=2.7 cfs 0.366 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=1.63"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.8 cfs 0.132 af

Pond Wetl26: Wetland 26 Peak Elev=154.17' Storage=2,906 cf Inflow=0.3 cfs 0.074 af
Discarded=0.0 cfs 0.036 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.036 af

Link DP8.1: Wetland 28/29 Inflow=53.4 cfs 5.518 af
Primary=53.4 cfs 5.518 af

Link DP8.10: Low Point Inflow=0.2 cfs 0.023 af
Primary=0.2 cfs 0.023 af

Link DP8.11: Wetland Inflow=2.9 cfs 0.234 af
Primary=2.9 cfs 0.234 af

Link DP8.2: Wetland 27 Inflow=1.5 cfs 0.306 af
Primary=1.5 cfs 0.306 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=13.2 cfs 1.305 af
Primary=13.2 cfs 1.305 af

Link DP8.6: Wetland 24 Inflow=0.4 cfs 0.128 af
Primary=0.4 cfs 0.128 af

Link DP8.7: Low Point Inflow=2.4 cfs 0.246 af
Primary=2.4 cfs 0.246 af

Link DP8.8: Low Point Inflow=2.7 cfs 0.366 af
Primary=2.7 cfs 0.366 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.8 cfs 0.132 af
Primary=0.8 cfs 0.132 af

Link EX8.3: Inflow=1.0 cfs 0.283 af
Primary=1.0 cfs 0.283 af

Total Runoff Area = 35.349 ac Runoff Volume = 8.616 af Average Runoff Depth = 2.92"
82.08% Pervious = 29.015 ac 17.92% Impervious = 6.334 ac

Summary for Subcatchment EX8.10:

Runoff = 0.2 cfs @ 12.31 hrs, Volume= 0.023 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.003	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.183	30	Woods, Good, HSG A
0.210	38	Weighted Average
0.186		88.57% Pervious Area
0.024		11.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.0260	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
5.8	154	0.0040	0.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.7	204	Total			

Summary for Subcatchment EX8.11:

Runoff = 2.9 cfs @ 12.13 hrs, Volume= 0.234 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.551	30	Woods, Good, HSG A
0.877	55	Weighted Average
0.551		62.83% Pervious Area
0.326		37.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 53.4 cfs @ 12.25 hrs, Volume= 5.500 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.1 cfs @ 12.76 hrs, Volume= 0.019 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2A:

Runoff = 1.4 cfs @ 12.67 hrs, Volume= 0.224 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.037	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.009	98	Paved parking, HSG A
0.434	30	Woods, Good, HSG A
0.363	77	Woods, Good, HSG D
0.872	54	Weighted Average
0.863		98.93% Pervious Area
0.009		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment EX8.2B:

Runoff = 0.2 cfs @ 13.32 hrs, Volume= 0.082 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
1.289	30	Woods, Good, HSG A
1.333	32	Weighted Average
1.333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.4	194	0.0412	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.0	297	0.0034	0.15		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
70.9	541	Total			

Summary for Subcatchment EX8.3A:

Runoff = 0.5 cfs @ 12.22 hrs, Volume= 0.052 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.013	76	Gravel roads, HSG A
0.003	91	Gravel roads, HSG D
0.226	30	Woods, Good, HSG A
0.078	77	Woods, Good, HSG D
0.321	44	Weighted Average
0.321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment EX8.3B:

Runoff = 0.9 cfs @ 13.02 hrs, Volume= 0.231 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.044	76	Gravel roads, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
2.043	30	Woods, Good, HSG A
2.286	37	Weighted Average
2.087		91.31% Pervious Area
0.199		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.2	641	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
60.7	691	Total			

Summary for Subcatchment EX8.4A:

Runoff = 0.1 cfs @ 12.43 hrs, Volume= 0.020 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.014	76	Gravel roads, HSG A
0.312	30	Woods, Good, HSG A
0.325	32	Weighted Average
0.325		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment EX8.4B:

Runoff = 0.2 cfs @ 12.72 hrs, Volume= 0.054 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.054	76	Gravel roads, HSG A
0.636	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.703	34	Weighted Average
0.703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
27.2	683	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.6	733	Total			

Summary for Subcatchment EX8.5A:

Runoff = 0.2 cfs @ 12.73 hrs, Volume= 0.053 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.050	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.636	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
0.688	34	Weighted Average
0.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1520	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.4	851	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.8	901	Total			

Summary for Subcatchment EX8.5B:

Runoff = 13.2 cfs @ 12.22 hrs, Volume= 1.252 af, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.024	76	Gravel roads, HSG A
0.448	98	Paved parking, HSG A
1.315	98	Roofs, HSG A
0.835	30	Woods, Good, HSG A
0.804	30	Woods, Good, HSG A
3.426	65	Weighted Average
1.663		48.54% Pervious Area
1.763		51.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment EX8.6:

Runoff = 0.4 cfs @ 13.21 hrs, Volume= 0.128 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.148	76	Gravel roads, HSG A
1.358	30	Woods, Good, HSG A
0.002	77	Woods, Good, HSG D
1.509	35	Weighted Average
1.509		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.2	50	0.0060	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,248	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
70.7	1,298	Total			

Summary for Subcatchment EX8.7:

Runoff = 2.4 cfs @ 12.25 hrs, Volume= 0.246 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.222	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.755	61	Weighted Average
0.419		55.50% Pervious Area
0.336		44.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 2.7 cfs @ 12.49 hrs, Volume= 0.366 af, Depth= 4.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.279	30	Woods, Good, HSG A
0.077	30	Woods, Good, HSG A
0.882	70	Weighted Average
0.398		45.12% Pervious Area
0.484		54.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.8 cfs @ 12.52 hrs, Volume= 0.132 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.86" for 100-yr event
Inflow = 0.3 cfs @ 12.65 hrs, Volume= 0.074 af
Outflow = 0.0 cfs @ 24.55 hrs, Volume= 0.036 af, Atten= 97%, Lag= 714.2 min
Discarded = 0.0 cfs @ 24.55 hrs, Volume= 0.036 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 154.17' @ 24.55 hrs Surf.Area= 2,149 sf Storage= 2,906 cf

Plug-Flow detention time= 1,698.0 min calculated for 0.036 af (49% of inflow)
Center-of-Mass det. time= 1,536.6 min (2,496.0 - 959.4)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	12,615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	2,004	1,633	2,546
155.00	2,841	2,423	4,969
156.00	3,741	3,291	8,260
157.00	4,970	4,356	12,615

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**75.0' long x 13.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63
#2	Discarded	152.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.55 hrs HW=154.17' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 3.28" for 100-yr event
Inflow = 53.4 cfs @ 12.25 hrs, Volume= 5.518 af
Primary = 53.4 cfs @ 12.25 hrs, Volume= 5.518 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.210 ac, 11.43% Impervious, Inflow Depth = 1.32" for 100-yr event
Inflow = 0.2 cfs @ 12.31 hrs, Volume= 0.023 af
Primary = 0.2 cfs @ 12.31 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.877 ac, 37.17% Impervious, Inflow Depth = 3.20" for 100-yr event
Inflow = 2.9 cfs @ 12.13 hrs, Volume= 0.234 af
Primary = 2.9 cfs @ 12.13 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.205 ac, 0.42% Impervious, Inflow Depth = 1.67" for 100-yr event
Inflow = 1.5 cfs @ 12.72 hrs, Volume= 0.306 af
Primary = 1.5 cfs @ 12.72 hrs, Volume= 0.306 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.114 ac, 42.85% Impervious, Inflow Depth = 3.81" for 100-yr event
Inflow = 13.2 cfs @ 12.22 hrs, Volume= 1.305 af
Primary = 13.2 cfs @ 12.22 hrs, Volume= 1.305 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.509 ac, 0.00% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.4 cfs @ 13.21 hrs, Volume= 0.128 af
Primary = 0.4 cfs @ 13.21 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.50% Impervious, Inflow Depth = 3.91" for 100-yr event
Inflow = 2.4 cfs @ 12.25 hrs, Volume= 0.246 af
Primary = 2.4 cfs @ 12.25 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.882 ac, 54.88% Impervious, Inflow Depth = 4.98" for 100-yr event
Inflow = 2.7 cfs @ 12.49 hrs, Volume= 0.366 af
Primary = 2.7 cfs @ 12.49 hrs, Volume= 0.366 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

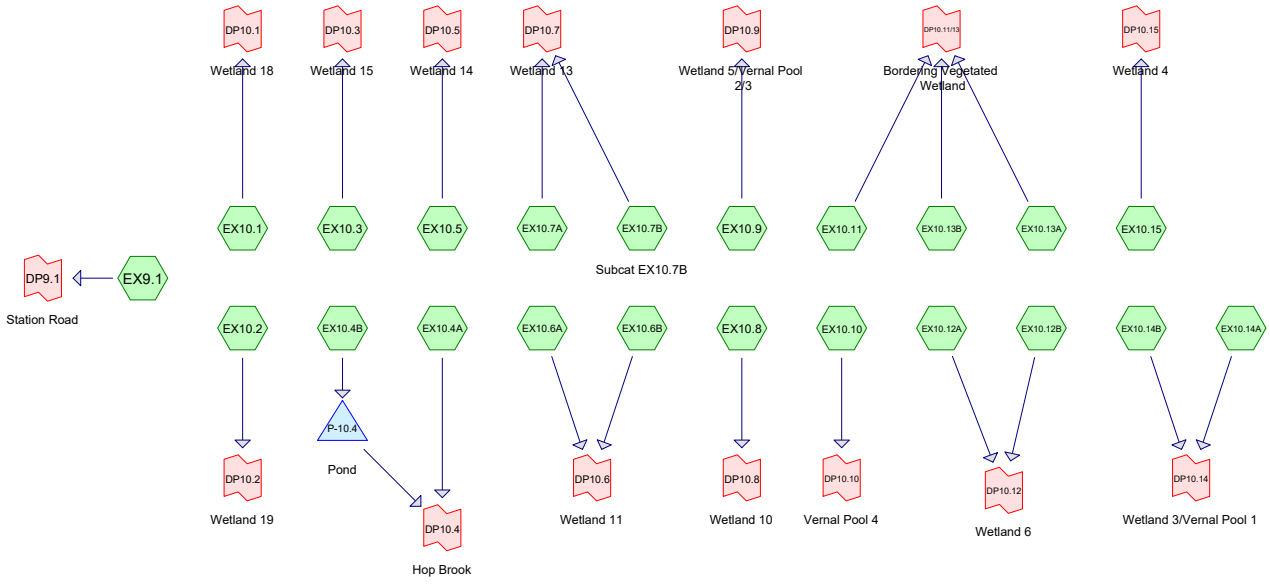
Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 0.8 cfs @ 12.52 hrs, Volume= 0.132 af
Primary = 0.8 cfs @ 12.52 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min

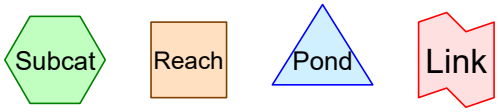
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link EX8.3:

Inflow Area = 2.606 ac, 7.62% Impervious, Inflow Depth = 1.31" for 100-yr event
Inflow = 1.0 cfs @ 13.01 hrs, Volume= 0.283 af
Primary = 1.0 cfs @ 13.01 hrs, Volume= 0.283 af, Atten= 0%, Lag= 0.0 min

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





Routing Diagram for EX_Segment_9-10_ResponsetoComments_REV_Full
Prepared by VHB, Printed 10/16/2020
HydroCAD® 10.10-3a s/n 01038 © 2020 HydroCAD Software Solutions LLC

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

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=0.07"
Flow Length=250' Tc=19.0 min CN=79 Runoff=0.0 cfs 0.006 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=0.04"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=76 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=0.00"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.12A: Runoff Area=0.452 ac 5.35% Impervious Runoff Depth=0.00"
Flow Length=426' Tc=33.5 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.12B: Runoff Area=0.851 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=231' Tc=33.0 min CN=54 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.13A: Runoff Area=1.387 ac 39.79% Impervious Runoff Depth=0.00"
Flow Length=375' Tc=15.9 min CN=66 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.13B: Runoff Area=0.373 ac 60.58% Impervious Runoff Depth=0.01"
Tc=6.0 min CN=72 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.14A: Runoff Area=4.071 ac 13.32% Impervious Runoff Depth=0.00"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.14B: Runoff Area=2.904 ac 32.18% Impervious Runoff Depth=0.00"
Flow Length=436' Tc=30.6 min CN=56 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.15: Runoff Area=4.280 ac 6.17% Impervious Runoff Depth=0.00"
Flow Length=528' Tc=23.0 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.2: Runoff Area=0.644 ac 1.67% Impervious Runoff Depth=0.08"
Flow Length=200' Tc=10.9 min CN=80 Runoff=0.0 cfs 0.004 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=0.06"
Flow Length=100' Tc=13.4 min CN=78 Runoff=0.0 cfs 0.005 af

SubcatchmentEX10.4A: Runoff Area=1.814 ac 5.48% Impervious Runoff Depth=0.00"
Flow Length=572' Tc=17.3 min CN=63 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.4B: Runoff Area=3.038 ac 13.30% Impervious Runoff Depth=0.00"
Flow Length=516' Tc=13.4 min CN=63 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=0.06"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.0 cfs 0.004 af

SubcatchmentEX10.6A: Runoff Area=0.641 ac 9.85% Impervious Runoff Depth=0.00"
Flow Length=267' Tc=14.6 min CN=40 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.6B: Runoff Area=4.484 ac 0.01% Impervious Runoff Depth=0.00"
Flow Length=312' Tc=13.8 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.7A: Runoff Area=1.719 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=607' Tc=38.6 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.7B: Subcat EX10.7B Runoff Area=0.083 ac 0.00% Impervious Runoff Depth=0.05"
Flow Length=136' Tc=11.8 min CN=77 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=384' Tc=7.6 min CN=62 Runoff=0.0 cfs 0.000 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=0.13"
Flow Length=727' Tc=41.2 min CN=83 Runoff=0.1 cfs 0.024 af

Pond P-10.4: Pond Peak Elev=124.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Link DP10.1: Wetland 18 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP10.10: Vernal Pool 4 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.12: Wetland 6 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.2: Wetland 19 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP10.3: Wetland 15 Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP10.4: Hop Brook Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.5: Wetland 14 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP10.6: Wetland 11 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.7: Wetland 13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP9.1: Station Road Inflow=0.1 cfs 0.024 af
Primary=0.1 cfs 0.024 af

Total Runoff Area = 36.786 ac Runoff Volume = 0.045 af Average Runoff Depth = 0.01"
88.37% Pervious = 32.509 ac 11.63% Impervious = 4.277 ac

Summary for Subcatchment EX10.1:

Runoff = 0.0 cfs @ 12.56 hrs, Volume= 0.006 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.215	80	>75% Grass cover, Good, HSG D
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
0.794	77	Woods, Good, HSG D
1.073	79	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.0 cfs @ 12.50 hrs, Volume= 0.000 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.010	77	Brush, Poor, HSG C
0.005	83	Brush, Poor, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	76	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.007	48	Brush, Poor, HSG A
0.019	83	Brush, Poor, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.064	48	Brush, Poor, HSG A
0.003	83	Brush, Poor, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.361	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.452	37	Weighted Average
0.428		94.65% Pervious Area
0.024		5.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1920	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
24.9	376	0.0101	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.5	426	Total			

Summary for Subcatchment EX10.12B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.035	48	Brush, Poor, HSG A
0.099	83	Brush, Poor, HSG D
0.399	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.851	54	Weighted Average
0.851		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.1	181	0.0558	0.59		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.0	231	Total			

Summary for Subcatchment EX10.13A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.028	48	Brush, Poor, HSG A
0.262	76	Gravel roads, HSG A
0.552	98	Paved parking, HSG A
0.545	30	Woods, Good, HSG A
1.387	66	Weighted Average
0.835		60.21% Pervious Area
0.552		39.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
10.5	325	0.0425	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.9	375	Total			

Summary for Subcatchment EX10.13B:

Runoff = 0.0 cfs @ 15.50 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.015	48	Brush, Poor, HSG A
0.226	98	Paved parking, HSG A
0.132	30	Woods, Good, HSG A
0.373	72	Weighted Average
0.147		39.42% Pervious Area
0.226		60.58% Impervious Area

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

Summary for Subcatchment EX10.14A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.386	39	>75% Grass cover, Good, HSG A
0.005	48	Brush, Poor, HSG A
0.542	98	Paved parking, HSG A
3.138	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.528		86.68% Pervious Area
0.542		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment EX10.14B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.845	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.074	76	Gravel roads, HSG A
0.935	98	Paved parking, HSG A
1.013	30	Woods, Good, HSG A
2.904	56	Weighted Average
1.970		67.82% Pervious Area
0.935		32.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1220	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.3	386	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.6	436	Total			

Summary for Subcatchment EX10.15:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.948	39	>75% Grass cover, Good, HSG A
0.154	48	Brush, Poor, HSG A
0.264	98	Paved parking, HSG A
2.913	30	Woods, Good, HSG A
4.280	37	Weighted Average
4.016		93.83% Pervious Area
0.264		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0660	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
15.5	478	0.0105	0.51		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.0	528	Total			

Summary for Subcatchment EX10.2:

Runoff = 0.0 cfs @ 12.39 hrs, Volume= 0.004 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.135	80	>75% Grass cover, Good, HSG D
0.095	91	Gravel roads, HSG D
0.011	98	Paved parking, HSG D
0.403	77	Woods, Good, HSG D
0.644	80	Weighted Average
0.633		98.33% Pervious Area
0.011		1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.7	150	0.0187	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.9	200	Total			

Summary for Subcatchment EX10.3:

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 0.005 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.005	83	Brush, Poor, HSG D
0.058	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.085	80	>75% Grass cover, Good, HSG D
0.003	83	Brush, Poor, HSG D
0.051	91	Gravel roads, HSG D
0.100	98	Paved parking, HSG A
0.560	30	Woods, Good, HSG A
0.947	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.715		94.52% Pervious Area
0.100		5.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	124	0.1347	0.92		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.9	303	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	572	Total			

Summary for Subcatchment EX10.4B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.074	80	>75% Grass cover, Good, HSG D
0.056	91	Gravel roads, HSG D
0.404	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.294	77	Woods, Good, HSG D
3.038	63	Weighted Average
2.634		86.70% Pervious Area
0.404		13.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment EX10.5:

Runoff = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.071	80	>75% Grass cover, Good, HSG D
0.049	83	Brush, Poor, HSG D
0.717	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.026	39	>75% Grass cover, Good, HSG A
0.001	48	Brush, Poor, HSG A
0.011	83	Brush, Poor, HSG D
0.063	98	Paved parking, HSG A
0.513	30	Woods, Good, HSG A
0.027	77	Woods, Good, HSG D
0.641	40	Weighted Average
0.578		90.15% Pervious Area
0.063		9.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	217	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.6	267	Total			

Summary for Subcatchment EX10.6B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.042	77	Brush, Poor, HSG C
0.178	83	Brush, Poor, HSG D
0.000	98	Paved parking, HSG A
2.533	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.532	77	Woods, Good, HSG D
4.484	50	Weighted Average
4.483		99.99% Pervious Area
0.000		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	50	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.9	262	0.1290	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.8	312	Total			

Summary for Subcatchment EX10.7A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.079	48	Brush, Poor, HSG A
0.029	83	Brush, Poor, HSG D
1.417	30	Woods, Good, HSG A
0.194	77	Woods, Good, HSG D
1.719	37	Weighted Average
1.719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	189	0.1840	1.07		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
11.3	368	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
38.6	607	Total			

Summary for Subcatchment EX10.7B: Subcat EX10.7B

Runoff = 0.0 cfs @ 12.52 hrs, Volume= 0.000 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.010	83	Brush, Poor, HSG D
0.002	30	Woods, Good, HSG A
0.071	77	Woods, Good, HSG D
0.083	77	Weighted Average
0.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.259	74	>75% Grass cover, Good, HSG C
0.009	77	Brush, Poor, HSG C
0.013	83	Brush, Poor, HSG D
0.341	30	Woods, Good, HSG A
1.415	70	Woods, Good, HSG C
0.405	77	Woods, Good, HSG D
2.822	62	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 0.1 cfs @ 12.73 hrs, Volume= 0.024 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.128	76	Gravel roads, HSG A
0.146	91	Gravel roads, HSG D
0.547	98	Paved parking, HSG A
0.553	98	Paved parking, HSG D
0.258	30	Woods, Good, HSG A
0.579	77	Woods, Good, HSG D
2.211	83	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Pond P-10.4: Pond

Inflow Area = 3.038 ac, 13.30% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 124.00' @ 0.00 hrs Surf.Area= 181 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 0.07" for 1" event
Inflow = 0.0 cfs @ 12.56 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 12.56 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 0.04" for 1" event
Inflow = 0.0 cfs @ 12.50 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 12.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.892 ac, 28.20% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 15.50 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 15.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.303 ac, 1.86% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.975 ac, 21.17% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.644 ac, 1.67% Impervious, Inflow Depth = 0.08" for 1" event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.51 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 12.51 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 12.52 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 12.52 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 0.13" for 1" event
Inflow = 0.1 cfs @ 12.73 hrs, Volume= 0.024 af
Primary = 0.1 cfs @ 12.73 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=1.41"
Flow Length=250' Tc=19.0 min CN=79 Runoff=1.2 cfs 0.126 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=1.22"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=76 Runoff=0.1 cfs 0.009 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=0.20"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.1 cfs 0.019 af

SubcatchmentEX10.12A: Runoff Area=0.452 ac 5.35% Impervious Runoff Depth=0.00"
Flow Length=426' Tc=33.5 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.12B: Runoff Area=0.851 ac 0.00% Impervious Runoff Depth=0.25"
Flow Length=231' Tc=33.0 min CN=54 Runoff=0.1 cfs 0.018 af

SubcatchmentEX10.13A: Runoff Area=1.387 ac 39.79% Impervious Runoff Depth=0.69"
Flow Length=375' Tc=15.9 min CN=66 Runoff=0.7 cfs 0.080 af

SubcatchmentEX10.13B: Runoff Area=0.373 ac 60.58% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=72 Runoff=0.4 cfs 0.031 af

SubcatchmentEX10.14A: Runoff Area=4.071 ac 13.32% Impervious Runoff Depth=0.01"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.0 cfs 0.002 af

SubcatchmentEX10.14B: Runoff Area=2.904 ac 32.18% Impervious Runoff Depth=0.31"
Flow Length=436' Tc=30.6 min CN=56 Runoff=0.3 cfs 0.075 af

SubcatchmentEX10.15: Runoff Area=4.280 ac 6.17% Impervious Runoff Depth=0.00"
Flow Length=528' Tc=23.0 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.2: Runoff Area=0.644 ac 1.67% Impervious Runoff Depth=1.48"
Flow Length=200' Tc=10.9 min CN=80 Runoff=0.9 cfs 0.079 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=1.35"
Flow Length=100' Tc=13.4 min CN=78 Runoff=1.2 cfs 0.111 af

SubcatchmentEX10.4A: Runoff Area=1.814 ac 5.48% Impervious Runoff Depth=0.56"
Flow Length=572' Tc=17.3 min CN=63 Runoff=0.6 cfs 0.085 af

SubcatchmentEX10.4B: Runoff Area=3.038 ac 13.30% Impervious Runoff Depth=0.56"
Flow Length=516' Tc=13.4 min CN=63 Runoff=1.2 cfs 0.143 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=1.35"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.8 cfs 0.094 af

SubcatchmentEX10.6A: Runoff Area=0.641 ac 9.85% Impervious Runoff Depth=0.01"
Flow Length=267' Tc=14.6 min CN=40 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.6B: Runoff Area=4.484 ac 0.01% Impervious Runoff Depth=0.15"
Flow Length=312' Tc=13.8 min CN=50 Runoff=0.1 cfs 0.056 af

SubcatchmentEX10.7A: Runoff Area=1.719 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=607' Tc=38.6 min CN=37 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.7B: Subcat EX10.7B Runoff Area=0.083 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=136' Tc=11.8 min CN=77 Runoff=0.1 cfs 0.009 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=0.52"
Flow Length=384' Tc=7.6 min CN=62 Runoff=1.1 cfs 0.123 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=1.69"
Flow Length=727' Tc=41.2 min CN=83 Runoff=2.1 cfs 0.312 af

Pond P-10.4: Pond Peak Elev=127.61' Storage=6,227 cf Inflow=1.2 cfs 0.143 af
Outflow=0.0 cfs 0.000 af

Link DP10.1: Wetland 18 Inflow=1.2 cfs 0.126 af
Primary=1.2 cfs 0.126 af

Link DP10.10: Vernal Pool 4 Inflow=0.1 cfs 0.009 af
Primary=0.1 cfs 0.009 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=0.9 cfs 0.130 af
Primary=0.9 cfs 0.130 af

Link DP10.12: Wetland 6 Inflow=0.1 cfs 0.018 af
Primary=0.1 cfs 0.018 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=0.3 cfs 0.077 af
Primary=0.3 cfs 0.077 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.2: Wetland 19 Inflow=0.9 cfs 0.079 af
Primary=0.9 cfs 0.079 af

Link DP10.3: Wetland 15 Inflow=1.2 cfs 0.111 af
Primary=1.2 cfs 0.111 af

Link DP10.4: Hop Brook Inflow=0.6 cfs 0.085 af
Primary=0.6 cfs 0.085 af

Link DP10.5: Wetland 14 Inflow=0.8 cfs 0.094 af
Primary=0.8 cfs 0.094 af

Link DP10.6: Wetland 11 Inflow=0.1 cfs 0.056 af
Primary=0.1 cfs 0.056 af

Link DP10.7: Wetland 13 Inflow=0.1 cfs 0.009 af
Primary=0.1 cfs 0.009 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=1.1 cfs 0.123 af
Primary=1.1 cfs 0.123 af

Link DP9.1: Station Road Inflow=2.1 cfs 0.312 af
Primary=2.1 cfs 0.312 af

Total Runoff Area = 36.786 ac Runoff Volume = 1.372 af Average Runoff Depth = 0.45"
88.37% Pervious = 32.509 ac 11.63% Impervious = 4.277 ac

Summary for Subcatchment EX10.1:

Runoff = 1.2 cfs @ 12.27 hrs, Volume= 0.126 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.215	80	>75% Grass cover, Good, HSG D
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
0.794	77	Woods, Good, HSG D
1.073	79	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.009 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.010	77	Brush, Poor, HSG C
0.005	83	Brush, Poor, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	76	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 0.1 cfs @ 12.47 hrs, Volume= 0.019 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.007	48	Brush, Poor, HSG A
0.019	83	Brush, Poor, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.064	48	Brush, Poor, HSG A
0.003	83	Brush, Poor, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.361	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.452	37	Weighted Average
0.428		94.65% Pervious Area
0.024		5.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1920	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
24.9	376	0.0101	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.5	426	Total			

Summary for Subcatchment EX10.12B:

Runoff = 0.1 cfs @ 12.73 hrs, Volume= 0.018 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.035	48	Brush, Poor, HSG A
0.099	83	Brush, Poor, HSG D
0.399	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.851	54	Weighted Average
0.851		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.1	181	0.0558	0.59		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.0	231	Total			

Summary for Subcatchment EX10.13A:

Runoff = 0.7 cfs @ 12.26 hrs, Volume= 0.080 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.028	48	Brush, Poor, HSG A
0.262	76	Gravel roads, HSG A
0.552	98	Paved parking, HSG A
0.545	30	Woods, Good, HSG A
1.387	66	Weighted Average
0.835		60.21% Pervious Area
0.552		39.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
10.5	325	0.0425	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.9	375	Total			

Summary for Subcatchment EX10.13B:

Runoff = 0.4 cfs @ 12.10 hrs, Volume= 0.031 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.015	48	Brush, Poor, HSG A
0.226	98	Paved parking, HSG A
0.132	30	Woods, Good, HSG A
0.373	72	Weighted Average
0.147		39.42% Pervious Area
0.226		60.58% Impervious Area

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

Summary for Subcatchment EX10.14A:

Runoff = 0.0 cfs @ 23.20 hrs, Volume= 0.002 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.386	39	>75% Grass cover, Good, HSG A
0.005	48	Brush, Poor, HSG A
0.542	98	Paved parking, HSG A
3.138	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.528		86.68% Pervious Area
0.542		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment EX10.14B:

Runoff = 0.3 cfs @ 12.65 hrs, Volume= 0.075 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.845	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.074	76	Gravel roads, HSG A
0.935	98	Paved parking, HSG A
1.013	30	Woods, Good, HSG A
2.904	56	Weighted Average
1.970		67.82% Pervious Area
0.935		32.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1220	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.3	386	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.6	436	Total			

Summary for Subcatchment EX10.15:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.948	39	>75% Grass cover, Good, HSG A
0.154	48	Brush, Poor, HSG A
0.264	98	Paved parking, HSG A
2.913	30	Woods, Good, HSG A
4.280	37	Weighted Average
4.016		93.83% Pervious Area
0.264		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0660	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
15.5	478	0.0105	0.51		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.0	528	Total			

Summary for Subcatchment EX10.2:

Runoff = 0.9 cfs @ 12.15 hrs, Volume= 0.079 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.135	80	>75% Grass cover, Good, HSG D
0.095	91	Gravel roads, HSG D
0.011	98	Paved parking, HSG D
0.403	77	Woods, Good, HSG D
0.644	80	Weighted Average
0.633		98.33% Pervious Area
0.011		1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.7	150	0.0187	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.9	200	Total			

Summary for Subcatchment EX10.3:

Runoff = 1.2 cfs @ 12.19 hrs, Volume= 0.111 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.005	83	Brush, Poor, HSG D
0.058	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4A:

Runoff = 0.6 cfs @ 12.31 hrs, Volume= 0.085 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.085	80	>75% Grass cover, Good, HSG D
0.003	83	Brush, Poor, HSG D
0.051	91	Gravel roads, HSG D
0.100	98	Paved parking, HSG A
0.560	30	Woods, Good, HSG A
0.947	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.715		94.52% Pervious Area
0.100		5.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	124	0.1347	0.92		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.9	303	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	572	Total			

Summary for Subcatchment EX10.4B:

Runoff = 1.2 cfs @ 12.23 hrs, Volume= 0.143 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.074	80	>75% Grass cover, Good, HSG D
0.056	91	Gravel roads, HSG D
0.404	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.294	77	Woods, Good, HSG D
3.038	63	Weighted Average
2.634		86.70% Pervious Area
0.404		13.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment EX10.5:

Runoff = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.071	80	>75% Grass cover, Good, HSG D
0.049	83	Brush, Poor, HSG D
0.717	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6A:

Runoff = 0.0 cfs @ 23.15 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.026	39	>75% Grass cover, Good, HSG A
0.001	48	Brush, Poor, HSG A
0.011	83	Brush, Poor, HSG D
0.063	98	Paved parking, HSG A
0.513	30	Woods, Good, HSG A
0.027	77	Woods, Good, HSG D
0.641	40	Weighted Average
0.578		90.15% Pervious Area
0.063		9.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	217	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.6	267	Total			

Summary for Subcatchment EX10.6B:

Runoff = 0.1 cfs @ 12.56 hrs, Volume= 0.056 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.042	77	Brush, Poor, HSG C
0.178	83	Brush, Poor, HSG D
0.000	98	Paved parking, HSG A
2.533	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.532	77	Woods, Good, HSG D
4.484	50	Weighted Average
4.483		99.99% Pervious Area
0.000		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	50	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.9	262	0.1290	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.8	312	Total			

Summary for Subcatchment EX10.7A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.079	48	Brush, Poor, HSG A
0.029	83	Brush, Poor, HSG D
1.417	30	Woods, Good, HSG A
0.194	77	Woods, Good, HSG D
1.719	37	Weighted Average
1.719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	189	0.1840	1.07		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
11.3	368	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
38.6	607	Total			

Summary for Subcatchment EX10.7B: Subcat EX10.7B

Runoff = 0.1 cfs @ 12.17 hrs, Volume= 0.009 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.010	83	Brush, Poor, HSG D
0.002	30	Woods, Good, HSG A
0.071	77	Woods, Good, HSG D
0.083	77	Weighted Average
0.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 1.1 cfs @ 12.14 hrs, Volume= 0.123 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.259	74	>75% Grass cover, Good, HSG C
0.009	77	Brush, Poor, HSG C
0.013	83	Brush, Poor, HSG D
0.341	30	Woods, Good, HSG A
1.415	70	Woods, Good, HSG C
0.405	77	Woods, Good, HSG D
2.822	62	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 2.1 cfs @ 12.59 hrs, Volume= 0.312 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.128	76	Gravel roads, HSG A
0.146	91	Gravel roads, HSG D
0.547	98	Paved parking, HSG A
0.553	98	Paved parking, HSG D
0.258	30	Woods, Good, HSG A
0.579	77	Woods, Good, HSG D
2.211	83	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Pond P-10.4: Pond

Inflow Area = 3.038 ac, 13.30% Impervious, Inflow Depth = 0.56" for 2-yr event
Inflow = 1.2 cfs @ 12.23 hrs, Volume= 0.143 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 127.61' @ 24.76 hrs Surf.Area= 3,887 sf Storage= 6,227 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 1.41" for 2-yr event
Inflow = 1.2 cfs @ 12.27 hrs, Volume= 0.126 af
Primary = 1.2 cfs @ 12.27 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 1.22" for 2-yr event
Inflow = 0.1 cfs @ 12.11 hrs, Volume= 0.009 af
Primary = 0.1 cfs @ 12.11 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.892 ac, 28.20% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 0.9 cfs @ 12.25 hrs, Volume= 0.130 af
Primary = 0.9 cfs @ 12.25 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.303 ac, 1.86% Impervious, Inflow Depth = 0.16" for 2-yr event
Inflow = 0.1 cfs @ 12.73 hrs, Volume= 0.018 af
Primary = 0.1 cfs @ 12.73 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.975 ac, 21.17% Impervious, Inflow Depth = 0.13" for 2-yr event
Inflow = 0.3 cfs @ 12.65 hrs, Volume= 0.077 af
Primary = 0.3 cfs @ 12.65 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.644 ac, 1.67% Impervious, Inflow Depth = 1.48" for 2-yr event
Inflow = 0.9 cfs @ 12.15 hrs, Volume= 0.079 af
Primary = 0.9 cfs @ 12.15 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 1.2 cfs @ 12.19 hrs, Volume= 0.111 af
Primary = 1.2 cfs @ 12.19 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 0.21" for 2-yr event
Inflow = 0.6 cfs @ 12.31 hrs, Volume= 0.085 af
Primary = 0.6 cfs @ 12.31 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af
Primary = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 0.13" for 2-yr event
Inflow = 0.1 cfs @ 12.56 hrs, Volume= 0.056 af
Primary = 0.1 cfs @ 12.56 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.06" for 2-yr event
Inflow = 0.1 cfs @ 12.17 hrs, Volume= 0.009 af
Primary = 0.1 cfs @ 12.17 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 0.52" for 2-yr event
Inflow = 1.1 cfs @ 12.14 hrs, Volume= 0.123 af
Primary = 1.1 cfs @ 12.14 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 1.69" for 2-yr event
Inflow = 2.1 cfs @ 12.59 hrs, Volume= 0.312 af
Primary = 2.1 cfs @ 12.59 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=2.89"
Flow Length=250' Tc=19.0 min CN=79 Runoff=2.5 cfs 0.258 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=2.62"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=76 Runoff=0.2 cfs 0.018 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=0.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.7 cfs 0.080 af

SubcatchmentEX10.12A: Runoff Area=0.452 ac 5.35% Impervious Runoff Depth=0.15"
Flow Length=426' Tc=33.5 min CN=37 Runoff=0.0 cfs 0.006 af

SubcatchmentEX10.12B: Runoff Area=0.851 ac 0.00% Impervious Runoff Depth=0.97"
Flow Length=231' Tc=33.0 min CN=54 Runoff=0.4 cfs 0.069 af

SubcatchmentEX10.13A: Runoff Area=1.387 ac 39.79% Impervious Runoff Depth=1.80"
Flow Length=375' Tc=15.9 min CN=66 Runoff=2.1 cfs 0.208 af

SubcatchmentEX10.13B: Runoff Area=0.373 ac 60.58% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=72 Runoff=1.0 cfs 0.071 af

SubcatchmentEX10.14A: Runoff Area=4.071 ac 13.32% Impervious Runoff Depth=0.26"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.2 cfs 0.087 af

SubcatchmentEX10.14B: Runoff Area=2.904 ac 32.18% Impervious Runoff Depth=1.09"
Flow Length=436' Tc=30.6 min CN=56 Runoff=1.8 cfs 0.265 af

SubcatchmentEX10.15: Runoff Area=4.280 ac 6.17% Impervious Runoff Depth=0.15"
Flow Length=528' Tc=23.0 min CN=37 Runoff=0.1 cfs 0.055 af

SubcatchmentEX10.2: Runoff Area=0.644 ac 1.67% Impervious Runoff Depth=2.98"
Flow Length=200' Tc=10.9 min CN=80 Runoff=1.9 cfs 0.160 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=2.80"
Flow Length=100' Tc=13.4 min CN=78 Runoff=2.6 cfs 0.230 af

SubcatchmentEX10.4A: Runoff Area=1.814 ac 5.48% Impervious Runoff Depth=1.57"
Flow Length=572' Tc=17.3 min CN=63 Runoff=2.2 cfs 0.238 af

SubcatchmentEX10.4B: Runoff Area=3.038 ac 13.30% Impervious Runoff Depth=1.57"
Flow Length=516' Tc=13.4 min CN=63 Runoff=4.1 cfs 0.398 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=2.80"
Flow Length=118' Tc=23.4 min CN=78 Runoff=1.7 cfs 0.195 af

SubcatchmentEX10.6A: Runoff Area=0.641 ac 9.85% Impervious Runoff Depth=0.26"
Flow Length=267' Tc=14.6 min CN=40 Runoff=0.0 cfs 0.014 af

SubcatchmentEX10.6B: Runoff Area=4.484 ac 0.01% Impervious Runoff Depth=0.73"
Flow Length=312' Tc=13.8 min CN=50 Runoff=1.9 cfs 0.274 af

SubcatchmentEX10.7A: Runoff Area=1.719 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=607' Tc=38.6 min CN=37 Runoff=0.0 cfs 0.022 af

SubcatchmentEX10.7B: Subcat EX10.7B Runoff Area=0.083 ac 0.00% Impervious Runoff Depth=2.71"
Flow Length=136' Tc=11.8 min CN=77 Runoff=0.2 cfs 0.019 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.0 cfs 0.007 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=1.50"
Flow Length=384' Tc=7.6 min CN=62 Runoff=4.3 cfs 0.353 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=3.26"
Flow Length=727' Tc=41.2 min CN=83 Runoff=4.1 cfs 0.602 af

Pond P-10.4: Pond Peak Elev=129.18' Storage=17,296 cf Inflow=4.1 cfs 0.398 af
Outflow=0.0 cfs 0.000 af

Link DP10.1: Wetland 18 Inflow=2.5 cfs 0.258 af
Primary=2.5 cfs 0.258 af

Link DP10.10: Vernal Pool 4 Inflow=0.2 cfs 0.018 af
Primary=0.2 cfs 0.018 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=3.3 cfs 0.358 af
Primary=3.3 cfs 0.358 af

Link DP10.12: Wetland 6 Inflow=0.4 cfs 0.074 af
Primary=0.4 cfs 0.074 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=2.0 cfs 0.352 af
Primary=2.0 cfs 0.352 af

Link DP10.15: Wetland 4 Inflow=0.1 cfs 0.055 af
Primary=0.1 cfs 0.055 af

Link DP10.2: Wetland 19 Inflow=1.9 cfs 0.160 af
Primary=1.9 cfs 0.160 af

Link DP10.3: Wetland 15 Inflow=2.6 cfs 0.230 af
Primary=2.6 cfs 0.230 af

Link DP10.4: Hop Brook Inflow=2.2 cfs 0.238 af
Primary=2.2 cfs 0.238 af

Link DP10.5: Wetland 14 Inflow=1.7 cfs 0.195 af
Primary=1.7 cfs 0.195 af

Link DP10.6: Wetland 11 Inflow=1.9 cfs 0.288 af
Primary=1.9 cfs 0.288 af

Link DP10.7: Wetland 13 Inflow=0.2 cfs 0.041 af
Primary=0.2 cfs 0.041 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=4.3 cfs 0.353 af
Primary=4.3 cfs 0.353 af

Link DP9.1: Station Road Inflow=4.1 cfs 0.602 af
Primary=4.1 cfs 0.602 af

Total Runoff Area = 36.786 ac Runoff Volume = 3.627 af Average Runoff Depth = 1.18"
88.37% Pervious = 32.509 ac 11.63% Impervious = 4.277 ac

Summary for Subcatchment EX10.1:

Runoff = 2.5 cfs @ 12.26 hrs, Volume= 0.258 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.215	80	>75% Grass cover, Good, HSG D
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
0.794	77	Woods, Good, HSG D
1.073	79	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.018 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.010	77	Brush, Poor, HSG C
0.005	83	Brush, Poor, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	76	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 0.7 cfs @ 12.19 hrs, Volume= 0.080 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.007	48	Brush, Poor, HSG A
0.019	83	Brush, Poor, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12A:

Runoff = 0.0 cfs @ 14.78 hrs, Volume= 0.006 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.064	48	Brush, Poor, HSG A
0.003	83	Brush, Poor, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.361	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.452	37	Weighted Average
0.428		94.65% Pervious Area
0.024		5.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1920	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
24.9	376	0.0101	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.5	426	Total			

Summary for Subcatchment EX10.12B:

Runoff = 0.4 cfs @ 12.57 hrs, Volume= 0.069 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.035	48	Brush, Poor, HSG A
0.099	83	Brush, Poor, HSG D
0.399	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.851	54	Weighted Average
0.851		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.1	181	0.0558	0.59		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.0	231	Total			

Summary for Subcatchment EX10.13A:

Runoff = 2.1 cfs @ 12.24 hrs, Volume= 0.208 af, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.028	48	Brush, Poor, HSG A
0.262	76	Gravel roads, HSG A
0.552	98	Paved parking, HSG A
0.545	30	Woods, Good, HSG A
1.387	66	Weighted Average
0.835		60.21% Pervious Area
0.552		39.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
10.5	325	0.0425	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.9	375	Total			

Summary for Subcatchment EX10.13B:

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 0.071 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.015	48	Brush, Poor, HSG A
0.226	98	Paved parking, HSG A
0.132	30	Woods, Good, HSG A
0.373	72	Weighted Average
0.147		39.42% Pervious Area
0.226		60.58% Impervious Area

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

Summary for Subcatchment EX10.14A:

Runoff = 0.2 cfs @ 12.62 hrs, Volume= 0.087 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.386	39	>75% Grass cover, Good, HSG A
0.005	48	Brush, Poor, HSG A
0.542	98	Paved parking, HSG A
3.138	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.528		86.68% Pervious Area
0.542		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment EX10.14B:

Runoff = 1.8 cfs @ 12.51 hrs, Volume= 0.265 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.845	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.074	76	Gravel roads, HSG A
0.935	98	Paved parking, HSG A
1.013	30	Woods, Good, HSG A
2.904	56	Weighted Average
1.970		67.82% Pervious Area
0.935		32.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1220	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.3	386	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.6	436	Total			

Summary for Subcatchment EX10.15:

Runoff = 0.1 cfs @ 14.03 hrs, Volume= 0.055 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.948	39	>75% Grass cover, Good, HSG A
0.154	48	Brush, Poor, HSG A
0.264	98	Paved parking, HSG A
2.913	30	Woods, Good, HSG A
4.280	37	Weighted Average
4.016		93.83% Pervious Area
0.264		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0660	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
15.5	478	0.0105	0.51		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.0	528	Total			

Summary for Subcatchment EX10.2:

Runoff = 1.9 cfs @ 12.15 hrs, Volume= 0.160 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.135	80	>75% Grass cover, Good, HSG D
0.095	91	Gravel roads, HSG D
0.011	98	Paved parking, HSG D
0.403	77	Woods, Good, HSG D
0.644	80	Weighted Average
0.633		98.33% Pervious Area
0.011		1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.7	150	0.0187	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.9	200	Total			

Summary for Subcatchment EX10.3:

Runoff = 2.6 cfs @ 12.19 hrs, Volume= 0.230 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.005	83	Brush, Poor, HSG D
0.058	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4A:

Runoff = 2.2 cfs @ 12.26 hrs, Volume= 0.238 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.085	80	>75% Grass cover, Good, HSG D
0.003	83	Brush, Poor, HSG D
0.051	91	Gravel roads, HSG D
0.100	98	Paved parking, HSG A
0.560	30	Woods, Good, HSG A
0.947	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.715		94.52% Pervious Area
0.100		5.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	124	0.1347	0.92		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.9	303	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	572	Total			

Summary for Subcatchment EX10.4B:

Runoff = 4.1 cfs @ 12.20 hrs, Volume= 0.398 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.074	80	>75% Grass cover, Good, HSG D
0.056	91	Gravel roads, HSG D
0.404	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.294	77	Woods, Good, HSG D
3.038	63	Weighted Average
2.634		86.70% Pervious Area
0.404		13.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment EX10.5:

Runoff = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.071	80	>75% Grass cover, Good, HSG D
0.049	83	Brush, Poor, HSG D
0.717	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6A:

Runoff = 0.0 cfs @ 12.55 hrs, Volume= 0.014 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.026	39	>75% Grass cover, Good, HSG A
0.001	48	Brush, Poor, HSG A
0.011	83	Brush, Poor, HSG D
0.063	98	Paved parking, HSG A
0.513	30	Woods, Good, HSG A
0.027	77	Woods, Good, HSG D
0.641	40	Weighted Average
0.578		90.15% Pervious Area
0.063		9.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	217	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.6	267	Total			

Summary for Subcatchment EX10.6B:

Runoff = 1.9 cfs @ 12.26 hrs, Volume= 0.274 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.042	77	Brush, Poor, HSG C
0.178	83	Brush, Poor, HSG D
0.000	98	Paved parking, HSG A
2.533	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.532	77	Woods, Good, HSG D
4.484	50	Weighted Average
4.483		99.99% Pervious Area
0.000		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	50	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.9	262	0.1290	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.8	312	Total			

Summary for Subcatchment EX10.7A:

Runoff = 0.0 cfs @ 14.88 hrs, Volume= 0.022 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.079	48	Brush, Poor, HSG A
0.029	83	Brush, Poor, HSG D
1.417	30	Woods, Good, HSG A
0.194	77	Woods, Good, HSG D
1.719	37	Weighted Average
1.719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	189	0.1840	1.07		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
11.3	368	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
38.6	607	Total			

Summary for Subcatchment EX10.7B: Subcat EX10.7B

Runoff = 0.2 cfs @ 12.16 hrs, Volume= 0.019 af, Depth= 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.010	83	Brush, Poor, HSG D
0.002	30	Woods, Good, HSG A
0.071	77	Woods, Good, HSG D
0.083	77	Weighted Average
0.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 4.3 cfs @ 12.12 hrs, Volume= 0.353 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.259	74	>75% Grass cover, Good, HSG C
0.009	77	Brush, Poor, HSG C
0.013	83	Brush, Poor, HSG D
0.341	30	Woods, Good, HSG A
1.415	70	Woods, Good, HSG C
0.405	77	Woods, Good, HSG D
2.822	62	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 4.1 cfs @ 12.58 hrs, Volume= 0.602 af, Depth= 3.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.128	76	Gravel roads, HSG A
0.146	91	Gravel roads, HSG D
0.547	98	Paved parking, HSG A
0.553	98	Paved parking, HSG D
0.258	30	Woods, Good, HSG A
0.579	77	Woods, Good, HSG D
2.211	83	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Pond P-10.4: Pond

Inflow Area = 3.038 ac, 13.30% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 4.1 cfs @ 12.20 hrs, Volume= 0.398 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 129.18' @ 24.76 hrs Surf.Area= 29,622 sf Storage= 17,296 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 2.89" for 10-yr event
Inflow = 2.5 cfs @ 12.26 hrs, Volume= 0.258 af
Primary = 2.5 cfs @ 12.26 hrs, Volume= 0.258 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 2.62" for 10-yr event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.018 af
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.892 ac, 28.20% Impervious, Inflow Depth = 1.49" for 10-yr event
Inflow = 3.3 cfs @ 12.20 hrs, Volume= 0.358 af
Primary = 3.3 cfs @ 12.20 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.303 ac, 1.86% Impervious, Inflow Depth = 0.69" for 10-yr event
Inflow = 0.4 cfs @ 12.57 hrs, Volume= 0.074 af
Primary = 0.4 cfs @ 12.57 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.975 ac, 21.17% Impervious, Inflow Depth = 0.61" for 10-yr event
Inflow = 2.0 cfs @ 12.54 hrs, Volume= 0.352 af
Primary = 2.0 cfs @ 12.54 hrs, Volume= 0.352 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.15" for 10-yr event
Inflow = 0.1 cfs @ 14.03 hrs, Volume= 0.055 af
Primary = 0.1 cfs @ 14.03 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.644 ac, 1.67% Impervious, Inflow Depth = 2.98" for 10-yr event
Inflow = 1.9 cfs @ 12.15 hrs, Volume= 0.160 af
Primary = 1.9 cfs @ 12.15 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 2.6 cfs @ 12.19 hrs, Volume= 0.230 af
Primary = 2.6 cfs @ 12.19 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 0.59" for 10-yr event
Inflow = 2.2 cfs @ 12.26 hrs, Volume= 0.238 af
Primary = 2.2 cfs @ 12.26 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af
Primary = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 0.67" for 10-yr event
Inflow = 1.9 cfs @ 12.26 hrs, Volume= 0.288 af
Primary = 1.9 cfs @ 12.26 hrs, Volume= 0.288 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.27" for 10-yr event
Inflow = 0.2 cfs @ 12.16 hrs, Volume= 0.041 af
Primary = 0.2 cfs @ 12.16 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 1.50" for 10-yr event
Inflow = 4.3 cfs @ 12.12 hrs, Volume= 0.353 af
Primary = 4.3 cfs @ 12.12 hrs, Volume= 0.353 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 3.26" for 10-yr event
Inflow = 4.1 cfs @ 12.58 hrs, Volume= 0.602 af
Primary = 4.1 cfs @ 12.58 hrs, Volume= 0.602 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=3.89"
Flow Length=250' Tc=19.0 min CN=79 Runoff=3.4 cfs 0.347 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=3.58"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=76 Runoff=0.3 cfs 0.025 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=1.41"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=1.4 cfs 0.133 af

SubcatchmentEX10.12A: Runoff Area=0.452 ac 5.35% Impervious Runoff Depth=0.40"
Flow Length=426' Tc=33.5 min CN=37 Runoff=0.0 cfs 0.015 af

SubcatchmentEX10.12B: Runoff Area=0.851 ac 0.00% Impervious Runoff Depth=1.57"
Flow Length=231' Tc=33.0 min CN=54 Runoff=0.8 cfs 0.111 af

SubcatchmentEX10.13A: Runoff Area=1.387 ac 39.79% Impervious Runoff Depth=2.61"
Flow Length=375' Tc=15.9 min CN=66 Runoff=3.1 cfs 0.302 af

SubcatchmentEX10.13B: Runoff Area=0.373 ac 60.58% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=72 Runoff=1.4 cfs 0.099 af

SubcatchmentEX10.14A: Runoff Area=4.071 ac 13.32% Impervious Runoff Depth=0.57"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.9 cfs 0.194 af

SubcatchmentEX10.14B: Runoff Area=2.904 ac 32.18% Impervious Runoff Depth=1.73"
Flow Length=436' Tc=30.6 min CN=56 Runoff=3.0 cfs 0.420 af

SubcatchmentEX10.15: Runoff Area=4.280 ac 6.17% Impervious Runoff Depth=0.40"
Flow Length=528' Tc=23.0 min CN=37 Runoff=0.5 cfs 0.143 af

SubcatchmentEX10.2: Runoff Area=0.644 ac 1.67% Impervious Runoff Depth=3.99"
Flow Length=200' Tc=10.9 min CN=80 Runoff=2.5 cfs 0.214 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=100' Tc=13.4 min CN=78 Runoff=3.4 cfs 0.310 af

SubcatchmentEX10.4A: Runoff Area=1.814 ac 5.48% Impervious Runoff Depth=2.34"
Flow Length=572' Tc=17.3 min CN=63 Runoff=3.4 cfs 0.354 af

SubcatchmentEX10.4B: Runoff Area=3.038 ac 13.30% Impervious Runoff Depth=2.34"
Flow Length=516' Tc=13.4 min CN=63 Runoff=6.4 cfs 0.592 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=118' Tc=23.4 min CN=78 Runoff=2.3 cfs 0.264 af

SubcatchmentEX10.6A: Runoff Area=0.641 ac 9.85% Impervious Runoff Depth=0.57"
Flow Length=267' Tc=14.6 min CN=40 Runoff=0.2 cfs 0.031 af

SubcatchmentEX10.6B: Runoff Area=4.484 ac 0.01% Impervious Runoff Depth=1.26"
Flow Length=312' Tc=13.8 min CN=50 Runoff=4.1 cfs 0.470 af

SubcatchmentEX10.7A: Runoff Area=1.719 ac 0.00% Impervious Runoff Depth=0.40"
Flow Length=607' Tc=38.6 min CN=37 Runoff=0.2 cfs 0.058 af

SubcatchmentEX10.7B: Subcat EX10.7B Runoff Area=0.083 ac 0.00% Impervious Runoff Depth=3.68"
Flow Length=136' Tc=11.8 min CN=77 Runoff=0.3 cfs 0.025 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.1 cfs 0.023 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=2.25"
Flow Length=384' Tc=7.6 min CN=62 Runoff=6.8 cfs 0.529 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=4.31"
Flow Length=727' Tc=41.2 min CN=83 Runoff=5.4 cfs 0.793 af

Pond P-10.4: Pond Peak Elev=129.38' Storage=25,733 cf Inflow=6.4 cfs 0.592 af
Outflow=0.0 cfs 0.000 af

Link DP10.1: Wetland 18 Inflow=3.4 cfs 0.347 af
Primary=3.4 cfs 0.347 af

Link DP10.10: Vernal Pool 4 Inflow=0.3 cfs 0.025 af
Primary=0.3 cfs 0.025 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=5.2 cfs 0.534 af
Primary=5.2 cfs 0.534 af

Link DP10.12: Wetland 6 Inflow=0.8 cfs 0.126 af
Primary=0.8 cfs 0.126 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=4.0 cfs 0.614 af
Primary=4.0 cfs 0.614 af

Link DP10.15: Wetland 4 Inflow=0.5 cfs 0.143 af
Primary=0.5 cfs 0.143 af

Link DP10.2: Wetland 19 Inflow=2.5 cfs 0.214 af
Primary=2.5 cfs 0.214 af

Link DP10.3: Wetland 15 Inflow=3.4 cfs 0.310 af
Primary=3.4 cfs 0.310 af

Link DP10.4: Hop Brook Inflow=3.4 cfs 0.354 af
Primary=3.4 cfs 0.354 af

Link DP10.5: Wetland 14 Inflow=2.3 cfs 0.264 af
Primary=2.3 cfs 0.264 af

Link DP10.6: Wetland 11 Inflow=4.2 cfs 0.500 af
Primary=4.2 cfs 0.500 af

Link DP10.7: Wetland 13 Inflow=0.3 cfs 0.083 af
Primary=0.3 cfs 0.083 af

Link DP10.8: Wetland 10 Inflow=0.1 cfs 0.023 af
Primary=0.1 cfs 0.023 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=6.8 cfs 0.529 af
Primary=6.8 cfs 0.529 af

Link DP9.1: Station Road Inflow=5.4 cfs 0.793 af
Primary=5.4 cfs 0.793 af

Total Runoff Area = 36.786 ac Runoff Volume = 5.452 af Average Runoff Depth = 1.78"
88.37% Pervious = 32.509 ac 11.63% Impervious = 4.277 ac

Summary for Subcatchment EX10.1:

Runoff = 3.4 cfs @ 12.26 hrs, Volume= 0.347 af, Depth= 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.215	80	>75% Grass cover, Good, HSG D
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
0.794	77	Woods, Good, HSG D
1.073	79	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af, Depth= 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.010	77	Brush, Poor, HSG C
0.005	83	Brush, Poor, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	76	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 1.4 cfs @ 12.17 hrs, Volume= 0.133 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.007	48	Brush, Poor, HSG A
0.019	83	Brush, Poor, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12A:

Runoff = 0.0 cfs @ 12.80 hrs, Volume= 0.015 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.064	48	Brush, Poor, HSG A
0.003	83	Brush, Poor, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.361	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.452	37	Weighted Average
0.428		94.65% Pervious Area
0.024		5.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1920	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
24.9	376	0.0101	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.5	426	Total			

Summary for Subcatchment EX10.12B:

Runoff = 0.8 cfs @ 12.51 hrs, Volume= 0.111 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.035	48	Brush, Poor, HSG A
0.099	83	Brush, Poor, HSG D
0.399	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.851	54	Weighted Average
0.851		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.1	181	0.0558	0.59		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.0	231	Total			

Summary for Subcatchment EX10.13A:

Runoff = 3.1 cfs @ 12.23 hrs, Volume= 0.302 af, Depth= 2.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.028	48	Brush, Poor, HSG A
0.262	76	Gravel roads, HSG A
0.552	98	Paved parking, HSG A
0.545	30	Woods, Good, HSG A
1.387	66	Weighted Average
0.835		60.21% Pervious Area
0.552		39.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
10.5	325	0.0425	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.9	375	Total			

Summary for Subcatchment EX10.13B:

Runoff = 1.4 cfs @ 12.09 hrs, Volume= 0.099 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.015	48	Brush, Poor, HSG A
0.226	98	Paved parking, HSG A
0.132	30	Woods, Good, HSG A
0.373	72	Weighted Average
0.147		39.42% Pervious Area
0.226		60.58% Impervious Area

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

Summary for Subcatchment EX10.14A:

Runoff = 0.9 cfs @ 12.50 hrs, Volume= 0.194 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.386	39	>75% Grass cover, Good, HSG A
0.005	48	Brush, Poor, HSG A
0.542	98	Paved parking, HSG A
3.138	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.528		86.68% Pervious Area
0.542		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment EX10.14B:

Runoff = 3.0 cfs @ 12.48 hrs, Volume= 0.420 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.845	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.074	76	Gravel roads, HSG A
0.935	98	Paved parking, HSG A
1.013	30	Woods, Good, HSG A
2.904	56	Weighted Average
1.970		67.82% Pervious Area
0.935		32.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1220	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.3	386	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.6	436	Total			

Summary for Subcatchment EX10.15:

Runoff = 0.5 cfs @ 12.63 hrs, Volume= 0.143 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.948	39	>75% Grass cover, Good, HSG A
0.154	48	Brush, Poor, HSG A
0.264	98	Paved parking, HSG A
2.913	30	Woods, Good, HSG A
4.280	37	Weighted Average
4.016		93.83% Pervious Area
0.264		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0660	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
15.5	478	0.0105	0.51		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.0	528	Total			

Summary for Subcatchment EX10.2:

Runoff = 2.5 cfs @ 12.15 hrs, Volume= 0.214 af, Depth= 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.135	80	>75% Grass cover, Good, HSG D
0.095	91	Gravel roads, HSG D
0.011	98	Paved parking, HSG D
0.403	77	Woods, Good, HSG D
0.644	80	Weighted Average
0.633		98.33% Pervious Area
0.011		1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.7	150	0.0187	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.9	200	Total			

Summary for Subcatchment EX10.3:

Runoff = 3.4 cfs @ 12.18 hrs, Volume= 0.310 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.005	83	Brush, Poor, HSG D
0.058	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4A:

Runoff = 3.4 cfs @ 12.25 hrs, Volume= 0.354 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.085	80	>75% Grass cover, Good, HSG D
0.003	83	Brush, Poor, HSG D
0.051	91	Gravel roads, HSG D
0.100	98	Paved parking, HSG A
0.560	30	Woods, Good, HSG A
0.947	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.715		94.52% Pervious Area
0.100		5.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	124	0.1347	0.92		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.9	303	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	572	Total			

Summary for Subcatchment EX10.4B:

Runoff = 6.4 cfs @ 12.19 hrs, Volume= 0.592 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.074	80	>75% Grass cover, Good, HSG D
0.056	91	Gravel roads, HSG D
0.404	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.294	77	Woods, Good, HSG D
3.038	63	Weighted Average
2.634		86.70% Pervious Area
0.404		13.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment EX10.5:

Runoff = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.071	80	>75% Grass cover, Good, HSG D
0.049	83	Brush, Poor, HSG D
0.717	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6A:

Runoff = 0.2 cfs @ 12.44 hrs, Volume= 0.031 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.026	39	>75% Grass cover, Good, HSG A
0.001	48	Brush, Poor, HSG A
0.011	83	Brush, Poor, HSG D
0.063	98	Paved parking, HSG A
0.513	30	Woods, Good, HSG A
0.027	77	Woods, Good, HSG D
0.641	40	Weighted Average
0.578		90.15% Pervious Area
0.063		9.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	217	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.6	267	Total			

Summary for Subcatchment EX10.6B:

Runoff = 4.1 cfs @ 12.22 hrs, Volume= 0.470 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.042	77	Brush, Poor, HSG C
0.178	83	Brush, Poor, HSG D
0.000	98	Paved parking, HSG A
2.533	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.532	77	Woods, Good, HSG D
4.484	50	Weighted Average
4.483		99.99% Pervious Area
0.000		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	50	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.9	262	0.1290	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.8	312	Total			

Summary for Subcatchment EX10.7A:

Runoff = 0.2 cfs @ 12.90 hrs, Volume= 0.058 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.079	48	Brush, Poor, HSG A
0.029	83	Brush, Poor, HSG D
1.417	30	Woods, Good, HSG A
0.194	77	Woods, Good, HSG D
1.719	37	Weighted Average
1.719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	189	0.1840	1.07		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
11.3	368	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
38.6	607	Total			

Summary for Subcatchment EX10.7B: Subcat EX10.7B

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 0.025 af, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.010	83	Brush, Poor, HSG D
0.002	30	Woods, Good, HSG A
0.071	77	Woods, Good, HSG D
0.083	77	Weighted Average
0.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.1 cfs @ 12.45 hrs, Volume= 0.023 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 6.8 cfs @ 12.12 hrs, Volume= 0.529 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.259	74	>75% Grass cover, Good, HSG C
0.009	77	Brush, Poor, HSG C
0.013	83	Brush, Poor, HSG D
0.341	30	Woods, Good, HSG A
1.415	70	Woods, Good, HSG C
0.405	77	Woods, Good, HSG D
2.822	62	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 5.4 cfs @ 12.55 hrs, Volume= 0.793 af, Depth= 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.128	76	Gravel roads, HSG A
0.146	91	Gravel roads, HSG D
0.547	98	Paved parking, HSG A
0.553	98	Paved parking, HSG D
0.258	30	Woods, Good, HSG A
0.579	77	Woods, Good, HSG D
2.211	83	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Pond P-10.4: Pond

Inflow Area = 3.038 ac, 13.30% Impervious, Inflow Depth = 2.34" for 25-yr event
Inflow = 6.4 cfs @ 12.19 hrs, Volume= 0.592 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 129.38' @ 24.76 hrs Surf.Area= 54,582 sf Storage= 25,733 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 3.89" for 25-yr event
Inflow = 3.4 cfs @ 12.26 hrs, Volume= 0.347 af
Primary = 3.4 cfs @ 12.26 hrs, Volume= 0.347 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 3.58" for 25-yr event
Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af
Primary = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.892 ac, 28.20% Impervious, Inflow Depth = 2.22" for 25-yr event
Inflow = 5.2 cfs @ 12.18 hrs, Volume= 0.534 af
Primary = 5.2 cfs @ 12.18 hrs, Volume= 0.534 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.303 ac, 1.86% Impervious, Inflow Depth = 1.16" for 25-yr event
Inflow = 0.8 cfs @ 12.54 hrs, Volume= 0.126 af
Primary = 0.8 cfs @ 12.54 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.975 ac, 21.17% Impervious, Inflow Depth = 1.06" for 25-yr event
Inflow = 4.0 cfs @ 12.48 hrs, Volume= 0.614 af
Primary = 4.0 cfs @ 12.48 hrs, Volume= 0.614 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.40" for 25-yr event
Inflow = 0.5 cfs @ 12.63 hrs, Volume= 0.143 af
Primary = 0.5 cfs @ 12.63 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.644 ac, 1.67% Impervious, Inflow Depth = 3.99" for 25-yr event
Inflow = 2.5 cfs @ 12.15 hrs, Volume= 0.214 af
Primary = 2.5 cfs @ 12.15 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 3.4 cfs @ 12.18 hrs, Volume= 0.310 af
Primary = 3.4 cfs @ 12.18 hrs, Volume= 0.310 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 0.87" for 25-yr event
Inflow = 3.4 cfs @ 12.25 hrs, Volume= 0.354 af
Primary = 3.4 cfs @ 12.25 hrs, Volume= 0.354 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af
Primary = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 1.17" for 25-yr event
Inflow = 4.2 cfs @ 12.23 hrs, Volume= 0.500 af
Primary = 4.2 cfs @ 12.23 hrs, Volume= 0.500 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.55" for 25-yr event
Inflow = 0.3 cfs @ 12.16 hrs, Volume= 0.083 af
Primary = 0.3 cfs @ 12.16 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.45 hrs, Volume= 0.023 af
Primary = 0.1 cfs @ 12.45 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 2.25" for 25-yr event
Inflow = 6.8 cfs @ 12.12 hrs, Volume= 0.529 af
Primary = 6.8 cfs @ 12.12 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 4.31" for 25-yr event
Inflow = 5.4 cfs @ 12.55 hrs, Volume= 0.793 af
Primary = 5.4 cfs @ 12.55 hrs, Volume= 0.793 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=6.07"
Flow Length=250' Tc=19.0 min CN=79 Runoff=5.2 cfs 0.543 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=5.71"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=76 Runoff=0.5 cfs 0.040 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=2.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=3.1 cfs 0.269 af

SubcatchmentEX10.12A: Runoff Area=0.452 ac 5.35% Impervious Runoff Depth=1.21"
Flow Length=426' Tc=33.5 min CN=37 Runoff=0.2 cfs 0.046 af

SubcatchmentEX10.12B: Runoff Area=0.851 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=231' Tc=33.0 min CN=54 Runoff=1.6 cfs 0.219 af

SubcatchmentEX10.13A: Runoff Area=1.387 ac 39.79% Impervious Runoff Depth=4.50"
Flow Length=375' Tc=15.9 min CN=66 Runoff=5.4 cfs 0.521 af

SubcatchmentEX10.13B: Runoff Area=0.373 ac 60.58% Impervious Runoff Depth=5.22"
Tc=6.0 min CN=72 Runoff=2.3 cfs 0.162 af

SubcatchmentEX10.14A: Runoff Area=4.071 ac 13.32% Impervious Runoff Depth=1.52"
Flow Length=123' Tc=19.0 min CN=40 Runoff=3.8 cfs 0.516 af

SubcatchmentEX10.14B: Runoff Area=2.904 ac 32.18% Impervious Runoff Depth=3.32"
Flow Length=436' Tc=30.6 min CN=56 Runoff=6.2 cfs 0.803 af

SubcatchmentEX10.15: Runoff Area=4.280 ac 6.17% Impervious Runoff Depth=1.21"
Flow Length=528' Tc=23.0 min CN=37 Runoff=2.6 cfs 0.433 af

SubcatchmentEX10.2: Runoff Area=0.644 ac 1.67% Impervious Runoff Depth=6.19"
Flow Length=200' Tc=10.9 min CN=80 Runoff=3.9 cfs 0.332 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=5.95"
Flow Length=100' Tc=13.4 min CN=78 Runoff=5.4 cfs 0.488 af

SubcatchmentEX10.4A: Runoff Area=1.814 ac 5.48% Impervious Runoff Depth=4.15"
Flow Length=572' Tc=17.3 min CN=63 Runoff=6.3 cfs 0.627 af

SubcatchmentEX10.4B: Runoff Area=3.038 ac 13.30% Impervious Runoff Depth=4.15"
Flow Length=516' Tc=13.4 min CN=63 Runoff=11.6 cfs 1.050 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=5.95"
Flow Length=118' Tc=23.4 min CN=78 Runoff=3.6 cfs 0.415 af

SubcatchmentEX10.6A: Runoff Area=0.641 ac 9.85% Impervious Runoff Depth=1.52"
Flow Length=267' Tc=14.6 min CN=40 Runoff=0.7 cfs 0.081 af

SubcatchmentEX10.6B: Runoff Area=4.484 ac 0.01% Impervious Runoff Depth=2.62"
Flow Length=312' Tc=13.8 min CN=50 Runoff=10.0 cfs 0.980 af

SubcatchmentEX10.7A: Runoff Area=1.719 ac 0.00% Impervious Runoff Depth=1.21"
Flow Length=607' Tc=38.6 min CN=37 Runoff=0.8 cfs 0.174 af

SubcatchmentEX10.7B: Subcat EX10.7B Runoff Area=0.083 ac 0.00% Impervious Runoff Depth=5.83"
Flow Length=136' Tc=11.8 min CN=77 Runoff=0.5 cfs 0.040 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.5 cfs 0.076 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=4.03"
Flow Length=384' Tc=7.6 min CN=62 Runoff=12.5 cfs 0.947 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=6.55"
Flow Length=727' Tc=41.2 min CN=83 Runoff=8.0 cfs 1.207 af

Pond P-10.4: Pond Peak Elev=129.65' Storage=45,677 cf Inflow=11.6 cfs 1.050 af
Outflow=0.0 cfs 0.000 af

Link DP10.1: Wetland 18 Inflow=5.2 cfs 0.543 af
Primary=5.2 cfs 0.543 af

Link DP10.10: Vernal Pool 4 Inflow=0.5 cfs 0.040 af
Primary=0.5 cfs 0.040 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=9.7 cfs 0.952 af
Primary=9.7 cfs 0.952 af

Link DP10.12: Wetland 6 Inflow=1.8 cfs 0.264 af
Primary=1.8 cfs 0.264 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=9.7 cfs 1.320 af
Primary=9.7 cfs 1.320 af

Link DP10.15: Wetland 4 Inflow=2.6 cfs 0.433 af
Primary=2.6 cfs 0.433 af

Link DP10.2: Wetland 19 Inflow=3.9 cfs 0.332 af
Primary=3.9 cfs 0.332 af

Link DP10.3: Wetland 15 Inflow=5.4 cfs 0.488 af
Primary=5.4 cfs 0.488 af

Link DP10.4: Hop Brook Inflow=6.3 cfs 0.627 af
Primary=6.3 cfs 0.627 af

Link DP10.5: Wetland 14 Inflow=3.6 cfs 0.415 af
Primary=3.6 cfs 0.415 af

Link DP10.6: Wetland 11 Inflow=10.6 cfs 1.062 af
Primary=10.6 cfs 1.062 af

Link DP10.7: Wetland 13 Inflow=0.9 cfs 0.214 af
Primary=0.9 cfs 0.214 af

Link DP10.8: Wetland 10 Inflow=0.5 cfs 0.076 af
Primary=0.5 cfs 0.076 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=12.5 cfs 0.947 af
Primary=12.5 cfs 0.947 af

Link DP9.1: Station Road Inflow=8.0 cfs 1.207 af
Primary=8.0 cfs 1.207 af

Total Runoff Area = 36.786 ac Runoff Volume = 9.970 af Average Runoff Depth = 3.25"
88.37% Pervious = 32.509 ac 11.63% Impervious = 4.277 ac

Summary for Subcatchment EX10.1:

Runoff = 5.2 cfs @ 12.26 hrs, Volume= 0.543 af, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.215	80	>75% Grass cover, Good, HSG D
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
0.794	77	Woods, Good, HSG D
1.073	79	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.5 cfs @ 12.10 hrs, Volume= 0.040 af, Depth= 5.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.010	77	Brush, Poor, HSG C
0.005	83	Brush, Poor, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	76	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 3.1 cfs @ 12.16 hrs, Volume= 0.269 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.007	48	Brush, Poor, HSG A
0.019	83	Brush, Poor, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12A:

Runoff = 0.2 cfs @ 12.62 hrs, Volume= 0.046 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.064	48	Brush, Poor, HSG A
0.003	83	Brush, Poor, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.361	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.452	37	Weighted Average
0.428		94.65% Pervious Area
0.024		5.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1920	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
24.9	376	0.0101	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.5	426	Total			

Summary for Subcatchment EX10.12B:

Runoff = 1.6 cfs @ 12.50 hrs, Volume= 0.219 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.035	48	Brush, Poor, HSG A
0.099	83	Brush, Poor, HSG D
0.399	30	Woods, Good, HSG A
0.317	77	Woods, Good, HSG D
0.851	54	Weighted Average
0.851		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.1	181	0.0558	0.59		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
33.0	231	Total			

Summary for Subcatchment EX10.13A:

Runoff = 5.4 cfs @ 12.22 hrs, Volume= 0.521 af, Depth= 4.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.028	48	Brush, Poor, HSG A
0.262	76	Gravel roads, HSG A
0.552	98	Paved parking, HSG A
0.545	30	Woods, Good, HSG A
1.387	66	Weighted Average
0.835		60.21% Pervious Area
0.552		39.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
10.5	325	0.0425	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.9	375	Total			

Summary for Subcatchment EX10.13B:

Runoff = 2.3 cfs @ 12.09 hrs, Volume= 0.162 af, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.015	48	Brush, Poor, HSG A
0.226	98	Paved parking, HSG A
0.132	30	Woods, Good, HSG A
0.373	72	Weighted Average
0.147		39.42% Pervious Area
0.226		60.58% Impervious Area

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

Summary for Subcatchment EX10.14A:

Runoff = 3.8 cfs @ 12.33 hrs, Volume= 0.516 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.386	39	>75% Grass cover, Good, HSG A
0.005	48	Brush, Poor, HSG A
0.542	98	Paved parking, HSG A
3.138	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.528		86.68% Pervious Area
0.542		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment EX10.14B:

Runoff = 6.2 cfs @ 12.45 hrs, Volume= 0.803 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.845	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.074	76	Gravel roads, HSG A
0.935	98	Paved parking, HSG A
1.013	30	Woods, Good, HSG A
2.904	56	Weighted Average
1.970		67.82% Pervious Area
0.935		32.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1220	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.3	386	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.6	436	Total			

Summary for Subcatchment EX10.15:

Runoff = 2.6 cfs @ 12.45 hrs, Volume= 0.433 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.948	39	>75% Grass cover, Good, HSG A
0.154	48	Brush, Poor, HSG A
0.264	98	Paved parking, HSG A
2.913	30	Woods, Good, HSG A
4.280	37	Weighted Average
4.016		93.83% Pervious Area
0.264		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0660	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
15.5	478	0.0105	0.51		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.0	528	Total			

Summary for Subcatchment EX10.2:

Runoff = 3.9 cfs @ 12.15 hrs, Volume= 0.332 af, Depth= 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.135	80	>75% Grass cover, Good, HSG D
0.095	91	Gravel roads, HSG D
0.011	98	Paved parking, HSG D
0.403	77	Woods, Good, HSG D
0.644	80	Weighted Average
0.633		98.33% Pervious Area
0.011		1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0740	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.7	150	0.0187	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.9	200	Total			

Summary for Subcatchment EX10.3:

Runoff = 5.4 cfs @ 12.18 hrs, Volume= 0.488 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.005	83	Brush, Poor, HSG D
0.058	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4A:

Runoff = 6.3 cfs @ 12.24 hrs, Volume= 0.627 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.085	80	>75% Grass cover, Good, HSG D
0.003	83	Brush, Poor, HSG D
0.051	91	Gravel roads, HSG D
0.100	98	Paved parking, HSG A
0.560	30	Woods, Good, HSG A
0.947	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.715		94.52% Pervious Area
0.100		5.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	124	0.1347	0.92		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.9	303	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	572	Total			

Summary for Subcatchment EX10.4B:

Runoff = 11.6 cfs @ 12.19 hrs, Volume= 1.050 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.074	80	>75% Grass cover, Good, HSG D
0.056	91	Gravel roads, HSG D
0.404	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.294	77	Woods, Good, HSG D
3.038	63	Weighted Average
2.634		86.70% Pervious Area
0.404		13.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment EX10.5:

Runoff = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.071	80	>75% Grass cover, Good, HSG D
0.049	83	Brush, Poor, HSG D
0.717	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6A:

Runoff = 0.7 cfs @ 12.25 hrs, Volume= 0.081 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.026	39	>75% Grass cover, Good, HSG A
0.001	48	Brush, Poor, HSG A
0.011	83	Brush, Poor, HSG D
0.063	98	Paved parking, HSG A
0.513	30	Woods, Good, HSG A
0.027	77	Woods, Good, HSG D
0.641	40	Weighted Average
0.578		90.15% Pervious Area
0.063		9.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	217	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.6	267	Total			

Summary for Subcatchment EX10.6B:

Runoff = 10.0 cfs @ 12.21 hrs, Volume= 0.980 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.037	48	Brush, Poor, HSG A
0.042	77	Brush, Poor, HSG C
0.178	83	Brush, Poor, HSG D
0.000	98	Paved parking, HSG A
2.533	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.532	77	Woods, Good, HSG D
4.484	50	Weighted Average
4.483		99.99% Pervious Area
0.000		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	50	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.9	262	0.1290	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.8	312	Total			

Summary for Subcatchment EX10.7A:

Runoff = 0.8 cfs @ 12.69 hrs, Volume= 0.174 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.079	48	Brush, Poor, HSG A
0.029	83	Brush, Poor, HSG D
1.417	30	Woods, Good, HSG A
0.194	77	Woods, Good, HSG D
1.719	37	Weighted Average
1.719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	189	0.1840	1.07		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
11.3	368	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
38.6	607	Total			

Summary for Subcatchment EX10.7B: Subcat EX10.7B

Runoff = 0.5 cfs @ 12.16 hrs, Volume= 0.040 af, Depth= 5.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.010	83	Brush, Poor, HSG D
0.002	30	Woods, Good, HSG A
0.071	77	Woods, Good, HSG D
0.083	77	Weighted Average
0.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.5 cfs @ 12.16 hrs, Volume= 0.076 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 12.5 cfs @ 12.11 hrs, Volume= 0.947 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.259	74	>75% Grass cover, Good, HSG C
0.009	77	Brush, Poor, HSG C
0.013	83	Brush, Poor, HSG D
0.341	30	Woods, Good, HSG A
1.415	70	Woods, Good, HSG C
0.405	77	Woods, Good, HSG D
2.822	62	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 8.0 cfs @ 12.55 hrs, Volume= 1.207 af, Depth= 6.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.128	76	Gravel roads, HSG A
0.146	91	Gravel roads, HSG D
0.547	98	Paved parking, HSG A
0.553	98	Paved parking, HSG D
0.258	30	Woods, Good, HSG A
0.579	77	Woods, Good, HSG D
2.211	83	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Pond P-10.4: Pond

Inflow Area = 3.038 ac, 13.30% Impervious, Inflow Depth = 4.15" for 100-yr event
Inflow = 11.6 cfs @ 12.19 hrs, Volume= 1.050 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 129.65' @ 24.76 hrs Surf.Area= 89,150 sf Storage= 45,677 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 6.07" for 100-yr event
Inflow = 5.2 cfs @ 12.26 hrs, Volume= 0.543 af
Primary = 5.2 cfs @ 12.26 hrs, Volume= 0.543 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 5.71" for 100-yr event
Inflow = 0.5 cfs @ 12.10 hrs, Volume= 0.040 af
Primary = 0.5 cfs @ 12.10 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.892 ac, 28.20% Impervious, Inflow Depth = 3.95" for 100-yr event
Inflow = 9.7 cfs @ 12.17 hrs, Volume= 0.952 af
Primary = 9.7 cfs @ 12.17 hrs, Volume= 0.952 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.303 ac, 1.86% Impervious, Inflow Depth = 2.44" for 100-yr event
Inflow = 1.8 cfs @ 12.50 hrs, Volume= 0.264 af
Primary = 1.8 cfs @ 12.50 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.975 ac, 21.17% Impervious, Inflow Depth = 2.27" for 100-yr event
Inflow = 9.7 cfs @ 12.41 hrs, Volume= 1.320 af
Primary = 9.7 cfs @ 12.41 hrs, Volume= 1.320 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 1.21" for 100-yr event
Inflow = 2.6 cfs @ 12.45 hrs, Volume= 0.433 af
Primary = 2.6 cfs @ 12.45 hrs, Volume= 0.433 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.644 ac, 1.67% Impervious, Inflow Depth = 6.19" for 100-yr event
Inflow = 3.9 cfs @ 12.15 hrs, Volume= 0.332 af
Primary = 3.9 cfs @ 12.15 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 5.4 cfs @ 12.18 hrs, Volume= 0.488 af
Primary = 5.4 cfs @ 12.18 hrs, Volume= 0.488 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 1.55" for 100-yr event
Inflow = 6.3 cfs @ 12.24 hrs, Volume= 0.627 af
Primary = 6.3 cfs @ 12.24 hrs, Volume= 0.627 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af
Primary = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 2.49" for 100-yr event
Inflow = 10.6 cfs @ 12.21 hrs, Volume= 1.062 af
Primary = 10.6 cfs @ 12.21 hrs, Volume= 1.062 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 1.43" for 100-yr event
Inflow = 0.9 cfs @ 12.65 hrs, Volume= 0.214 af
Primary = 0.9 cfs @ 12.65 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.5 cfs @ 12.16 hrs, Volume= 0.076 af
Primary = 0.5 cfs @ 12.16 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 4.03" for 100-yr event
Inflow = 12.5 cfs @ 12.11 hrs, Volume= 0.947 af
Primary = 12.5 cfs @ 12.11 hrs, Volume= 0.947 af, Atten= 0%, Lag= 0.0 min

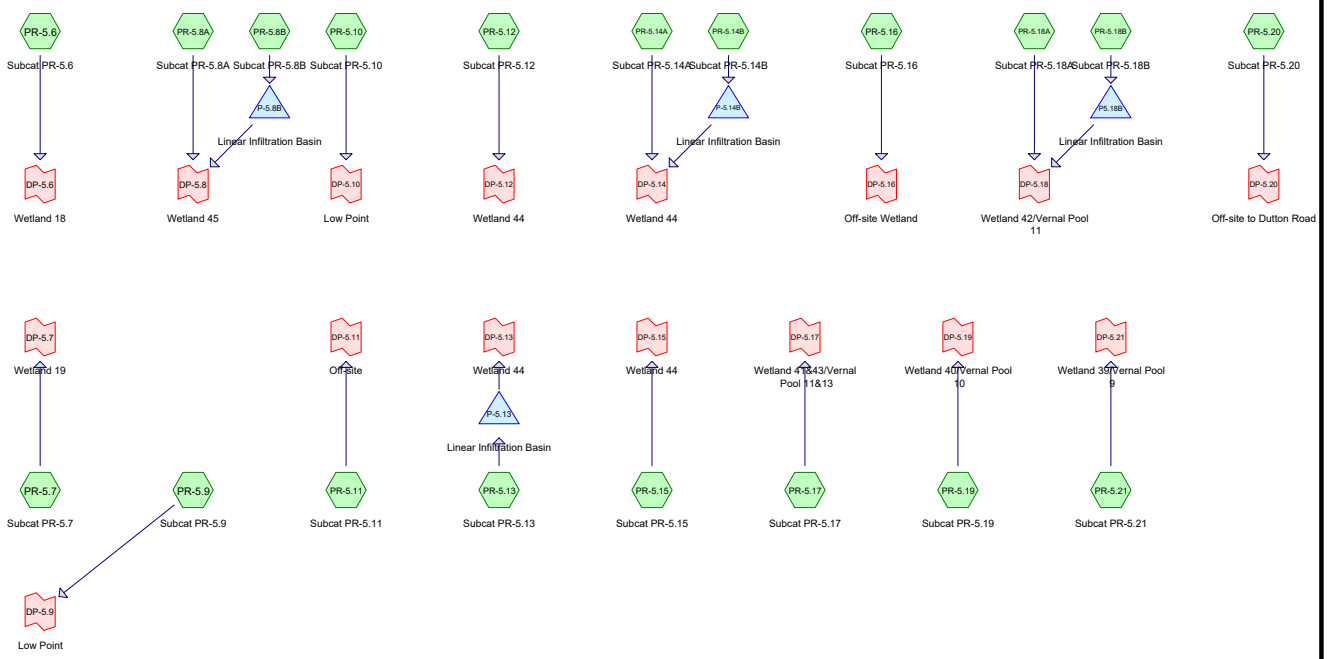
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

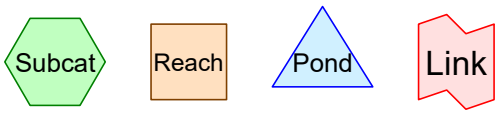
Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 6.55" for 100-yr event
Inflow = 8.0 cfs @ 12.55 hrs, Volume= 1.207 af
Primary = 8.0 cfs @ 12.55 hrs, Volume= 1.207 af, Atten= 0%, Lag= 0.0 min

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

HydroCAD Analysis: Proposed Conditions





Routing Diagram for Sudbury_PR Segment 5_ResponsetoComments_REV_Full

Prepared by VHB, Printed 10/18/2020

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.02"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.0 cfs 0.003 af

Subcatchment PR-5.11: Subcat PR-5.11 Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.00"
Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.00"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=0.0 cfs 0.001 af

Subcatchment PR-5.13: Subcat PR-5.13 Runoff Area=2.618 ac 24.08% Impervious Runoff Depth=0.19"
Flow Length=2,438' Tc=47.3 min CN=37/98 Runoff=0.3 cfs 0.042 af

Subcatchment PR-5.14A: Subcat PR-5.14A Runoff Area=0.670 ac 15.75% Impervious Runoff Depth=0.12"
Flow Length=465' Tc=9.2 min CN=42/98 Runoff=0.1 cfs 0.007 af

Subcatchment PR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.10"
Flow Length=240' Tc=13.7 min CN=32/98 Runoff=0.0 cfs 0.004 af

Subcatchment PR-5.15: Subcat PR-5.15 Runoff Area=0.269 ac 5.22% Impervious Runoff Depth=0.04"
Flow Length=237' Tc=16.8 min CN=48/98 Runoff=0.0 cfs 0.001 af

Subcatchment PR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.01"
Flow Length=590' Tc=75.8 min CN=43/98 Runoff=0.0 cfs 0.008 af

Subcatchment PR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=0.18"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.0 cfs 0.001 af

Subcatchment PR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.20: Subcat PR-5.20 Runoff Area=1.156 ac 5.71% Impervious Runoff Depth=0.05"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.0 cfs 0.004 af

Subcatchment PR-5.21: Subcat PR-5.21 Runoff Area=0.334 ac 22.68% Impervious Runoff Depth=0.18"
Flow Length=122' Tc=6.0 min CN=31/98 Runoff=0.1 cfs 0.005 af

Subcatchment PR-5.6: Subcat PR-5.6 Runoff Area=16.838 ac 1.67% Impervious Runoff Depth=0.01"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=0.2 cfs 0.018 af

Subcatchment PR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=0.817 ac 19.38% Impervious Runoff Depth=0.15"
Flow Length=200' Tc=12.9 min CN=31/98 Runoff=0.1 cfs 0.010 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=0.24"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.0 cfs 0.003 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=0.658 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=256' Tc=13.7 min CN=30/0 Runoff=0.0 cfs 0.000 af

Pond P-5.13: Linear Infiltration Basin Peak Elev=173.16' Storage=275 cf Inflow=0.3 cfs 0.042 af
Discarded=0.1 cfs 0.030 af Primary=0.2 cfs 0.011 af Outflow=0.3 cfs 0.042 af

Pond P-5.14B: Linear Infiltration Basin Peak Elev=171.06' Storage=51 cf Inflow=0.0 cfs 0.004 af
Discarded=0.0 cfs 0.004 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.004 af

Pond P-5.8B: Linear Infiltration Basin Peak Elev=200.37' Storage=66 cf Inflow=0.0 cfs 0.003 af
Discarded=0.0 cfs 0.003 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.003 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.78' Storage=27 cf Inflow=0.0 cfs 0.001 af
Discarded=0.0 cfs 0.001 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.001 af

Link DP-5.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.12: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP-5.13: Wetland 44 Inflow=0.2 cfs 0.011 af
Primary=0.2 cfs 0.011 af

Link DP-5.14: Wetland 44 Inflow=0.1 cfs 0.007 af
Primary=0.1 cfs 0.007 af

Link DP-5.15: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP-5.16: Off-site Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.1 cfs 0.005 af
Primary=0.1 cfs 0.005 af

Link DP-5.6: Wetland 18 Inflow=0.2 cfs 0.018 af
Primary=0.2 cfs 0.018 af

Link DP-5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.8: Wetland 45 Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP-5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 81.681 ac Runoff Volume = 0.107 af Average Runoff Depth = 0.02"
98.02% Pervious = 80.060 ac 1.98% Impervious = 1.621 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.0 cfs @ 12.68 hrs, Volume= 0.003 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.6					**Direct Entry, Same as EX 5.11**

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 0.0 cfs @ 13.11 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 0.3 cfs @ 12.62 hrs, Volume= 0.042 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.018	98	Water Surface, HSG D
1.513	30	Woods, Good, HSG A
0.167	77	Woods, Good, HSG D
2.618	52	Weighted Average
1.988	37	75.92% Pervious Area
0.630	98	24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.2	113	0.0240	1.55		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
2.9	205	0.0550	1.17		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	2,438	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 0.1 cfs @ 12.13 hrs, Volume= 0.007 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.167	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.010	98	Water Surface, HSG D
0.288	30	Woods, Good, HSG A
0.091	77	Woods, Good, HSG D
0.670	51	Weighted Average
0.564	42	84.25% Pervious Area
0.105	98	15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0180	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	120	0.0720	1.88		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	231	0.0393	2.97		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
9.2	465	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.0 cfs @ 12.18 hrs, Volume= 0.004 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.084	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.274	30	Woods, Good, HSG A
0.413	41	Weighted Average
0.359	32	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.0	190	0.0410	3.04		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	240	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.0 cfs @ 12.22 hrs, Volume= 0.001 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.006	91	Gravel roads, HSG D
0.014	98	Water Surface, HSG D
0.157	30	Woods, Good, HSG A
0.092	77	Woods, Good, HSG D
0.269	51	Weighted Average
0.255	48	94.78% Pervious Area
0.014	98	5.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0560	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	187	0.0513	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	237	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
7.311	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.640	37	Weighted Average
8.640	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 0.0 cfs @ 12.97 hrs, Volume= 0.008 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
1.982	39	>75% Grass cover, Good, HSG A
0.068	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
5.786	30	Woods, Good, HSG A
2.511	77	Woods, Good, HSG D
10.467	44	Weighted Average
10.347	43	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.0 cfs @ 12.08 hrs, Volume= 0.001 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.066	98	Paved parking, HSG A
1.076	30	Woods, Good, HSG A
1.156	34	Weighted Average
1.090	30	94.29% Pervious Area
0.066	98	5.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.1 cfs @ 12.08 hrs, Volume= 0.005 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.076	98	Paved parking, HSG A
0.234	30	Woods, Good, HSG A
0.334	46	Weighted Average
0.258	31	77.32% Pervious Area
0.076	98	22.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0740	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	72	0.0944	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.1	122	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 0.2 cfs @ 12.29 hrs, Volume= 0.018 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.422	30	Woods, Good, HSG A
16.838	31	Weighted Average
16.557	30	98.33% Pervious Area
0.281	98	1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
0.595	30	Woods, Good, HSG A
0.817	44	Weighted Average
0.658	31	80.62% Pervious Area
0.158	98	19.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.4	150	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	200	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.658	30	Woods, Good, HSG A
0.658	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	25	0.0200	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	231	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	256	Total			

Summary for Pond P-5.13: Linear Infiltration Basin

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 0.19" for 1-inch event
Inflow = 0.3 cfs @ 12.62 hrs, Volume= 0.042 af
Outflow = 0.3 cfs @ 12.70 hrs, Volume= 0.042 af, Atten= 2%, Lag= 4.9 min
Discarded = 0.1 cfs @ 12.70 hrs, Volume= 0.030 af
Primary = 0.2 cfs @ 12.70 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 173.16' @ 12.70 hrs Surf.Area= 1,016 sf Storage= 275 cf

Plug-Flow detention time= 36.2 min calculated for 0.042 af (100% of inflow)
Center-of-Mass det. time= 36.2 min (862.4 - 826.2)

Volume	Invert	Avail.Storage	Storage Description
#1	172.60'	952 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.60	0	0	0
173.10	877	219	219
173.60	2,052	732	952

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	172.60'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.70 hrs HW=173.16' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.2 cfs @ 12.70 hrs HW=173.16' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.65 fps)

Summary for Pond P-5.14B: Linear Infiltration Basin

Inflow Area =	0.413 ac,	13.05% Impervious,	Inflow Depth =	0.10"	for 1-inch event
Inflow =	0.0 cfs @	12.18 hrs,	Volume=	0.004 af	
Outflow =	0.0 cfs @	12.65 hrs,	Volume=	0.004 af,	Atten= 75%, Lag= 28.1 min
Discarded =	0.0 cfs @	12.65 hrs,	Volume=	0.004 af	
Primary =	0.0 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.06' @ 12.65 hrs Surf.Area= 396 sf Storage= 51 cf

Plug-Flow detention time= 51.3 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 51.3 min (846.3 - 795.0)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.65 hrs HW=171.06' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=170.80' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 0.24" for 1-inch event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 13.34 hrs, Volume= 0.003 af, Atten= 91%, Lag= 70.8 min
Discarded = 0.0 cfs @ 13.34 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 200.37' @ 13.34 hrs Surf.Area= 490 sf Storage= 66 cf

Plug-Flow detention time= 256.6 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 256.6 min (1,049.9 - 793.2)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.34 hrs HW=200.37' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=200.10' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 0.18" for 1-inch event
Inflow = 0.0 cfs @ 12.08 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 15.04 hrs, Volume= 0.001 af, Atten= 96%, Lag= 177.4 min
Discarded = 0.0 cfs @ 15.04 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.78' @ 15.04 hrs Surf.Area= 141 sf Storage= 27 cf

Plug-Flow detention time= 589.1 min calculated for 0.001 af (100% of inflow)
Center-of-Mass det. time= 589.2 min (1,377.1 - 787.9)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.04 hrs HW=172.78' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=172.40' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.02" for 1-inch event
Inflow = 0.0 cfs @ 12.68 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 12.68 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.11: Off-site

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 13.11 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 13.11 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.13: Wetland 44

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 0.05" for 1-inch event
Inflow = 0.2 cfs @ 12.70 hrs, Volume= 0.011 af
Primary = 0.2 cfs @ 12.70 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.14: Wetland 44

Inflow Area = 1.083 ac, 14.72% Impervious, Inflow Depth = 0.08" for 1-inch event
Inflow = 0.1 cfs @ 12.13 hrs, Volume= 0.007 af
Primary = 0.1 cfs @ 12.13 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.15: Wetland 44

Inflow Area = 0.269 ac, 5.22% Impervious, Inflow Depth = 0.04" for 1-inch event
Inflow = 0.0 cfs @ 12.22 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.22 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.0 cfs @ 12.97 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.97 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.156 ac, 5.71% Impervious, Inflow Depth = 0.05" for 1-inch event
Inflow = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 22.68% Impervious, Inflow Depth = 0.18" for 1-inch event
Inflow = 0.1 cfs @ 12.08 hrs, Volume= 0.005 af
Primary = 0.1 cfs @ 12.08 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.6: Wetland 18

Inflow Area = 16.838 ac, 1.67% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.2 cfs @ 12.29 hrs, Volume= 0.018 af
Primary = 0.2 cfs @ 12.29 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.8: Wetland 45

Inflow Area = 0.970 ac, 21.04% Impervious, Inflow Depth = 0.13" for 1-inch event
Inflow = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.9: Low Point

Inflow Area = 0.658 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.08"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.1 cfs 0.010 af

Subcatchment PR-5.11: Subcat PR-5.11 Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.00"
Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.06"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=0.1 cfs 0.041 af

Subcatchment PR-5.13: Subcat PR-5.13 Runoff Area=2.618 ac 24.08% Impervious Runoff Depth=0.74"
Flow Length=2,438' Tc=47.3 min CN=37/98 Runoff=0.9 cfs 0.161 af

Subcatchment PR-5.14A: Subcat PR-5.14A Runoff Area=0.670 ac 15.75% Impervious Runoff Depth=0.50"
Flow Length=465' Tc=9.2 min CN=42/98 Runoff=0.3 cfs 0.028 af

Subcatchment PR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.40"
Flow Length=240' Tc=13.7 min CN=32/98 Runoff=0.1 cfs 0.014 af

Subcatchment PR-5.15: Subcat PR-5.15 Runoff Area=0.269 ac 5.22% Impervious Runoff Depth=0.26"
Flow Length=237' Tc=16.8 min CN=48/98 Runoff=0.0 cfs 0.006 af

Subcatchment PR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=1.2 cfs 0.304 af

Subcatchment PR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.06"
Flow Length=590' Tc=75.8 min CN=43/98 Runoff=0.1 cfs 0.057 af

Subcatchment PR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=0.70"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.0 cfs 0.004 af

Subcatchment PR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.20: Subcat PR-5.20 Runoff Area=1.156 ac 5.71% Impervious Runoff Depth=0.18"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.1 cfs 0.017 af

Subcatchment PR-5.21: Subcat PR-5.21 Runoff Area=0.334 ac 22.68% Impervious Runoff Depth=0.70"
Flow Length=122' Tc=6.0 min CN=31/98 Runoff=0.2 cfs 0.019 af

Subcatchment PR-5.6: Subcat PR-5.6 Runoff Area=16.838 ac 1.67% Impervious Runoff Depth=0.05"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=0.6 cfs 0.072 af

Subcatchment PR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=0.817 ac 19.38% Impervious Runoff Depth=0.59"
Flow Length=200' Tc=12.9 min CN=31/98 Runoff=0.4 cfs 0.040 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=0.92"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.1 cfs 0.012 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=0.658 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=256' Tc=13.7 min CN=30/0 Runoff=0.0 cfs 0.000 af

Pond P-5.13: Linear Infiltration Basin Peak Elev=173.26' Storage=388 cf Inflow=0.9 cfs 0.161 af
Discarded=0.1 cfs 0.068 af Primary=0.9 cfs 0.093 af Outflow=0.9 cfs 0.161 af

Pond P-5.14B: Linear Infiltration Basin Peak Elev=171.36' Storage=246 cf Inflow=0.1 cfs 0.014 af
Discarded=0.0 cfs 0.014 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.014 af

Pond P-5.8B: Linear Infiltration Basin Peak Elev=200.62' Storage=245 cf Inflow=0.1 cfs 0.012 af
Discarded=0.0 cfs 0.010 af Primary=0.0 cfs 0.002 af Outflow=0.0 cfs 0.012 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.92' Storage=49 cf Inflow=0.0 cfs 0.004 af
Discarded=0.0 cfs 0.002 af Primary=0.0 cfs 0.002 af Outflow=0.0 cfs 0.004 af

Link DP-5.10: Low Point Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.12: Wetland 44 Inflow=0.1 cfs 0.041 af
Primary=0.1 cfs 0.041 af

Link DP-5.13: Wetland 44 Inflow=0.9 cfs 0.093 af
Primary=0.9 cfs 0.093 af

Link DP-5.14: Wetland 44 Inflow=0.3 cfs 0.028 af
Primary=0.3 cfs 0.028 af

Link DP-5.15: Wetland 44 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP-5.16: Off-site Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=1.2 cfs 0.304 af
Primary=1.2 cfs 0.304 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=0.1 cfs 0.059 af
Primary=0.1 cfs 0.059 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.1 cfs 0.017 af
Primary=0.1 cfs 0.017 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.2 cfs 0.019 af
Primary=0.2 cfs 0.019 af

Link DP-5.6: Wetland 18 Inflow=0.6 cfs 0.072 af
Primary=0.6 cfs 0.072 af

Link DP-5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.8: Wetland 45 Inflow=0.4 cfs 0.042 af
Primary=0.4 cfs 0.042 af

Link DP-5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 81.681 ac Runoff Volume = 0.784 af Average Runoff Depth = 0.12"
98.02% Pervious = 80.060 ac 1.98% Impervious = 1.621 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 0.010 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.6					**Direct Entry, Same as EX 5.11**

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 0.1 cfs @ 16.32 hrs, Volume= 0.041 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 0.9 cfs @ 12.61 hrs, Volume= 0.161 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.018	98	Water Surface, HSG D
1.513	30	Woods, Good, HSG A
0.167	77	Woods, Good, HSG D
2.618	52	Weighted Average
1.988	37	75.92% Pervious Area
0.630	98	24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.2	113	0.0240	1.55		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
2.9	205	0.0550	1.17		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	2,438	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 0.3 cfs @ 12.12 hrs, Volume= 0.028 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.167	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.010	98	Water Surface, HSG D
0.288	30	Woods, Good, HSG A
0.091	77	Woods, Good, HSG D
0.670	51	Weighted Average
0.564	42	84.25% Pervious Area
0.105	98	15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0180	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	120	0.0720	1.88		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	231	0.0393	2.97		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
9.2	465	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.1 cfs @ 12.18 hrs, Volume= 0.014 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.084	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.274	30	Woods, Good, HSG A
0.413	41	Weighted Average
0.359	32	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.0	190	0.0410	3.04		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	240	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.0 cfs @ 12.22 hrs, Volume= 0.006 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.006	91	Gravel roads, HSG D
0.014	98	Water Surface, HSG D
0.157	30	Woods, Good, HSG A
0.092	77	Woods, Good, HSG D
0.269	51	Weighted Average
0.255	48	94.78% Pervious Area
0.014	98	5.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0560	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	187	0.0513	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	237	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
7.311	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.640	37	Weighted Average
8.640	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 1.2 cfs @ 12.39 hrs, Volume= 0.304 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 0.1 cfs @ 12.97 hrs, Volume= 0.057 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
1.982	39	>75% Grass cover, Good, HSG A
0.068	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
5.786	30	Woods, Good, HSG A
2.511	77	Woods, Good, HSG D
10.467	44	Weighted Average
10.347	43	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.0 cfs @ 12.08 hrs, Volume= 0.004 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.1 cfs @ 12.26 hrs, Volume= 0.017 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.066	98	Paved parking, HSG A
1.076	30	Woods, Good, HSG A
1.156	34	Weighted Average
1.090	30	94.29% Pervious Area
0.066	98	5.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.2 cfs @ 12.08 hrs, Volume= 0.019 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.076	98	Paved parking, HSG A
0.234	30	Woods, Good, HSG A
0.334	46	Weighted Average
0.258	31	77.32% Pervious Area
0.076	98	22.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0740	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	72	0.0944	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.1	122	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 0.6 cfs @ 12.29 hrs, Volume= 0.072 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.422	30	Woods, Good, HSG A
16.838	31	Weighted Average
16.557	30	98.33% Pervious Area
0.281	98	1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.4 cfs @ 12.17 hrs, Volume= 0.040 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
0.595	30	Woods, Good, HSG A
0.817	44	Weighted Average
0.658	31	80.62% Pervious Area
0.158	98	19.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.4	150	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	200	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.012 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.658	30	Woods, Good, HSG A
0.658	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	25	0.0200	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	231	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	256	Total			

Summary for Pond P-5.13: Linear Infiltration Basin

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 0.74" for 2-year event
Inflow = 0.9 cfs @ 12.61 hrs, Volume= 0.161 af
Outflow = 0.9 cfs @ 12.66 hrs, Volume= 0.161 af, Atten= 1%, Lag= 3.1 min
Discarded = 0.1 cfs @ 12.66 hrs, Volume= 0.068 af
Primary = 0.9 cfs @ 12.66 hrs, Volume= 0.093 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 173.26' @ 12.66 hrs Surf.Area= 1,251 sf Storage= 388 cf

Plug-Flow detention time= 27.2 min calculated for 0.161 af (100% of inflow)
Center-of-Mass det. time= 27.2 min (821.3 - 794.1)

Volume	Invert	Avail.Storage	Storage Description
#1	172.60'	952 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.60	0	0	0
173.10	877	219	219
173.60	2,052	732	952

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	172.60'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.66 hrs HW=173.26' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.9 cfs @ 12.66 hrs HW=173.26' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.9 cfs @ 1.07 fps)

Summary for Pond P-5.14B: Linear Infiltration Basin

Inflow Area = 0.413 ac, 13.05% Impervious, Inflow Depth = 0.40" for 2-year event
Inflow = 0.1 cfs @ 12.18 hrs, Volume= 0.014 af
Outflow = 0.0 cfs @ 12.80 hrs, Volume= 0.014 af, Atten= 84%, Lag= 37.4 min
Discarded = 0.0 cfs @ 12.80 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.36' @ 12.80 hrs Surf.Area= 918 sf Storage= 246 cf

Plug-Flow detention time= 122.5 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 122.5 min (885.4 - 762.9)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.80 hrs HW=171.36' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=170.80' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 0.92" for 2-year event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 0.012 af
Outflow = 0.0 cfs @ 12.48 hrs, Volume= 0.012 af, Atten= 62%, Lag= 19.5 min
Discarded = 0.0 cfs @ 12.48 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 12.48 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 200.62' @ 12.48 hrs Surf.Area= 934 sf Storage= 245 cf

Plug-Flow detention time= 403.5 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 403.5 min (1,164.7 - 761.1)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.48 hrs HW=200.62' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.48 hrs HW=200.62' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.39 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 0.70" for 2-year event
Inflow = 0.0 cfs @ 12.08 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.10 hrs, Volume= 0.004 af, Atten= 1%, Lag= 0.7 min
Discarded = 0.0 cfs @ 12.10 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 12.10 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.92' @ 12.10 hrs Surf.Area= 193 sf Storage= 49 cf

Plug-Flow detention time= 411.0 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 411.3 min (1,167.0 - 755.8)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.10 hrs HW=172.92' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=172.92' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.30 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.08" for 2-year event
Inflow = 0.1 cfs @ 12.68 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.68 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.11: Off-site

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.06" for 2-year event
Inflow = 0.1 cfs @ 16.32 hrs, Volume= 0.041 af
Primary = 0.1 cfs @ 16.32 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.13: Wetland 44

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 0.43" for 2-year event
Inflow = 0.9 cfs @ 12.66 hrs, Volume= 0.093 af
Primary = 0.9 cfs @ 12.66 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.14: Wetland 44

Inflow Area = 1.083 ac, 14.72% Impervious, Inflow Depth = 0.31" for 2-year event
Inflow = 0.3 cfs @ 12.12 hrs, Volume= 0.028 af
Primary = 0.3 cfs @ 12.12 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.15: Wetland 44

Inflow Area = 0.269 ac, 5.22% Impervious, Inflow Depth = 0.26" for 2-year event
Inflow = 0.0 cfs @ 12.22 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 12.22 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 0.20" for 2-year event
Inflow = 1.2 cfs @ 12.39 hrs, Volume= 0.304 af
Primary = 1.2 cfs @ 12.39 hrs, Volume= 0.304 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.07" for 2-year event
Inflow = 0.1 cfs @ 12.97 hrs, Volume= 0.059 af
Primary = 0.1 cfs @ 12.97 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.156 ac, 5.71% Impervious, Inflow Depth = 0.18" for 2-year event
Inflow = 0.1 cfs @ 12.26 hrs, Volume= 0.017 af
Primary = 0.1 cfs @ 12.26 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 22.68% Impervious, Inflow Depth = 0.70" for 2-year event
Inflow = 0.2 cfs @ 12.08 hrs, Volume= 0.019 af
Primary = 0.2 cfs @ 12.08 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.6: Wetland 18

Inflow Area = 16.838 ac, 1.67% Impervious, Inflow Depth = 0.05" for 2-year event
Inflow = 0.6 cfs @ 12.29 hrs, Volume= 0.072 af
Primary = 0.6 cfs @ 12.29 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.8: Wetland 45

Inflow Area = 0.970 ac, 21.04% Impervious, Inflow Depth = 0.53" for 2-year event
Inflow = 0.4 cfs @ 12.17 hrs, Volume= 0.042 af
Primary = 0.4 cfs @ 12.17 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.9: Low Point

Inflow Area = 0.658 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.13"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.1 cfs 0.018 af

Subcatchment PR-5.11: Subcat PR-5.11 Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.01"
Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.48"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=0.8 cfs 0.317 af

Subcatchment PR-5.13: Subcat PR-5.13 Runoff Area=2.618 ac 24.08% Impervious Runoff Depth=1.29"
Flow Length=2,438' Tc=47.3 min CN=37/98 Runoff=1.4 cfs 0.281 af

Subcatchment PR-5.14A: Subcat PR-5.14A Runoff Area=0.670 ac 15.75% Impervious Runoff Depth=1.05"
Flow Length=465' Tc=9.2 min CN=42/98 Runoff=0.5 cfs 0.059 af

Subcatchment PR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.66"
Flow Length=240' Tc=13.7 min CN=32/98 Runoff=0.2 cfs 0.023 af

Subcatchment PR-5.15: Subcat PR-5.15 Runoff Area=0.269 ac 5.22% Impervious Runoff Depth=0.85"
Flow Length=237' Tc=16.8 min CN=48/98 Runoff=0.1 cfs 0.019 af

Subcatchment PR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=0.2 cfs 0.110 af

Subcatchment PR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=0.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=13.1 cfs 1.304 af

Subcatchment PR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.43"
Flow Length=590' Tc=75.8 min CN=43/98 Runoff=0.9 cfs 0.378 af

Subcatchment PR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=1.13"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.1 cfs 0.006 af

Subcatchment PR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.001 af

Subcatchment PR-5.20: Subcat PR-5.20 Runoff Area=1.156 ac 5.71% Impervious Runoff Depth=0.28"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.2 cfs 0.027 af

Subcatchment PR-5.21: Subcat PR-5.21 Runoff Area=0.334 ac 22.68% Impervious Runoff Depth=1.12"
Flow Length=122' Tc=6.0 min CN=31/98 Runoff=0.4 cfs 0.031 af

Subcatchment PR-5.6: Subcat PR-5.6 Runoff Area=16.838 ac 1.67% Impervious Runoff Depth=0.09"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=0.9 cfs 0.125 af

Subcatchment PR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.006 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=0.817 ac 19.38% Impervious Runoff Depth=0.96"
Flow Length=200' Tc=12.9 min CN=31/98 Runoff=0.6 cfs 0.065 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=1.48"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.2 cfs 0.019 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=0.658 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=256' Tc=13.7 min CN=30/0 Runoff=0.0 cfs 0.000 af

Pond P-5.13: Linear Infiltration Basin Peak Elev=173.32' Storage=465 cf Inflow=1.4 cfs 0.281 af
Discarded=0.1 cfs 0.091 af Primary=1.4 cfs 0.190 af Outflow=1.4 cfs 0.281 af

Pond P-5.14B: Linear Infiltration Basin Peak Elev=171.52' Storage=412 cf Inflow=0.2 cfs 0.023 af
Discarded=0.0 cfs 0.023 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.023 af

Pond P-5.8B: Linear Infiltration Basin Peak Elev=200.65' Storage=274 cf Inflow=0.2 cfs 0.019 af
Discarded=0.0 cfs 0.011 af Primary=0.2 cfs 0.008 af Outflow=0.2 cfs 0.019 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.92' Storage=50 cf Inflow=0.1 cfs 0.006 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.004 af Outflow=0.1 cfs 0.006 af

Link DP-5.10: Low Point Inflow=0.1 cfs 0.018 af
Primary=0.1 cfs 0.018 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.12: Wetland 44 Inflow=0.8 cfs 0.317 af
Primary=0.8 cfs 0.317 af

Link DP-5.13: Wetland 44 Inflow=1.4 cfs 0.190 af
Primary=1.4 cfs 0.190 af

Link DP-5.14: Wetland 44 Inflow=0.5 cfs 0.059 af
Primary=0.5 cfs 0.059 af

Link DP-5.15: Wetland 44 Inflow=0.1 cfs 0.019 af
Primary=0.1 cfs 0.019 af

Link DP-5.16: Off-site Wetland Inflow=0.2 cfs 0.110 af
Primary=0.2 cfs 0.110 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=13.1 cfs 1.304 af
Primary=13.1 cfs 1.304 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=0.9 cfs 0.382 af
Primary=0.9 cfs 0.382 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.2 cfs 0.027 af
Primary=0.2 cfs 0.027 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.4 cfs 0.031 af
Primary=0.4 cfs 0.031 af

Link DP-5.6: Wetland 18 Inflow=0.9 cfs 0.125 af
Primary=0.9 cfs 0.125 af

Link DP-5.7: Wetland 19 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP-5.8: Wetland 45 Inflow=0.8 cfs 0.073 af
Primary=0.8 cfs 0.073 af

Link DP-5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 81.681 ac Runoff Volume = 2.789 af Average Runoff Depth = 0.41"
98.02% Pervious = 80.060 ac 1.98% Impervious = 1.621 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 0.018 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 23.81 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.6					**Direct Entry, Same as EX 5.11**

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 0.8 cfs @ 13.50 hrs, Volume= 0.317 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 1.4 cfs @ 12.61 hrs, Volume= 0.281 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.018	98	Water Surface, HSG D
1.513	30	Woods, Good, HSG A
0.167	77	Woods, Good, HSG D
2.618	52	Weighted Average
1.988	37	75.92% Pervious Area
0.630	98	24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.2	113	0.0240	1.55		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
2.9	205	0.0550	1.17		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	2,438	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 0.5 cfs @ 12.13 hrs, Volume= 0.059 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.167	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.010	98	Water Surface, HSG D
0.288	30	Woods, Good, HSG A
0.091	77	Woods, Good, HSG D
0.670	51	Weighted Average
0.564	42	84.25% Pervious Area
0.105	98	15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0180	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	120	0.0720	1.88		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	231	0.0393	2.97		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
9.2	465	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.2 cfs @ 12.18 hrs, Volume= 0.023 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.084	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.274	30	Woods, Good, HSG A
0.413	41	Weighted Average
0.359	32	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.0	190	0.0410	3.04		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	240	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.1 cfs @ 12.30 hrs, Volume= 0.019 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.006	91	Gravel roads, HSG D
0.014	98	Water Surface, HSG D
0.157	30	Woods, Good, HSG A
0.092	77	Woods, Good, HSG D
0.269	51	Weighted Average
0.255	48	94.78% Pervious Area
0.014	98	5.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0560	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	187	0.0513	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	237	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 0.2 cfs @ 14.04 hrs, Volume= 0.110 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
7.311	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.640	37	Weighted Average
8.640	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 13.1 cfs @ 12.12 hrs, Volume= 1.304 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 0.9 cfs @ 13.39 hrs, Volume= 0.378 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
1.982	39	>75% Grass cover, Good, HSG A
0.068	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
5.786	30	Woods, Good, HSG A
2.511	77	Woods, Good, HSG D
10.467	44	Weighted Average
10.347	43	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.1 cfs @ 12.08 hrs, Volume= 0.006 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 22.05 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.2 cfs @ 12.26 hrs, Volume= 0.027 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.066	98	Paved parking, HSG A
1.076	30	Woods, Good, HSG A
1.156	34	Weighted Average
1.090	30	94.29% Pervious Area
0.066	98	5.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.4 cfs @ 12.08 hrs, Volume= 0.031 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.076	98	Paved parking, HSG A
0.234	30	Woods, Good, HSG A
0.334	46	Weighted Average
0.258	31	77.32% Pervious Area
0.076	98	22.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0740	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	72	0.0944	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.1	122	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 0.9 cfs @ 12.29 hrs, Volume= 0.125 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.422	30	Woods, Good, HSG A
16.838	31	Weighted Average
16.557	30	98.33% Pervious Area
0.281	98	1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.6 cfs @ 12.17 hrs, Volume= 0.065 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
0.595	30	Woods, Good, HSG A
0.817	44	Weighted Average
0.658	31	80.62% Pervious Area
0.158	98	19.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.4	150	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	200	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.2 cfs @ 12.15 hrs, Volume= 0.019 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.658	30	Woods, Good, HSG A
0.658	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	25	0.0200	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	231	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	256	Total			

Summary for Pond P-5.13: Linear Infiltration Basin

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 1.29" for 10-year event
Inflow = 1.4 cfs @ 12.61 hrs, Volume= 0.281 af
Outflow = 1.4 cfs @ 12.66 hrs, Volume= 0.281 af, Atten= 1%, Lag= 2.9 min
Discarded = 0.1 cfs @ 12.66 hrs, Volume= 0.091 af
Primary = 1.4 cfs @ 12.66 hrs, Volume= 0.190 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 173.32' @ 12.66 hrs Surf.Area= 1,387 sf Storage= 465 cf

Plug-Flow detention time= 23.6 min calculated for 0.281 af (100% of inflow)
Center-of-Mass det. time= 23.6 min (835.6 - 812.0)

Volume	Invert	Avail.Storage	Storage Description
#1	172.60'	952 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.60	0	0	0
173.10	877	219	219
173.60	2,052	732	952

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	172.60'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.66 hrs HW=173.32' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=1.4 cfs @ 12.66 hrs HW=173.32' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 1.4 cfs @ 1.25 fps)

Summary for Pond P-5.14B: Linear Infiltration Basin

Inflow Area =	0.413 ac,	13.05% Impervious,	Inflow Depth =	0.66"	for 10-year event
Inflow =	0.2 cfs @	12.18 hrs,	Volume=	0.023 af	
Outflow =	0.0 cfs @	12.87 hrs,	Volume=	0.023 af,	Atten= 86%, Lag= 41.6 min
Discarded =	0.0 cfs @	12.87 hrs,	Volume=	0.023 af	
Primary =	0.0 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.52' @ 12.87 hrs Surf.Area= 1,275 sf Storage= 412 cf

Plug-Flow detention time= 155.5 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 155.5 min (928.6 - 773.2)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.87 hrs HW=171.52' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=170.80' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 1.48" for 10-year event
Inflow = 0.2 cfs @ 12.15 hrs, Volume= 0.019 af
Outflow = 0.2 cfs @ 12.23 hrs, Volume= 0.019 af, Atten= 14%, Lag= 4.3 min
Discarded = 0.0 cfs @ 12.23 hrs, Volume= 0.011 af
Primary = 0.2 cfs @ 12.23 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 200.65' @ 12.23 hrs Surf.Area= 982 sf Storage= 274 cf

Plug-Flow detention time= 307.9 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 308.0 min (1,067.7 - 759.7)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.23 hrs HW=200.65' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.23 hrs HW=200.65' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.61 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 1.13" for 10-year event
Inflow = 0.1 cfs @ 12.08 hrs, Volume= 0.006 af
Outflow = 0.1 cfs @ 12.09 hrs, Volume= 0.006 af, Atten= 1%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.09 hrs, Volume= 0.002 af
Primary = 0.1 cfs @ 12.09 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.92' @ 12.09 hrs Surf.Area= 195 sf Storage= 50 cf

Plug-Flow detention time= 284.5 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 284.7 min (1,038.4 - 753.7)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.09 hrs HW=172.92' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.09 hrs HW=172.92' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.35 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.13" for 10-year event
Inflow = 0.1 cfs @ 12.68 hrs, Volume= 0.018 af
Primary = 0.1 cfs @ 12.68 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.11: Off-site

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.81 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.81 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.48" for 10-year event
Inflow = 0.8 cfs @ 13.50 hrs, Volume= 0.317 af
Primary = 0.8 cfs @ 13.50 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.13: Wetland 44

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 0.87" for 10-year event
Inflow = 1.4 cfs @ 12.66 hrs, Volume= 0.190 af
Primary = 1.4 cfs @ 12.66 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.14: Wetland 44

Inflow Area = 1.083 ac, 14.72% Impervious, Inflow Depth = 0.65" for 10-year event
Inflow = 0.5 cfs @ 12.13 hrs, Volume= 0.059 af
Primary = 0.5 cfs @ 12.13 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.15: Wetland 44

Inflow Area = 0.269 ac, 5.22% Impervious, Inflow Depth = 0.85" for 10-year event
Inflow = 0.1 cfs @ 12.30 hrs, Volume= 0.019 af
Primary = 0.1 cfs @ 12.30 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 0.15" for 10-year event
Inflow = 0.2 cfs @ 14.04 hrs, Volume= 0.110 af
Primary = 0.2 cfs @ 14.04 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 0.85" for 10-year event
Inflow = 13.1 cfs @ 12.12 hrs, Volume= 1.304 af
Primary = 13.1 cfs @ 12.12 hrs, Volume= 1.304 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.43" for 10-year event
Inflow = 0.9 cfs @ 13.39 hrs, Volume= 0.382 af
Primary = 0.9 cfs @ 13.39 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.02" for 10-year event
Inflow = 0.0 cfs @ 22.05 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 22.05 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.156 ac, 5.71% Impervious, Inflow Depth = 0.28" for 10-year event
Inflow = 0.2 cfs @ 12.26 hrs, Volume= 0.027 af
Primary = 0.2 cfs @ 12.26 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 22.68% Impervious, Inflow Depth = 1.12" for 10-year event
Inflow = 0.4 cfs @ 12.08 hrs, Volume= 0.031 af
Primary = 0.4 cfs @ 12.08 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.6: Wetland 18

Inflow Area = 16.838 ac, 1.67% Impervious, Inflow Depth = 0.09" for 10-year event
Inflow = 0.9 cfs @ 12.29 hrs, Volume= 0.125 af
Primary = 0.9 cfs @ 12.29 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.8: Wetland 45

Inflow Area = 0.970 ac, 21.04% Impervious, Inflow Depth = 0.90" for 10-year event
Inflow = 0.8 cfs @ 12.18 hrs, Volume= 0.073 af
Primary = 0.8 cfs @ 12.18 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.9: Low Point

Inflow Area = 0.658 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.25"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.1 cfs 0.033 af

Subcatchment PR-5.11: Subcat PR-5.11 Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.10"
Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.003 af

Subcatchment PR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.91"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=1.9 cfs 0.594 af

Subcatchment PR-5.13: Subcat PR-5.13 Runoff Area=2.618 ac 24.08% Impervious Runoff Depth=1.75"
Flow Length=2,438' Tc=47.3 min CN=37/98 Runoff=1.9 cfs 0.381 af

Subcatchment PR-5.14A: Subcat PR-5.14A Runoff Area=0.670 ac 15.75% Impervious Runoff Depth=1.53"
Flow Length=465' Tc=9.2 min CN=42/98 Runoff=0.7 cfs 0.085 af

Subcatchment PR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.93"
Flow Length=240' Tc=13.7 min CN=32/98 Runoff=0.3 cfs 0.032 af

Subcatchment PR-5.15: Subcat PR-5.15 Runoff Area=0.269 ac 5.22% Impervious Runoff Depth=1.36"
Flow Length=237' Tc=16.8 min CN=48/98 Runoff=0.2 cfs 0.031 af

Subcatchment PR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=0.40"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=1.0 cfs 0.289 af

Subcatchment PR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=1.41"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=25.7 cfs 2.171 af

Subcatchment PR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.82"
Flow Length=590' Tc=75.8 min CN=43/98 Runoff=2.2 cfs 0.716 af

Subcatchment PR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=1.47"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.1 cfs 0.008 af

Subcatchment PR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.13"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.007 af

Subcatchment PR-5.20: Subcat PR-5.20 Runoff Area=1.156 ac 5.71% Impervious Runoff Depth=0.43"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.3 cfs 0.042 af

Subcatchment PR-5.21: Subcat PR-5.21 Runoff Area=0.334 ac 22.68% Impervious Runoff Depth=1.46"
Flow Length=122' Tc=6.0 min CN=31/98 Runoff=0.5 cfs 0.041 af

Subcatchment PR-5.6: Subcat PR-5.6 Runoff Area=16.838 ac 1.67% Impervious Runoff Depth=0.20"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=1.1 cfs 0.276 af

Subcatchment PR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.1 cfs 0.079 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=0.817 ac 19.38% Impervious Runoff Depth=1.27"
Flow Length=200' Tc=12.9 min CN=31/98 Runoff=0.8 cfs 0.086 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=1.91"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.2 cfs 0.024 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=0.658 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=256' Tc=13.7 min CN=30/0 Runoff=0.0 cfs 0.005 af

Pond P-5.13: Linear Infiltration Basin Peak Elev=173.36' Storage=523 cf Inflow=1.9 cfs 0.381 af
Discarded=0.1 cfs 0.098 af Primary=1.8 cfs 0.283 af Outflow=1.8 cfs 0.381 af

Pond P-5.14B: Linear Infiltration Basin Peak Elev=171.60' Storage=527 cf Inflow=0.3 cfs 0.032 af
Discarded=0.0 cfs 0.032 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.032 af

Pond P-5.8B: Linear Infiltration Basin Peak Elev=200.66' Storage=284 cf Inflow=0.2 cfs 0.024 af
Discarded=0.0 cfs 0.012 af Primary=0.2 cfs 0.012 af Outflow=0.2 cfs 0.024 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.92' Storage=51 cf Inflow=0.1 cfs 0.008 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.006 af Outflow=0.1 cfs 0.008 af

Link DP-5.10: Low Point Inflow=0.1 cfs 0.033 af
Primary=0.1 cfs 0.033 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP-5.12: Wetland 44 Inflow=1.9 cfs 0.594 af
Primary=1.9 cfs 0.594 af

Link DP-5.13: Wetland 44 Inflow=1.8 cfs 0.283 af
Primary=1.8 cfs 0.283 af

Link DP-5.14: Wetland 44 Inflow=0.7 cfs 0.085 af
Primary=0.7 cfs 0.085 af

Link DP-5.15: Wetland 44 Inflow=0.2 cfs 0.031 af
Primary=0.2 cfs 0.031 af

Link DP-5.16: Off-site Wetland Inflow=1.0 cfs 0.289 af
Primary=1.0 cfs 0.289 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=25.7 cfs 2.171 af
Primary=25.7 cfs 2.171 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=2.3 cfs 0.722 af
Primary=2.3 cfs 0.722 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.3 cfs 0.042 af
Primary=0.3 cfs 0.042 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.5 cfs 0.041 af
Primary=0.5 cfs 0.041 af

Link DP-5.6: Wetland 18 Inflow=1.1 cfs 0.276 af
Primary=1.1 cfs 0.276 af

Link DP-5.7: Wetland 19 Inflow=0.1 cfs 0.079 af
Primary=0.1 cfs 0.079 af

Link DP-5.8: Wetland 45 Inflow=1.0 cfs 0.098 af
Primary=1.0 cfs 0.098 af

Link DP-5.9: Low Point Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Total Runoff Area = 81.681 ac Runoff Volume = 4.903 af Average Runoff Depth = 0.72"
98.02% Pervious = 80.060 ac 1.98% Impervious = 1.621 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 0.033 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 15.76 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.6					**Direct Entry, Same as EX 5.11**

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 1.9 cfs @ 13.39 hrs, Volume= 0.594 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 1.9 cfs @ 12.66 hrs, Volume= 0.381 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.018	98	Water Surface, HSG D
1.513	30	Woods, Good, HSG A
0.167	77	Woods, Good, HSG D
2.618	52	Weighted Average
1.988	37	75.92% Pervious Area
0.630	98	24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.2	113	0.0240	1.55		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
2.9	205	0.0550	1.17		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	2,438	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 0.7 cfs @ 12.14 hrs, Volume= 0.085 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.167	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.010	98	Water Surface, HSG D
0.288	30	Woods, Good, HSG A
0.091	77	Woods, Good, HSG D
0.670	51	Weighted Average
0.564	42	84.25% Pervious Area
0.105	98	15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0180	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	120	0.0720	1.88		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	231	0.0393	2.97		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
9.2	465	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.3 cfs @ 12.18 hrs, Volume= 0.032 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.084	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.274	30	Woods, Good, HSG A
0.413	41	Weighted Average
0.359	32	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.0	190	0.0410	3.04		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	240	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.2 cfs @ 12.27 hrs, Volume= 0.031 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.006	91	Gravel roads, HSG D
0.014	98	Water Surface, HSG D
0.157	30	Woods, Good, HSG A
0.092	77	Woods, Good, HSG D
0.269	51	Weighted Average
0.255	48	94.78% Pervious Area
0.014	98	5.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0560	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	187	0.0513	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	237	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 1.0 cfs @ 12.63 hrs, Volume= 0.289 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
7.311	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.640	37	Weighted Average
8.640	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 25.7 cfs @ 12.11 hrs, Volume= 2.171 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 2.2 cfs @ 13.23 hrs, Volume= 0.716 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
1.982	39	>75% Grass cover, Good, HSG A
0.068	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
5.786	30	Woods, Good, HSG A
2.511	77	Woods, Good, HSG D
10.467	44	Weighted Average
10.347	43	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.1 cfs @ 12.08 hrs, Volume= 0.008 af, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 15.10 hrs, Volume= 0.007 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.3 cfs @ 12.26 hrs, Volume= 0.042 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.066	98	Paved parking, HSG A
1.076	30	Woods, Good, HSG A
1.156	34	Weighted Average
1.090	30	94.29% Pervious Area
0.066	98	5.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.5 cfs @ 12.08 hrs, Volume= 0.041 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.076	98	Paved parking, HSG A
0.234	30	Woods, Good, HSG A
0.334	46	Weighted Average
0.258	31	77.32% Pervious Area
0.076	98	22.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0740	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	72	0.0944	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.1	122	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 1.1 cfs @ 12.29 hrs, Volume= 0.276 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.422	30	Woods, Good, HSG A
16.838	31	Weighted Average
16.557	30	98.33% Pervious Area
0.281	98	1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.1 cfs @ 16.12 hrs, Volume= 0.079 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.8 cfs @ 12.17 hrs, Volume= 0.086 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
0.595	30	Woods, Good, HSG A
0.817	44	Weighted Average
0.658	31	80.62% Pervious Area
0.158	98	19.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.4	150	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	200	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.2 cfs @ 12.15 hrs, Volume= 0.024 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.0 cfs @ 15.33 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.658	30	Woods, Good, HSG A
0.658	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	25	0.0200	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	231	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	256	Total			

Summary for Pond P-5.13: Linear Infiltration Basin

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 1.75" for 25-year event
Inflow = 1.9 cfs @ 12.66 hrs, Volume= 0.381 af
Outflow = 1.8 cfs @ 12.68 hrs, Volume= 0.381 af, Atten= 1%, Lag= 1.4 min
Discarded = 0.1 cfs @ 12.68 hrs, Volume= 0.098 af
Primary = 1.8 cfs @ 12.68 hrs, Volume= 0.283 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 173.36' @ 12.68 hrs Surf.Area= 1,482 sf Storage= 523 cf

Plug-Flow detention time= 19.3 min calculated for 0.381 af (100% of inflow)
Center-of-Mass det. time= 19.3 min (841.6 - 822.3)

Volume	Invert	Avail.Storage	Storage Description
#1	172.60'	952 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.60	0	0	0
173.10	877	219	219
173.60	2,052	732	952

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	172.60'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.68 hrs HW=173.36' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=1.8 cfs @ 12.68 hrs HW=173.36' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 1.8 cfs @ 1.37 fps)

Summary for Pond P-5.14B: Linear Infiltration Basin

Inflow Area =	0.413 ac,	13.05% Impervious,	Inflow Depth =	0.93"	for 25-year event
Inflow =	0.3 cfs @	12.18 hrs,	Volume=	0.032 af	
Outflow =	0.0 cfs @	13.09 hrs,	Volume=	0.032 af,	Atten= 87%, Lag= 54.5 min
Discarded =	0.0 cfs @	13.09 hrs,	Volume=	0.032 af	
Primary =	0.0 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.60' @ 13.09 hrs Surf.Area= 1,473 sf Storage= 527 cf

Plug-Flow detention time= 183.1 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 183.1 min (982.3 - 799.2)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.09 hrs HW=171.60' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=170.80' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 1.91" for 25-year event
Inflow = 0.2 cfs @ 12.15 hrs, Volume= 0.024 af
Outflow = 0.2 cfs @ 12.21 hrs, Volume= 0.024 af, Atten= 8%, Lag= 3.1 min
Discarded = 0.0 cfs @ 12.21 hrs, Volume= 0.012 af
Primary = 0.2 cfs @ 12.21 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 200.66' @ 12.21 hrs Surf.Area= 998 sf Storage= 284 cf

Plug-Flow detention time= 269.4 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 269.6 min (1,038.1 - 768.6)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.21 hrs HW=200.66' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.21 hrs HW=200.66' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.67 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 1.47" for 25-year event
Inflow = 0.1 cfs @ 12.08 hrs, Volume= 0.008 af
Outflow = 0.1 cfs @ 12.09 hrs, Volume= 0.008 af, Atten= 1%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.09 hrs, Volume= 0.002 af
Primary = 0.1 cfs @ 12.09 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.92' @ 12.09 hrs Surf.Area= 197 sf Storage= 51 cf

Plug-Flow detention time= 224.7 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 224.9 min (991.8 - 766.8)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.09 hrs HW=172.92' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.09 hrs HW=172.92' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.38 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.25" for 25-year event
Inflow = 0.1 cfs @ 12.68 hrs, Volume= 0.033 af
Primary = 0.1 cfs @ 12.68 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.11: Off-site

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.0 cfs @ 15.76 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.76 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.91" for 25-year event
Inflow = 1.9 cfs @ 13.39 hrs, Volume= 0.594 af
Primary = 1.9 cfs @ 13.39 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.13: Wetland 44

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 1.30" for 25-year event
Inflow = 1.8 cfs @ 12.68 hrs, Volume= 0.283 af
Primary = 1.8 cfs @ 12.68 hrs, Volume= 0.283 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.14: Wetland 44

Inflow Area = 1.083 ac, 14.72% Impervious, Inflow Depth = 0.95" for 25-year event
Inflow = 0.7 cfs @ 12.14 hrs, Volume= 0.085 af
Primary = 0.7 cfs @ 12.14 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.15: Wetland 44

Inflow Area = 0.269 ac, 5.22% Impervious, Inflow Depth = 1.36" for 25-year event
Inflow = 0.2 cfs @ 12.27 hrs, Volume= 0.031 af
Primary = 0.2 cfs @ 12.27 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 0.40" for 25-year event
Inflow = 1.0 cfs @ 12.63 hrs, Volume= 0.289 af
Primary = 1.0 cfs @ 12.63 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 1.41" for 25-year event
Inflow = 25.7 cfs @ 12.11 hrs, Volume= 2.171 af
Primary = 25.7 cfs @ 12.11 hrs, Volume= 2.171 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.82" for 25-year event
Inflow = 2.3 cfs @ 13.23 hrs, Volume= 0.722 af
Primary = 2.3 cfs @ 13.23 hrs, Volume= 0.722 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.13" for 25-year event
Inflow = 0.0 cfs @ 15.10 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.10 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.156 ac, 5.71% Impervious, Inflow Depth = 0.43" for 25-year event
Inflow = 0.3 cfs @ 12.26 hrs, Volume= 0.042 af
Primary = 0.3 cfs @ 12.26 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 22.68% Impervious, Inflow Depth = 1.46" for 25-year event
Inflow = 0.5 cfs @ 12.08 hrs, Volume= 0.041 af
Primary = 0.5 cfs @ 12.08 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.6: Wetland 18

Inflow Area = 16.838 ac, 1.67% Impervious, Inflow Depth = 0.20" for 25-year event
Inflow = 1.1 cfs @ 12.29 hrs, Volume= 0.276 af
Primary = 1.1 cfs @ 12.29 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 16.12 hrs, Volume= 0.079 af
Primary = 0.1 cfs @ 16.12 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.8: Wetland 45

Inflow Area = 0.970 ac, 21.04% Impervious, Inflow Depth = 1.21" for 25-year event
Inflow = 1.0 cfs @ 12.17 hrs, Volume= 0.098 af
Primary = 1.0 cfs @ 12.17 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.9: Low Point

Inflow Area = 0.658 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.0 cfs @ 15.33 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 15.33 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

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

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.76"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.3 cfs 0.103 af

Subcatchment PR-5.11: Subcat PR-5.11 Runoff Area=0.390 ac 0.00% Impervious Runoff Depth=0.57"
Tc=42.6 min CN=30/0 Runoff=0.0 cfs 0.018 af

Subcatchment PR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=2.07"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=5.2 cfs 1.360 af

Subcatchment PR-5.13: Subcat PR-5.13 Runoff Area=2.618 ac 24.08% Impervious Runoff Depth=2.94"
Flow Length=2,438' Tc=47.3 min CN=37/98 Runoff=3.2 cfs 0.640 af

Subcatchment PR-5.14A: Subcat PR-5.14A Runoff Area=0.670 ac 15.75% Impervious Runoff Depth=2.78"
Flow Length=465' Tc=9.2 min CN=42/98 Runoff=1.6 cfs 0.155 af

Subcatchment PR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=1.73"
Flow Length=240' Tc=13.7 min CN=32/98 Runoff=0.4 cfs 0.060 af

Subcatchment PR-5.15: Subcat PR-5.15 Runoff Area=0.269 ac 5.22% Impervious Runoff Depth=2.71"
Flow Length=237' Tc=16.8 min CN=48/98 Runoff=0.6 cfs 0.061 af

Subcatchment PR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=1.21"
Flow Length=215' Tc=22.6 min CN=37/0 Runoff=5.3 cfs 0.874 af

Subcatchment PR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=2.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=57.9 cfs 4.388 af

Subcatchment PR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=1.92"
Flow Length=590' Tc=75.8 min CN=43/98 Runoff=6.7 cfs 1.672 af

Subcatchment PR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=2.42"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.1 cfs 0.013 af

Subcatchment PR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.65"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.1 cfs 0.035 af

Subcatchment PR-5.20: Subcat PR-5.20 Runoff Area=1.156 ac 5.71% Impervious Runoff Depth=1.01"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.4 cfs 0.097 af

Subcatchment PR-5.21: Subcat PR-5.21 Runoff Area=0.334 ac 22.68% Impervious Runoff Depth=2.40"
Flow Length=122' Tc=6.0 min CN=31/98 Runoff=0.6 cfs 0.067 af

Subcatchment PR-5.6: Subcat PR-5.6 Runoff Area=16.838 ac 1.67% Impervious Runoff Depth=0.70"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=3.6 cfs 0.978 af

Subcatchment PR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=1.0 cfs 0.454 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=0.817 ac 19.38% Impervious Runoff Depth=2.15"
Flow Length=200' Tc=12.9 min CN=31/98 Runoff=1.1 cfs 0.146 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=3.02"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.3 cfs 0.039 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=0.658 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=256' Tc=13.7 min CN=30/0 Runoff=0.1 cfs 0.031 af

Pond P-5.13: Linear Infiltration Basin Peak Elev=173.47' Storage=713 cf Inflow=3.2 cfs 0.640 af
Discarded=0.1 cfs 0.109 af Primary=3.1 cfs 0.531 af Outflow=3.2 cfs 0.640 af

Pond P-5.14B: Linear Infiltration Basin Peak Elev=173.15' Storage=869 cf Inflow=0.4 cfs 0.060 af
Discarded=0.0 cfs 0.054 af Primary=0.3 cfs 0.005 af Outflow=0.3 cfs 0.060 af

Pond P-5.8B: Linear Infiltration Basin Peak Elev=200.68' Storage=303 cf Inflow=0.3 cfs 0.039 af
Discarded=0.0 cfs 0.014 af Primary=0.3 cfs 0.025 af Outflow=0.3 cfs 0.039 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.93' Storage=52 cf Inflow=0.1 cfs 0.013 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.011 af Outflow=0.1 cfs 0.013 af

Link DP-5.10: Low Point Inflow=0.3 cfs 0.103 af
Primary=0.3 cfs 0.103 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.018 af
Primary=0.0 cfs 0.018 af

Link DP-5.12: Wetland 44 Inflow=5.2 cfs 1.360 af
Primary=5.2 cfs 1.360 af

Link DP-5.13: Wetland 44 Inflow=3.1 cfs 0.531 af
Primary=3.1 cfs 0.531 af

Link DP-5.14: Wetland 44 Inflow=1.6 cfs 0.160 af
Primary=1.6 cfs 0.160 af

Link DP-5.15: Wetland 44 Inflow=0.6 cfs 0.061 af
Primary=0.6 cfs 0.061 af

Link DP-5.16: Off-site Wetland Inflow=5.3 cfs 0.874 af
Primary=5.3 cfs 0.874 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=57.9 cfs 4.388 af
Primary=57.9 cfs 4.388 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=6.7 cfs 1.683 af
Primary=6.7 cfs 1.683 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.1 cfs 0.035 af
Primary=0.1 cfs 0.035 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.4 cfs 0.097 af
Primary=0.4 cfs 0.097 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.6 cfs 0.067 af
Primary=0.6 cfs 0.067 af

Link DP-5.6: Wetland 18 Inflow=3.6 cfs 0.978 af
Primary=3.6 cfs 0.978 af

Link DP-5.7: Wetland 19 Inflow=1.0 cfs 0.454 af
Primary=1.0 cfs 0.454 af

Link DP-5.8: Wetland 45 Inflow=1.4 cfs 0.171 af
Primary=1.4 cfs 0.171 af

Link DP-5.9: Low Point Inflow=0.1 cfs 0.031 af
Primary=0.1 cfs 0.031 af

Total Runoff Area = 81.681 ac Runoff Volume = 11.193 af Average Runoff Depth = 1.64"
98.02% Pervious = 80.060 ac 1.98% Impervious = 1.621 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.3 cfs @ 12.91 hrs, Volume= 0.103 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 12.93 hrs, Volume= 0.018 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.390	30	Woods, Good, HSG A
0.390	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.6					**Direct Entry, Same as EX 5.11**

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 5.2 cfs @ 13.30 hrs, Volume= 1.360 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 3.2 cfs @ 12.67 hrs, Volume= 0.640 af, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.018	98	Water Surface, HSG D
1.513	30	Woods, Good, HSG A
0.167	77	Woods, Good, HSG D
2.618	52	Weighted Average
1.988	37	75.92% Pervious Area
0.630	98	24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
25.7	2,070	0.0080	1.34		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.2	113	0.0240	1.55		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
2.9	205	0.0550	1.17		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	2,438	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 1.6 cfs @ 12.14 hrs, Volume= 0.155 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.167	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.010	98	Water Surface, HSG D
0.288	30	Woods, Good, HSG A
0.091	77	Woods, Good, HSG D
0.670	51	Weighted Average
0.564	42	84.25% Pervious Area
0.105	98	15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0180	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	120	0.0720	1.88		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	64	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	231	0.0393	2.97		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
9.2	465	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.4 cfs @ 12.20 hrs, Volume= 0.060 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.084	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.274	30	Woods, Good, HSG A
0.413	41	Weighted Average
0.359	32	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.0	190	0.0410	3.04		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	240	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.6 cfs @ 12.25 hrs, Volume= 0.061 af, Depth= 2.71"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.006	91	Gravel roads, HSG D
0.014	98	Water Surface, HSG D
0.157	30	Woods, Good, HSG A
0.092	77	Woods, Good, HSG D
0.269	51	Weighted Average
0.255	48	94.78% Pervious Area
0.014	98	5.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0560	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	187	0.0513	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	237	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 5.3 cfs @ 12.43 hrs, Volume= 0.874 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
7.311	30	Woods, Good, HSG A
1.329	77	Woods, Good, HSG D
8.640	37	Weighted Average
8.640	37	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 57.9 cfs @ 12.10 hrs, Volume= 4.388 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 6.7 cfs @ 13.14 hrs, Volume= 1.672 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
1.982	39	>75% Grass cover, Good, HSG A
0.068	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
5.786	30	Woods, Good, HSG A
2.511	77	Woods, Good, HSG D
10.467	44	Weighted Average
10.347	43	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.013 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 0.035 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.4 cfs @ 12.34 hrs, Volume= 0.097 af, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.066	98	Paved parking, HSG A
1.076	30	Woods, Good, HSG A
1.156	34	Weighted Average
1.090	30	94.29% Pervious Area
0.066	98	5.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.067 af, Depth= 2.40"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.076	98	Paved parking, HSG A
0.234	30	Woods, Good, HSG A
0.334	46	Weighted Average
0.258	31	77.32% Pervious Area
0.076	98	22.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0740	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	72	0.0944	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.1	122	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 3.6 cfs @ 12.57 hrs, Volume= 0.978 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.422	30	Woods, Good, HSG A
16.838	31	Weighted Average
16.557	30	98.33% Pervious Area
0.281	98	1.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 1.0 cfs @ 13.35 hrs, Volume= 0.454 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 1.1 cfs @ 12.18 hrs, Volume= 0.146 af, Depth= 2.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
0.595	30	Woods, Good, HSG A
0.817	44	Weighted Average
0.658	31	80.62% Pervious Area
0.158	98	19.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.4	150	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	200	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 0.039 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.1 cfs @ 12.49 hrs, Volume= 0.031 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.658	30	Woods, Good, HSG A
0.658	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	25	0.0200	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	231	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.7	256	Total			

Summary for Pond P-5.13: Linear Infiltration Basin

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 2.94" for 100-year event
Inflow = 3.2 cfs @ 12.67 hrs, Volume= 0.640 af
Outflow = 3.2 cfs @ 12.71 hrs, Volume= 0.640 af, Atten= 1%, Lag= 2.6 min
Discarded = 0.1 cfs @ 12.71 hrs, Volume= 0.109 af
Primary = 3.1 cfs @ 12.71 hrs, Volume= 0.531 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 173.47' @ 12.71 hrs Surf.Area= 1,757 sf Storage= 713 cf

Plug-Flow detention time= 13.5 min calculated for 0.640 af (100% of inflow)
Center-of-Mass det. time= 13.5 min (846.5 - 833.1)

Volume	Invert	Avail.Storage	Storage Description
#1	172.60'	952 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.60	0	0	0
173.10	877	219	219
173.60	2,052	732	952

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	172.60'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.71 hrs HW=173.47' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=3.1 cfs @ 12.71 hrs HW=173.47' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.1 cfs @ 1.66 fps)

Summary for Pond P-5.14B: Linear Infiltration Basin

Inflow Area =	0.413 ac, 13.05% Impervious, Inflow Depth = 1.73" for 100-year event				
Inflow =	0.4 cfs @	12.20 hrs,	Volume=	0.060 af	
Outflow =	0.3 cfs @	12.60 hrs,	Volume=	0.060 af,	Atten= 20%, Lag= 23.7 min
Discarded =	0.0 cfs @	12.60 hrs,	Volume=	0.054 af	
Primary =	0.3 cfs @	12.60 hrs,	Volume=	0.005 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 173.15' @ 12.60 hrs Surf.Area= 1,945 sf Storage= 869 cf

Plug-Flow detention time= 220.7 min calculated for 0.060 af (100% of inflow)
Center-of-Mass det. time= 220.8 min (1,045.4 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.60 hrs HW=173.15' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.3 cfs @ 12.60 hrs HW=173.15' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.3 cfs @ 0.55 fps)

Summary for Pond P-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 3.02" for 100-year event
Inflow = 0.3 cfs @ 12.16 hrs, Volume= 0.039 af
Outflow = 0.3 cfs @ 12.21 hrs, Volume= 0.039 af, Atten= 7%, Lag= 2.9 min
Discarded = 0.0 cfs @ 12.21 hrs, Volume= 0.014 af
Primary = 0.3 cfs @ 12.21 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 200.68' @ 12.21 hrs Surf.Area= 1,026 sf Storage= 303 cf

Plug-Flow detention time= 192.0 min calculated for 0.039 af (100% of inflow)
Center-of-Mass det. time= 192.1 min (973.6 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.21 hrs HW=200.68' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.3 cfs @ 12.21 hrs HW=200.68' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.3 cfs @ 0.76 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 2.42" for 100-year event
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 0.013 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.013 af, Atten= 1%, Lag= 0.5 min
Discarded = 0.0 cfs @ 12.10 hrs, Volume= 0.002 af
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.93' @ 12.10 hrs Surf.Area= 200 sf Storage= 52 cf

Plug-Flow detention time= 143.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 144.2 min (929.7 - 785.6)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.10 hrs HW=172.93' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=172.93' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.42 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.76" for 100-year event
Inflow = 0.3 cfs @ 12.91 hrs, Volume= 0.103 af
Primary = 0.3 cfs @ 12.91 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.11: Off-site

Inflow Area = 0.390 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.0 cfs @ 12.93 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 12.93 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 2.07" for 100-year event
Inflow = 5.2 cfs @ 13.30 hrs, Volume= 1.360 af
Primary = 5.2 cfs @ 13.30 hrs, Volume= 1.360 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.13: Wetland 44

Inflow Area = 2.618 ac, 24.08% Impervious, Inflow Depth = 2.44" for 100-year event
Inflow = 3.1 cfs @ 12.71 hrs, Volume= 0.531 af
Primary = 3.1 cfs @ 12.71 hrs, Volume= 0.531 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.14: Wetland 44

Inflow Area = 1.083 ac, 14.72% Impervious, Inflow Depth = 1.78" for 100-year event
Inflow = 1.6 cfs @ 12.14 hrs, Volume= 0.160 af
Primary = 1.6 cfs @ 12.14 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.15: Wetland 44

Inflow Area = 0.269 ac, 5.22% Impervious, Inflow Depth = 2.71" for 100-year event
Inflow = 0.6 cfs @ 12.25 hrs, Volume= 0.061 af
Primary = 0.6 cfs @ 12.25 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 1.21" for 100-year event
Inflow = 5.3 cfs @ 12.43 hrs, Volume= 0.874 af
Primary = 5.3 cfs @ 12.43 hrs, Volume= 0.874 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 2.85" for 100-year event
Inflow = 57.9 cfs @ 12.10 hrs, Volume= 4.388 af
Primary = 57.9 cfs @ 12.10 hrs, Volume= 4.388 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 1.92" for 100-year event
Inflow = 6.7 cfs @ 13.14 hrs, Volume= 1.683 af
Primary = 6.7 cfs @ 13.14 hrs, Volume= 1.683 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.65" for 100-year event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 0.035 af
Primary = 0.1 cfs @ 12.57 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.156 ac, 5.71% Impervious, Inflow Depth = 1.01" for 100-year event
Inflow = 0.4 cfs @ 12.34 hrs, Volume= 0.097 af
Primary = 0.4 cfs @ 12.34 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 0.334 ac, 22.68% Impervious, Inflow Depth = 2.40" for 100-year event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.067 af
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.6: Wetland 18

Inflow Area = 16.838 ac, 1.67% Impervious, Inflow Depth = 0.70" for 100-year event
Inflow = 3.6 cfs @ 12.57 hrs, Volume= 0.978 af
Primary = 3.6 cfs @ 12.57 hrs, Volume= 0.978 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 1.0 cfs @ 13.35 hrs, Volume= 0.454 af
Primary = 1.0 cfs @ 13.35 hrs, Volume= 0.454 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP-5.8: Wetland 45

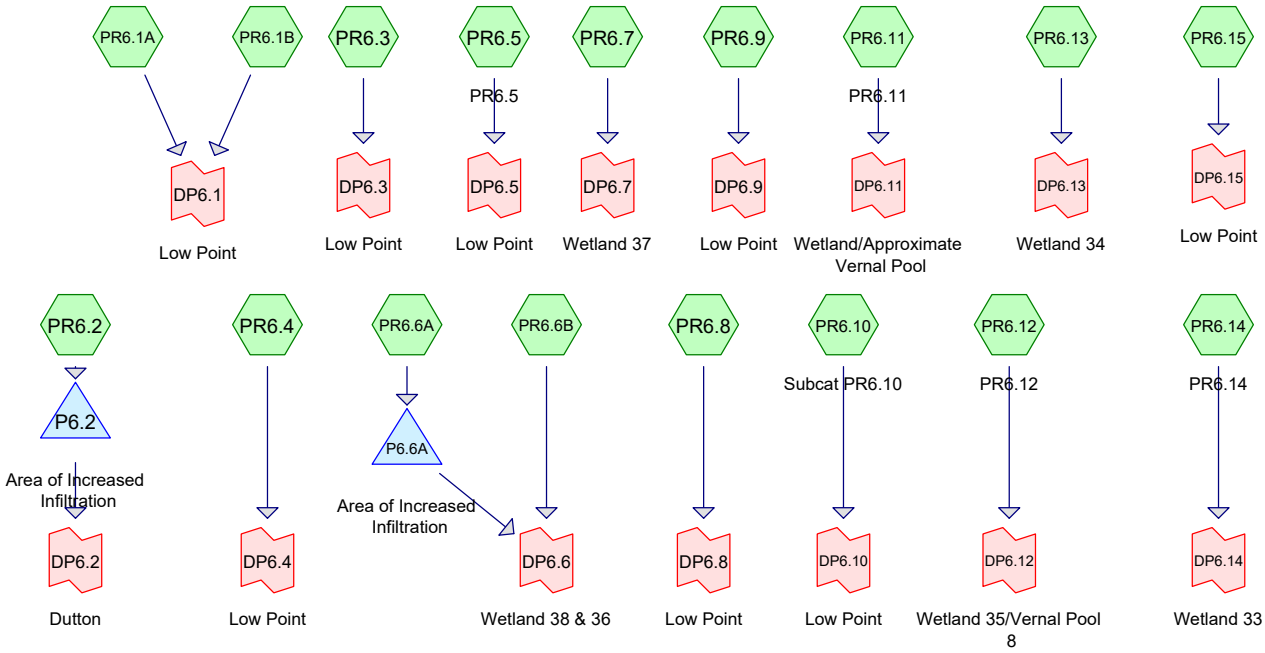
Inflow Area = 0.970 ac, 21.04% Impervious, Inflow Depth = 2.12" for 100-year event
Inflow = 1.4 cfs @ 12.19 hrs, Volume= 0.171 af
Primary = 1.4 cfs @ 12.19 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.0 min

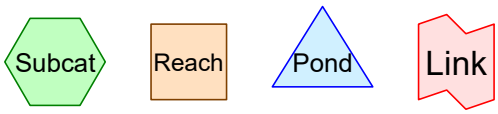
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.9: Low Point

Inflow Area = 0.658 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.1 cfs @ 12.49 hrs, Volume= 0.031 af
Primary = 0.1 cfs @ 12.49 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

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





Routing Diagram for 14009.00-PR-Segment 6_ResponsetoComments_REV_Full

Prepared by VHB, Printed 10/16/2020

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

SubcatchmentPR6.10: Subcat PR6.10 Runoff Area=0.314 ac 0.00% Impervious Runoff Depth=0.00"
Tc=17.1 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.11: PR6.11 Runoff Area=0.070 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=43' Slope=0.1721 '/' Tc=7.9 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.12: PR6.12 Runoff Area=0.128 ac 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.13: Runoff Area=0.432 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=32' Slope=0.1590 '/' Tc=6.5 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.14: PR6.14 Runoff Area=0.699 ac 24.78% Impervious Runoff Depth=0.00"
Flow Length=112' Tc=16.6 min CN=47 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=0.15"
Tc=6.0 min CN=84 Runoff=0.0 cfs 0.001 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.00"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.00"
Flow Length=405' Tc=15.8 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.00"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.00"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=0.00"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.5: PR6.5 Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.00"
Tc=15.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.6A: Runoff Area=0.620 ac 23.00% Impervious Runoff Depth=0.00"
Flow Length=780' Tc=14.4 min CN=46 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.00"
Flow Length=244' Tc=21.7 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.00"
Flow Length=875' Tc=16.2 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

Subcatchment PR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.00"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.000 af

Pond P6.2: Area of Increased Infiltration Peak Elev=181.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=178.90' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.11: Wetland/Approximate Vernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.15: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Wetland 38 & 36 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 27.130 ac Runoff Volume = 0.001 af Average Runoff Depth = 0.00"
87.66% Pervious = 23.782 ac 12.34% Impervious = 3.348 ac

Summary for Subcatchment PR6.10: Subcat PR6.10

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.093	30	Meadow, non-grazed, HSG A
0.221	30	Woods, Good, HSG A
0.314	30	Weighted Average
0.314		100.00% Pervious Area

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

Summary for Subcatchment PR6.11: PR6.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.001	30	Meadow, non-grazed, HSG A
0.069	30	Woods, Good, HSG A
0.070	30	Weighted Average
0.070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	43	0.1721	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.12: PR6.12

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.032	30	Meadow, non-grazed, HSG A
0.096	30	Woods, Good, HSG A
0.128	30	Weighted Average
0.128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 minutes**

Summary for Subcatchment PR6.13:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.106	30	Meadow, non-grazed, HSG A
0.325	30	Woods, Good, HSG A
0.432	30	Weighted Average
0.432		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	32	0.1590	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.14: PR6.14

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.085	30	Meadow, non-grazed, HSG A
0.173	98	Paved parking, HSG A
0.441	30	Woods, Good, HSG A
0.699	47	Weighted Average
0.526		75.22% Pervious Area
0.173		24.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	50	0.0460	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	62	0.0870	0.74		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.6	112	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

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

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.2	12	0.1920	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.8	343	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	405	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5: PR6.5

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Same as EX6.5**

Summary for Subcatchment PR6.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.191	30	Meadow, non-grazed, HSG A
0.143	98	Paved parking, HSG A
0.286	30	Woods, Good, HSG A
0.620	46	Weighted Average
0.477		77.00% Pervious Area
0.143		23.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.4	730	0.0222	2.23		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.4	780	Total			

Summary for Subcatchment PR6.6B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 181.50' @ 0.00 hrs Surf.Area= 431 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
└**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.620 ac, 23.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 178.90' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.90' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.90' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.10: Low Point

Inflow Area = 0.314 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.070 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.128 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.432 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.699 ac, 24.78% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 0.15" for 1" event
Inflow = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.194 ac, 18.67% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentPR6.10: Subcat PR6.10 Runoff Area=0.314 ac 0.00% Impervious Runoff Depth=0.00"
Tc=17.1 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.11: PR6.11 Runoff Area=0.070 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=43' Slope=0.1721 '/' Tc=7.9 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.12: PR6.12 Runoff Area=0.128 ac 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.13: Runoff Area=0.432 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=32' Slope=0.1590 '/' Tc=6.5 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.14: PR6.14 Runoff Area=0.699 ac 24.78% Impervious Runoff Depth=0.09"
Flow Length=112' Tc=16.6 min CN=47 Runoff=0.0 cfs 0.005 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=1.77"
Tc=6.0 min CN=84 Runoff=0.2 cfs 0.012 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.03"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.00"
Flow Length=405' Tc=15.8 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.03"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.0 cfs 0.003 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.02"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.0 cfs 0.001 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=0.15"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.1 cfs 0.036 af

SubcatchmentPR6.5: PR6.5 Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.00"
Tc=15.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.6A: Runoff Area=0.620 ac 23.00% Impervious Runoff Depth=0.07"
Flow Length=780' Tc=14.4 min CN=46 Runoff=0.0 cfs 0.004 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.04"
Flow Length=244' Tc=21.7 min CN=44 Runoff=0.0 cfs 0.023 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.00"
Flow Length=875' Tc=16.2 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

Subcatchment PR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.01"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.001 af

Pond P6.2: Area of Increased Infiltration Peak Elev=181.50' Storage=1 cf Inflow=0.0 cfs 0.003 af
Discarded=0.0 cfs 0.003 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.003 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.07' Storage=45 cf Inflow=0.0 cfs 0.004 af
Discarded=0.0 cfs 0.004 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.004 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.11: Wetland/Approximate Vernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP6.15: Low Point Inflow=0.2 cfs 0.012 af
Primary=0.2 cfs 0.012 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.4: Low Point Inflow=0.1 cfs 0.036 af
Primary=0.1 cfs 0.036 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Wetland 38 & 36 Inflow=0.0 cfs 0.023 af
Primary=0.0 cfs 0.023 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Total Runoff Area = 27.130 ac Runoff Volume = 0.084 af Average Runoff Depth = 0.04"
87.66% Pervious = 23.782 ac 12.34% Impervious = 3.348 ac

Summary for Subcatchment PR6.10: Subcat PR6.10

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.093	30	Meadow, non-grazed, HSG A
0.221	30	Woods, Good, HSG A
0.314	30	Weighted Average
0.314		100.00% Pervious Area

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

Summary for Subcatchment PR6.11: PR6.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.001	30	Meadow, non-grazed, HSG A
0.069	30	Woods, Good, HSG A
0.070	30	Weighted Average
0.070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	43	0.1721	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.12: PR6.12

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.032	30	Meadow, non-grazed, HSG A
0.096	30	Woods, Good, HSG A
0.128	30	Weighted Average
0.128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 minutes**

Summary for Subcatchment PR6.13:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.106	30	Meadow, non-grazed, HSG A
0.325	30	Woods, Good, HSG A
0.432	30	Weighted Average
0.432		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	32	0.1590	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.14: PR6.14

Runoff = 0.0 cfs @ 14.77 hrs, Volume= 0.005 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.085	30	Meadow, non-grazed, HSG A
0.173	98	Paved parking, HSG A
0.441	30	Woods, Good, HSG A
0.699	47	Weighted Average
0.526		75.22% Pervious Area
0.173		24.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	50	0.0460	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	62	0.0870	0.74		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.6	112	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

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

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 16.94 hrs, Volume= 0.000 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.2	12	0.1920	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.8	343	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	405	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.0 cfs @ 17.07 hrs, Volume= 0.003 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.0 cfs @ 20.85 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 0.1 cfs @ 12.87 hrs, Volume= 0.036 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5: PR6.5

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Same as EX6.5**

Summary for Subcatchment PR6.6A:

Runoff = 0.0 cfs @ 14.99 hrs, Volume= 0.004 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.191	30	Meadow, non-grazed, HSG A
0.143	98	Paved parking, HSG A
0.286	30	Woods, Good, HSG A
0.620	46	Weighted Average
0.477		77.00% Pervious Area
0.143		23.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.4	730	0.0222	2.23		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.4	780	Total			

Summary for Subcatchment PR6.6B:

Runoff = 0.0 cfs @ 15.65 hrs, Volume= 0.023 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.0 cfs @ 21.98 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.0 cfs @ 17.07 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 17.08 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.0 cfs @ 17.08 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 181.50' @ 17.08 hrs Surf.Area= 431 sf Storage= 1 cf

Plug-Flow detention time= 3.0 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (1,164.2 - 1,161.3)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 17.08 hrs HW=181.50' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.620 ac, 23.00% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.0 cfs @ 14.99 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 19.90 hrs, Volume= 0.004 af, Atten= 42%, Lag= 294.6 min
Discarded = 0.0 cfs @ 19.90 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 179.07' @ 19.90 hrs Surf.Area= 547 sf Storage= 45 cf

Plug-Flow detention time= 186.9 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 186.9 min (1,260.1 - 1,073.2)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 19.90 hrs HW=179.07' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.90' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 16.94 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 16.94 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.10: Low Point

Inflow Area = 0.314 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.070 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.128 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.432 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.699 ac, 24.78% Impervious, Inflow Depth = 0.09" for 2-yr event
Inflow = 0.0 cfs @ 14.77 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 14.77 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 1.77" for 2-yr event
Inflow = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af
Primary = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.02" for 2-yr event
Inflow = 0.0 cfs @ 20.85 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 20.85 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.1 cfs @ 12.87 hrs, Volume= 0.036 af
Primary = 0.1 cfs @ 12.87 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.194 ac, 18.67% Impervious, Inflow Depth = 0.04" for 2-yr event
Inflow = 0.0 cfs @ 15.65 hrs, Volume= 0.023 af
Primary = 0.0 cfs @ 15.65 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.07 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 21.98 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 21.98 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentPR6.10: Subcat PR6.10 Runoff Area=0.314 ac 0.00% Impervious Runoff Depth=0.01"
Tc=17.1 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.11: PR6.11 Runoff Area=0.070 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=43' Slope=0.1721 '/' Tc=7.9 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.12: PR6.12 Runoff Area=0.128 ac 0.00% Impervious Runoff Depth=0.01"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.13: Runoff Area=0.432 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=32' Slope=0.1590 '/' Tc=6.5 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.14: PR6.14 Runoff Area=0.699 ac 24.78% Impervious Runoff Depth=0.57"
Flow Length=112' Tc=16.6 min CN=47 Runoff=0.2 cfs 0.033 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=3.36"
Tc=6.0 min CN=84 Runoff=0.3 cfs 0.022 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.38"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.003 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.10"
Flow Length=405' Tc=15.8 min CN=35 Runoff=0.0 cfs 0.005 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.38"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.1 cfs 0.032 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.34"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.1 cfs 0.021 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=0.73"
Flow Length=877' Tc=27.4 min CN=50 Runoff=1.0 cfs 0.176 af

SubcatchmentPR6.5: PR6.5 Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.01"
Tc=15.0 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.6A: Runoff Area=0.620 ac 23.00% Impervious Runoff Depth=0.52"
Flow Length=780' Tc=14.4 min CN=46 Runoff=0.1 cfs 0.027 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.43"
Flow Length=244' Tc=21.7 min CN=44 Runoff=1.0 cfs 0.234 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.19"
Flow Length=875' Tc=16.2 min CN=38 Runoff=0.2 cfs 0.109 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.013 af

Subcatchment PR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.30"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.1 cfs 0.022 af

Pond P6.2: Area of Increased Infiltration Peak Elev=182.13' Storage=328 cf Inflow=0.1 cfs 0.032 af
Discarded=0.0 cfs 0.032 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.032 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.41' Storage=431 cf Inflow=0.1 cfs 0.027 af
Discarded=0.0 cfs 0.020 af Primary=0.0 cfs 0.007 af Outflow=0.0 cfs 0.027 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.11: Wetland/Approximate Vernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.14: Wetland 33 Inflow=0.2 cfs 0.033 af
Primary=0.2 cfs 0.033 af

Link DP6.15: Low Point Inflow=0.3 cfs 0.022 af
Primary=0.3 cfs 0.022 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.1 cfs 0.021 af
Primary=0.1 cfs 0.021 af

Link DP6.4: Low Point Inflow=1.0 cfs 0.176 af
Primary=1.0 cfs 0.176 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Wetland 38 & 36 Inflow=1.0 cfs 0.241 af
Primary=1.0 cfs 0.241 af

Link DP6.7: Wetland 37 Inflow=0.2 cfs 0.109 af
Primary=0.2 cfs 0.109 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.013 af
Primary=0.0 cfs 0.013 af

Link DP6.9: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Total Runoff Area = 27.130 ac Runoff Volume = 0.698 af Average Runoff Depth = 0.31"
87.66% Pervious = 23.782 ac 12.34% Impervious = 3.348 ac

Summary for Subcatchment PR6.10: Subcat PR6.10

Runoff = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.093	30	Meadow, non-grazed, HSG A
0.221	30	Woods, Good, HSG A
0.314	30	Weighted Average
0.314		100.00% Pervious Area

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

Summary for Subcatchment PR6.11: PR6.11

Runoff = 0.0 cfs @ 23.27 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.001	30	Meadow, non-grazed, HSG A
0.069	30	Woods, Good, HSG A
0.070	30	Weighted Average
0.070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	43	0.1721	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.12: PR6.12

Runoff = 0.0 cfs @ 23.26 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.032	30	Meadow, non-grazed, HSG A
0.096	30	Woods, Good, HSG A
0.128	30	Weighted Average
0.128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 minutes**

Summary for Subcatchment PR6.13:

Runoff = 0.0 cfs @ 23.22 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.106	30	Meadow, non-grazed, HSG A
0.325	30	Woods, Good, HSG A
0.432	30	Weighted Average
0.432		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	32	0.1590	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.14: PR6.14

Runoff = 0.2 cfs @ 12.41 hrs, Volume= 0.033 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.085	30	Meadow, non-grazed, HSG A
0.173	98	Paved parking, HSG A
0.441	30	Woods, Good, HSG A
0.699	47	Weighted Average
0.526		75.22% Pervious Area
0.173		24.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	50	0.0460	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	62	0.0870	0.74		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.6	112	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

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

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 12.49 hrs, Volume= 0.003 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 15.15 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.2	12	0.1920	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.8	343	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	405	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.1 cfs @ 12.62 hrs, Volume= 0.032 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.021 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 1.0 cfs @ 12.51 hrs, Volume= 0.176 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5: PR6.5

Runoff = 0.0 cfs @ 23.35 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Same as EX6.5**

Summary for Subcatchment PR6.6A:

Runoff = 0.1 cfs @ 12.40 hrs, Volume= 0.027 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.191	30	Meadow, non-grazed, HSG A
0.143	98	Paved parking, HSG A
0.286	30	Woods, Good, HSG A
0.620	46	Weighted Average
0.477		77.00% Pervious Area
0.143		23.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.4	730	0.0222	2.23		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.4	780	Total			

Summary for Subcatchment PR6.6B:

Runoff = 1.0 cfs @ 12.56 hrs, Volume= 0.234 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 0.2 cfs @ 13.77 hrs, Volume= 0.109 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.0 cfs @ 17.69 hrs, Volume= 0.013 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.1 cfs @ 12.56 hrs, Volume= 0.022 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.38" for 10-yr event
Inflow = 0.1 cfs @ 12.62 hrs, Volume= 0.032 af
Outflow = 0.0 cfs @ 15.57 hrs, Volume= 0.032 af, Atten= 66%, Lag= 176.6 min
Discarded = 0.0 cfs @ 15.57 hrs, Volume= 0.032 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 182.13' @ 15.57 hrs Surf.Area= 711 sf Storage= 328 cf

Plug-Flow detention time= 104.6 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 104.6 min (1,081.0 - 976.4)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.57 hrs HW=182.13' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.620 ac, 23.00% Impervious, Inflow Depth = 0.52" for 10-yr event
Inflow = 0.1 cfs @ 12.40 hrs, Volume= 0.027 af
Outflow = 0.0 cfs @ 14.21 hrs, Volume= 0.027 af, Atten= 74%, Lag= 108.8 min
Discarded = 0.0 cfs @ 14.21 hrs, Volume= 0.020 af
Primary = 0.0 cfs @ 14.21 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 179.41' @ 14.21 hrs Surf.Area= 1,795 sf Storage= 431 cf

Plug-Flow detention time= 400.4 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 400.4 min (1,343.8 - 943.4)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 14.21 hrs HW=179.41' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 14.21 hrs HW=179.41' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.25 fps)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.14" for 10-yr event
Inflow = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.10: Low Point

Inflow Area = 0.314 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.070 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.27 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.27 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.128 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.26 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.26 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.432 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.22 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.22 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.699 ac, 24.78% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 0.2 cfs @ 12.41 hrs, Volume= 0.033 af
Primary = 0.2 cfs @ 12.41 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 3.36" for 10-yr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.34" for 10-yr event
Inflow = 0.1 cfs @ 12.51 hrs, Volume= 0.021 af
Primary = 0.1 cfs @ 12.51 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 1.0 cfs @ 12.51 hrs, Volume= 0.176 af
Primary = 1.0 cfs @ 12.51 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.35 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.35 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.194 ac, 18.67% Impervious, Inflow Depth = 0.40" for 10-yr event
Inflow = 1.0 cfs @ 12.56 hrs, Volume= 0.241 af
Primary = 1.0 cfs @ 12.56 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.19" for 10-yr event
Inflow = 0.2 cfs @ 13.77 hrs, Volume= 0.109 af
Primary = 0.2 cfs @ 13.77 hrs, Volume= 0.109 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.69 hrs, Volume= 0.013 af
Primary = 0.0 cfs @ 17.69 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.56 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.56 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentPR6.10: Subcat PR6.10 Runoff Area=0.314 ac 0.00% Impervious Runoff Depth=0.10"
Tc=17.1 min CN=30 Runoff=0.0 cfs 0.003 af

SubcatchmentPR6.11: PR6.11 Runoff Area=0.070 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=43' Slope=0.1721 '/' Tc=7.9 min CN=30 Runoff=0.0 cfs 0.001 af

SubcatchmentPR6.12: PR6.12 Runoff Area=0.128 ac 0.00% Impervious Runoff Depth=0.10"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0.001 af

SubcatchmentPR6.13: Runoff Area=0.432 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=32' Slope=0.1590 '/' Tc=6.5 min CN=30 Runoff=0.0 cfs 0.004 af

SubcatchmentPR6.14: PR6.14 Runoff Area=0.699 ac 24.78% Impervious Runoff Depth=1.04"
Flow Length=112' Tc=16.6 min CN=47 Runoff=0.4 cfs 0.060 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=4.41"
Tc=6.0 min CN=84 Runoff=0.4 cfs 0.029 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.76"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.007 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.30"
Flow Length=405' Tc=15.8 min CN=35 Runoff=0.0 cfs 0.015 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.76"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.3 cfs 0.063 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.70"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.3 cfs 0.043 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=1.26"
Flow Length=877' Tc=27.4 min CN=50 Runoff=2.0 cfs 0.301 af

SubcatchmentPR6.5: PR6.5 Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.10"
Tc=15.0 min CN=30 Runoff=0.0 cfs 0.001 af

SubcatchmentPR6.6A: Runoff Area=0.620 ac 23.00% Impervious Runoff Depth=0.96"
Flow Length=780' Tc=14.4 min CN=46 Runoff=0.4 cfs 0.050 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.83"
Flow Length=244' Tc=21.7 min CN=44 Runoff=2.7 cfs 0.453 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.46"
Flow Length=875' Tc=16.2 min CN=38 Runoff=1.1 cfs 0.267 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.1 cfs 0.069 af

Subcatchment PR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.2 cfs 0.047 af

Pond P6.2: Area of Increased Infiltration Peak Elev=182.34' Storage=509 cf Inflow=0.3 cfs 0.063 af
Discarded=0.1 cfs 0.049 af Primary=0.2 cfs 0.014 af Outflow=0.2 cfs 0.063 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.44' Storage=490 cf Inflow=0.4 cfs 0.050 af
Discarded=0.0 cfs 0.021 af Primary=0.2 cfs 0.029 af Outflow=0.2 cfs 0.050 af

Link DP6.1: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP6.11: Wetland/Approximate Vernal Pool Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP6.14: Wetland 33 Inflow=0.4 cfs 0.060 af
Primary=0.4 cfs 0.060 af

Link DP6.15: Low Point Inflow=0.4 cfs 0.029 af
Primary=0.4 cfs 0.029 af

Link DP6.2: Dutton Inflow=0.2 cfs 0.014 af
Primary=0.2 cfs 0.014 af

Link DP6.3: Low Point Inflow=0.3 cfs 0.043 af
Primary=0.3 cfs 0.043 af

Link DP6.4: Low Point Inflow=2.0 cfs 0.301 af
Primary=2.0 cfs 0.301 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.6: Wetland 38 & 36 Inflow=2.7 cfs 0.482 af
Primary=2.7 cfs 0.482 af

Link DP6.7: Wetland 37 Inflow=1.1 cfs 0.267 af
Primary=1.1 cfs 0.267 af

Link DP6.8: Low Point Inflow=0.1 cfs 0.069 af
Primary=0.1 cfs 0.069 af

Link DP6.9: Low Point Inflow=0.2 cfs 0.047 af
Primary=0.2 cfs 0.047 af

Total Runoff Area = 27.130 ac Runoff Volume = 1.413 af Average Runoff Depth = 0.62"
87.66% Pervious = 23.782 ac 12.34% Impervious = 3.348 ac

Summary for Subcatchment PR6.10: Subcat PR6.10

Runoff = 0.0 cfs @ 15.37 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.093	30	Meadow, non-grazed, HSG A
0.221	30	Woods, Good, HSG A
0.314	30	Weighted Average
0.314		100.00% Pervious Area

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

Summary for Subcatchment PR6.11: PR6.11

Runoff = 0.0 cfs @ 15.23 hrs, Volume= 0.001 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.001	30	Meadow, non-grazed, HSG A
0.069	30	Woods, Good, HSG A
0.070	30	Weighted Average
0.070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	43	0.1721	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.12: PR6.12

Runoff = 0.0 cfs @ 15.22 hrs, Volume= 0.001 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.032	30	Meadow, non-grazed, HSG A
0.096	30	Woods, Good, HSG A
0.128	30	Weighted Average
0.128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 minutes**

Summary for Subcatchment PR6.13:

Runoff = 0.0 cfs @ 15.23 hrs, Volume= 0.004 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.106	30	Meadow, non-grazed, HSG A
0.325	30	Woods, Good, HSG A
0.432	30	Weighted Average
0.432		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	32	0.1590	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.14: PR6.14

Runoff = 0.4 cfs @ 12.30 hrs, Volume= 0.060 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.085	30	Meadow, non-grazed, HSG A
0.173	98	Paved parking, HSG A
0.441	30	Woods, Good, HSG A
0.699	47	Weighted Average
0.526		75.22% Pervious Area
0.173		24.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	50	0.0460	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	62	0.0870	0.74		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.6	112	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

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

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 12.36 hrs, Volume= 0.007 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 12.59 hrs, Volume= 0.015 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.2	12	0.1920	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.8	343	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	405	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.3 cfs @ 12.51 hrs, Volume= 0.063 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.3 cfs @ 12.38 hrs, Volume= 0.043 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 2.0 cfs @ 12.45 hrs, Volume= 0.301 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5: PR6.5

Runoff = 0.0 cfs @ 15.35 hrs, Volume= 0.001 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Same as EX6.5**

Summary for Subcatchment PR6.6A:

Runoff = 0.4 cfs @ 12.27 hrs, Volume= 0.050 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.191	30	Meadow, non-grazed, HSG A
0.143	98	Paved parking, HSG A
0.286	30	Woods, Good, HSG A
0.620	46	Weighted Average
0.477		77.00% Pervious Area
0.143		23.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.4	730	0.0222	2.23		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.4	780	Total			

Summary for Subcatchment PR6.6B:

Runoff = 2.7 cfs @ 12.44 hrs, Volume= 0.453 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 1.1 cfs @ 12.51 hrs, Volume= 0.267 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.1 cfs @ 14.97 hrs, Volume= 0.069 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.2 cfs @ 12.45 hrs, Volume= 0.047 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.76" for 25-yr event
Inflow = 0.3 cfs @ 12.51 hrs, Volume= 0.063 af
Outflow = 0.2 cfs @ 12.85 hrs, Volume= 0.063 af, Atten= 36%, Lag= 20.3 min
Discarded = 0.1 cfs @ 12.85 hrs, Volume= 0.049 af
Primary = 0.2 cfs @ 12.85 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 182.34' @ 12.85 hrs Surf.Area= 968 sf Storage= 509 cf

Plug-Flow detention time= 105.6 min calculated for 0.063 af (100% of inflow)
Center-of-Mass det. time= 105.6 min (1,046.5 - 940.9)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.85 hrs HW=182.34' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.2 cfs @ 12.85 hrs HW=182.34' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.48 fps)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.620 ac, 23.00% Impervious, Inflow Depth = 0.96" for 25-yr event
Inflow = 0.4 cfs @ 12.27 hrs, Volume= 0.050 af
Outflow = 0.2 cfs @ 12.62 hrs, Volume= 0.050 af, Atten= 43%, Lag= 21.0 min
Discarded = 0.0 cfs @ 12.62 hrs, Volume= 0.021 af
Primary = 0.2 cfs @ 12.62 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 179.44' @ 12.62 hrs Surf.Area= 2,193 sf Storage= 490 cf

Plug-Flow detention time= 227.2 min calculated for 0.050 af (100% of inflow)
Center-of-Mass det. time= 227.4 min (1,142.7 - 915.3)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.62 hrs HW=179.44' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.62 hrs HW=179.44' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.49 fps)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.37" for 25-yr event
Inflow = 0.1 cfs @ 12.52 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.52 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.10: Low Point

Inflow Area = 0.314 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.37 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.37 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.070 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.23 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 15.23 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.128 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.22 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 15.22 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.432 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.23 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 15.23 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.699 ac, 24.78% Impervious, Inflow Depth = 1.04" for 25-yr event
Inflow = 0.4 cfs @ 12.30 hrs, Volume= 0.060 af
Primary = 0.4 cfs @ 12.30 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 4.41" for 25-yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.2 cfs @ 12.85 hrs, Volume= 0.014 af
Primary = 0.2 cfs @ 12.85 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.70" for 25-yr event
Inflow = 0.3 cfs @ 12.38 hrs, Volume= 0.043 af
Primary = 0.3 cfs @ 12.38 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 2.0 cfs @ 12.45 hrs, Volume= 0.301 af
Primary = 2.0 cfs @ 12.45 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.35 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 15.35 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.194 ac, 18.67% Impervious, Inflow Depth = 0.80" for 25-yr event
Inflow = 2.7 cfs @ 12.51 hrs, Volume= 0.482 af
Primary = 2.7 cfs @ 12.51 hrs, Volume= 0.482 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.46" for 25-yr event
Inflow = 1.1 cfs @ 12.51 hrs, Volume= 0.267 af
Primary = 1.1 cfs @ 12.51 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.1 cfs @ 14.97 hrs, Volume= 0.069 af
Primary = 0.1 cfs @ 14.97 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.2 cfs @ 12.45 hrs, Volume= 0.047 af
Primary = 0.2 cfs @ 12.45 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

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

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

SubcatchmentPR6.10: Subcat PR6.10 Runoff Area=0.314 ac 0.00% Impervious Runoff Depth=0.57"
Tc=17.1 min CN=30 Runoff=0.1 cfs 0.015 af

SubcatchmentPR6.11: PR6.11 Runoff Area=0.070 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=43' Slope=0.1721 '/' Tc=7.9 min CN=30 Runoff=0.0 cfs 0.003 af

SubcatchmentPR6.12: PR6.12 Runoff Area=0.128 ac 0.00% Impervious Runoff Depth=0.57"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0.006 af

SubcatchmentPR6.13: Runoff Area=0.432 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=32' Slope=0.1590 '/' Tc=6.5 min CN=30 Runoff=0.1 cfs 0.020 af

SubcatchmentPR6.14: PR6.14 Runoff Area=0.699 ac 24.78% Impervious Runoff Depth=2.28"
Flow Length=112' Tc=16.6 min CN=47 Runoff=1.2 cfs 0.133 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=6.67"
Tc=6.0 min CN=84 Runoff=0.6 cfs 0.044 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=1.84"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.1 cfs 0.017 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=1.02"
Flow Length=405' Tc=15.8 min CN=35 Runoff=0.3 cfs 0.050 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=1.84"
Flow Length=645' Tc=24.9 min CN=43 Runoff=1.1 cfs 0.153 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=1.73"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.9 cfs 0.108 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=2.62"
Flow Length=877' Tc=27.4 min CN=50 Runoff=4.8 cfs 0.628 af

SubcatchmentPR6.5: PR6.5 Runoff Area=0.075 ac 0.00% Impervious Runoff Depth=0.57"
Tc=15.0 min CN=30 Runoff=0.0 cfs 0.004 af

SubcatchmentPR6.6A: Runoff Area=0.620 ac 23.00% Impervious Runoff Depth=2.17"
Flow Length=780' Tc=14.4 min CN=46 Runoff=1.1 cfs 0.112 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=1.95"
Flow Length=244' Tc=21.7 min CN=44 Runoff=8.3 cfs 1.069 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=1.32"
Flow Length=875' Tc=16.2 min CN=38 Runoff=5.4 cfs 0.768 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=603' Tc=34.1 min CN=32 Runoff=1.1 cfs 0.303 af

SubcatchmentPR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=1.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.9 cfs 0.121 af

Pond P6.2: Area of Increased Infiltration Peak Elev=182.44' Storage=615 cf Inflow=1.1 cfs 0.153 af
Discarded=0.1 cfs 0.063 af Primary=1.0 cfs 0.090 af Outflow=1.1 cfs 0.153 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.51' Storage=675 cf Inflow=1.1 cfs 0.112 af
Discarded=0.0 cfs 0.022 af Primary=0.9 cfs 0.090 af Outflow=0.9 cfs 0.112 af

Link DP6.1: Low Point Inflow=0.4 cfs 0.067 af
Primary=0.4 cfs 0.067 af

Link DP6.10: Low Point Inflow=0.1 cfs 0.015 af
Primary=0.1 cfs 0.015 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP6.13: Wetland 34 Inflow=0.1 cfs 0.020 af
Primary=0.1 cfs 0.020 af

Link DP6.14: Wetland 33 Inflow=1.2 cfs 0.133 af
Primary=1.2 cfs 0.133 af

Link DP6.15: Low Point Inflow=0.6 cfs 0.044 af
Primary=0.6 cfs 0.044 af

Link DP6.2: Dutton Inflow=1.0 cfs 0.090 af
Primary=1.0 cfs 0.090 af

Link DP6.3: Low Point Inflow=0.9 cfs 0.108 af
Primary=0.9 cfs 0.108 af

Link DP6.4: Low Point Inflow=4.8 cfs 0.628 af
Primary=4.8 cfs 0.628 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP6.6: Wetland 38 & 36 Inflow=9.2 cfs 1.160 af
Primary=9.2 cfs 1.160 af

Link DP6.7: Wetland 37 Inflow=5.4 cfs 0.768 af
Primary=5.4 cfs 0.768 af

Link DP6.8: Low Point Inflow=1.1 cfs 0.303 af
Primary=1.1 cfs 0.303 af

Link DP6.9: Low Point Inflow=0.9 cfs 0.121 af
Primary=0.9 cfs 0.121 af

Total Runoff Area = 27.130 ac Runoff Volume = 3.555 af Average Runoff Depth = 1.57"
87.66% Pervious = 23.782 ac 12.34% Impervious = 3.348 ac

Summary for Subcatchment PR6.10: Subcat PR6.10

Runoff = 0.1 cfs @ 12.53 hrs, Volume= 0.015 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.093	30	Meadow, non-grazed, HSG A
0.221	30	Woods, Good, HSG A
0.314	30	Weighted Average
0.314		100.00% Pervious Area

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

Summary for Subcatchment PR6.11: PR6.11

Runoff = 0.0 cfs @ 12.40 hrs, Volume= 0.003 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.001	30	Meadow, non-grazed, HSG A
0.069	30	Woods, Good, HSG A
0.070	30	Weighted Average
0.070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	43	0.1721	0.09		**Sheet Flow,**
					Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.12: PR6.12

Runoff = 0.0 cfs @ 12.37 hrs, Volume= 0.006 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.032	30	Meadow, non-grazed, HSG A
0.096	30	Woods, Good, HSG A
0.128	30	Weighted Average
0.128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 minutes**

Summary for Subcatchment PR6.13:

Runoff = 0.1 cfs @ 12.37 hrs, Volume= 0.020 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.106	30	Meadow, non-grazed, HSG A
0.325	30	Woods, Good, HSG A
0.432	30	Weighted Average
0.432		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	32	0.1590	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR6.14: PR6.14

Runoff = 1.2 cfs @ 12.26 hrs, Volume= 0.133 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.085	30	Meadow, non-grazed, HSG A
0.173	98	Paved parking, HSG A
0.441	30	Woods, Good, HSG A
0.699	47	Weighted Average
0.526		75.22% Pervious Area
0.173		24.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	50	0.0460	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	62	0.0870	0.74		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.6	112	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.044 af, Depth= 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

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

Summary for Subcatchment PR6.1A:

Runoff = 0.1 cfs @ 12.26 hrs, Volume= 0.017 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.3 cfs @ 12.38 hrs, Volume= 0.050 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.2	12	0.1920	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.8	343	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	405	Total			

Summary for Subcatchment PR6.2:

Runoff = 1.1 cfs @ 12.42 hrs, Volume= 0.153 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.9 cfs @ 12.25 hrs, Volume= 0.108 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5: PR6.5

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 0.004 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.071	30	Woods, Good, HSG A
0.075	30	Weighted Average
0.075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Same as EX6.5**

Summary for Subcatchment PR6.6A:

Runoff = 1.1 cfs @ 12.22 hrs, Volume= 0.112 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.191	30	Meadow, non-grazed, HSG A
0.143	98	Paved parking, HSG A
0.286	30	Woods, Good, HSG A
0.620	46	Weighted Average
0.477		77.00% Pervious Area
0.143		23.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.4	730	0.0222	2.23		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.4	780	Total			

Summary for Subcatchment PR6.6B:

Runoff = 8.3 cfs @ 12.35 hrs, Volume= 1.069 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 5.4 cfs @ 12.30 hrs, Volume= 0.768 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 1.1 cfs @ 12.73 hrs, Volume= 0.303 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.9 cfs @ 12.30 hrs, Volume= 0.121 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 1.84" for 100-yr event
Inflow = 1.1 cfs @ 12.42 hrs, Volume= 0.153 af
Outflow = 1.1 cfs @ 12.45 hrs, Volume= 0.153 af, Atten= 1%, Lag= 2.1 min
Discarded = 0.1 cfs @ 12.45 hrs, Volume= 0.063 af
Primary = 1.0 cfs @ 12.45 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 182.44' @ 12.45 hrs Surf.Area= 1,091 sf Storage= 615 cf

Plug-Flow detention time= 59.4 min calculated for 0.153 af (100% of inflow)
Center-of-Mass det. time= 59.4 min (964.1 - 904.7)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.45 hrs HW=182.44' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=1.0 cfs @ 12.45 hrs HW=182.44' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.0 cfs @ 0.89 fps)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.620 ac, 23.00% Impervious, Inflow Depth = 2.17" for 100-yr event
Inflow = 1.1 cfs @ 12.22 hrs, Volume= 0.112 af
Outflow = 0.9 cfs @ 12.34 hrs, Volume= 0.112 af, Atten= 15%, Lag= 6.9 min
Discarded = 0.0 cfs @ 12.34 hrs, Volume= 0.022 af
Primary = 0.9 cfs @ 12.34 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 179.51' @ 12.34 hrs Surf.Area= 3,134 sf Storage= 675 cf

Plug-Flow detention time= 106.0 min calculated for 0.112 af (100% of inflow)
Center-of-Mass det. time= 106.2 min (991.2 - 885.0)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.34 hrs HW=179.51' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.9 cfs @ 12.34 hrs HW=179.51' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.9 cfs @ 0.81 fps)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 1.14" for 100-yr event
Inflow = 0.4 cfs @ 12.32 hrs, Volume= 0.067 af
Primary = 0.4 cfs @ 12.32 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.10: Low Point

Inflow Area = 0.314 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.1 cfs @ 12.53 hrs, Volume= 0.015 af
Primary = 0.1 cfs @ 12.53 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.070 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.0 cfs @ 12.40 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 12.40 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.128 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.0 cfs @ 12.37 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 12.37 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.13: Wetland 34

Inflow Area = 0.432 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.1 cfs @ 12.37 hrs, Volume= 0.020 af
Primary = 0.1 cfs @ 12.37 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.14: Wetland 33

Inflow Area = 0.699 ac, 24.78% Impervious, Inflow Depth = 2.28" for 100-yr event
Inflow = 1.2 cfs @ 12.26 hrs, Volume= 0.133 af
Primary = 1.2 cfs @ 12.26 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 6.67" for 100-yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.044 af
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 1.09" for 100-yr event
Inflow = 1.0 cfs @ 12.45 hrs, Volume= 0.090 af
Primary = 1.0 cfs @ 12.45 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 1.73" for 100-yr event
Inflow = 0.9 cfs @ 12.25 hrs, Volume= 0.108 af
Primary = 0.9 cfs @ 12.25 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 2.62" for 100-yr event
Inflow = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af
Primary = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.5: Low Point

Inflow Area = 0.075 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.0 cfs @ 12.51 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.51 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.194 ac, 18.67% Impervious, Inflow Depth = 1.93" for 100-yr event
Inflow = 9.2 cfs @ 12.35 hrs, Volume= 1.160 af
Primary = 9.2 cfs @ 12.35 hrs, Volume= 1.160 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 1.32" for 100-yr event
Inflow = 5.4 cfs @ 12.30 hrs, Volume= 0.768 af
Primary = 5.4 cfs @ 12.30 hrs, Volume= 0.768 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP6.8: Low Point

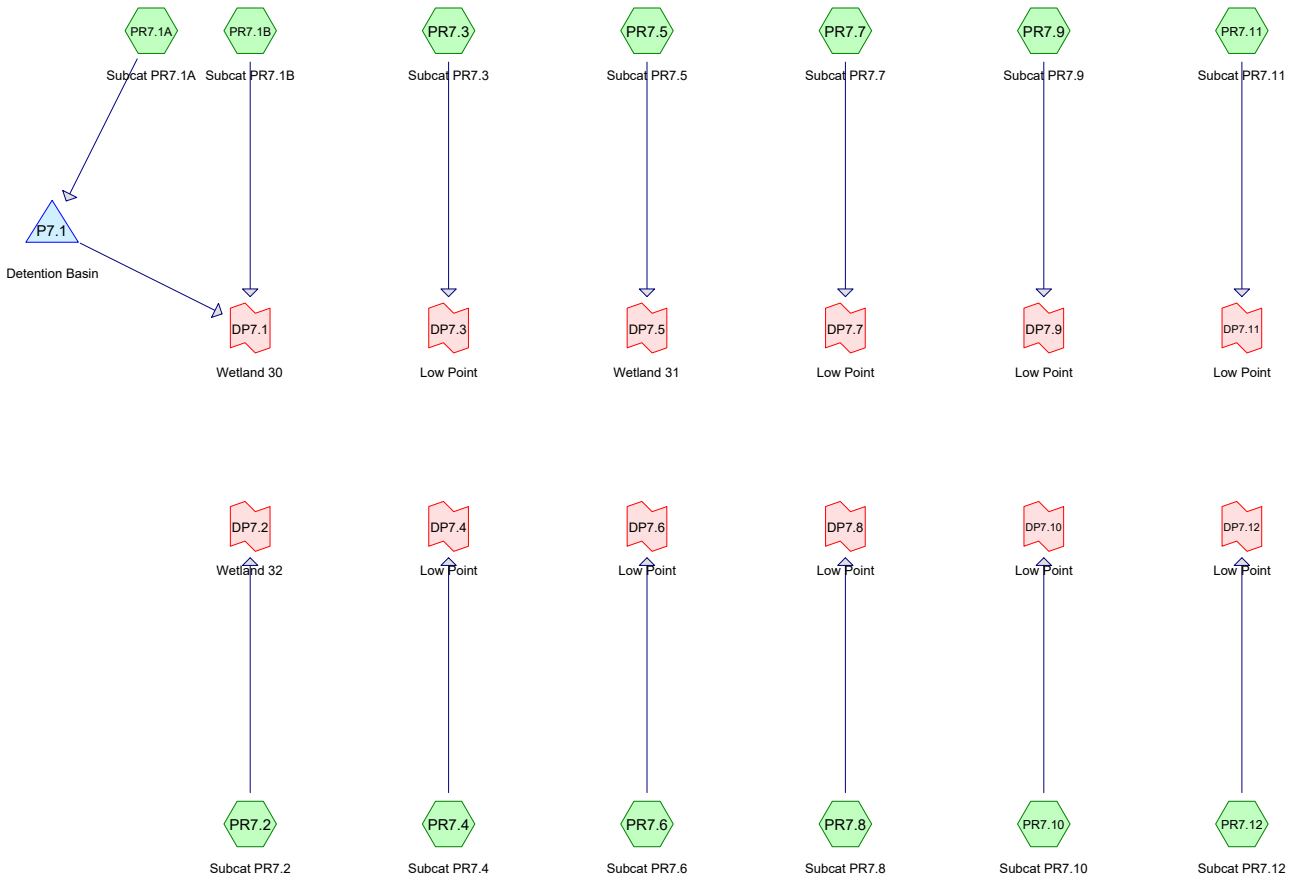
Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 1.1 cfs @ 12.73 hrs, Volume= 0.303 af
Primary = 1.1 cfs @ 12.73 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

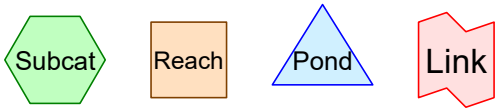
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 0.9 cfs @ 12.30 hrs, Volume= 0.121 af
Primary = 0.9 cfs @ 12.30 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

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





Routing Diagram for 14009.00-PR-Segment 7_ResponsetoComments_REV_Full

Prepared by VHB, Printed 10/16/2020

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

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.00"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.00"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.00"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.215 ac 36.16% Impervious Runoff Depth=0.00"
Flow Length=204' Tc=9.5 min CN=55 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=1.183 ac 22.55% Impervious Runoff Depth=0.00"
Flow Length=126' Tc=17.5 min CN=62 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.00"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=0.119 ac 6.08% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=0.754 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=350' Tc=24.2 min CN=55 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.00"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.00"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.00"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.000 af

Pond P7.1: Detention Basin Peak Elev=159.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link DP7.1: Wetland 30 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.5: Wetland 31 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 20.186 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
86.84% Pervious = 17.528 ac 13.16% Impervious = 2.657 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.095	30	Woods, Good, HSG A
0.215	55	Weighted Average
0.137		63.84% Pervious Area
0.078		36.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0840	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.9	106	0.0339	0.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	48	0.0395	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.5	204	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.151	98	Paved parking, HSG A
0.115	98	Paved parking, HSG D
0.411	30	Woods, Good, HSG A
0.365	77	Woods, Good, HSG D
1.183	62	Weighted Average
0.916		77.45% Pervious Area
0.267		22.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.5	126	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.007	98	Paved parking, HSG A
0.112	30	Woods, Good, HSG A
0.119	34	Weighted Average
0.112		93.92% Pervious Area
0.007		6.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 min TC**

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.298	30	Woods, Good, HSG A
0.302	77	Woods, Good, HSG D
0.754	55	Weighted Average
0.754		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.4	300	0.0370	0.48		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	350	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.215 ac, 36.16% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.50' @ 0.00 hrs Surf.Area= 162 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.50' (Free Discharge)
└─**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.50' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.397 ac, 24.64% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.119 ac, 6.08% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.754 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.00"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.007 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.07"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.007 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.215 ac 36.16% Impervious Runoff Depth=0.28"
Flow Length=204' Tc=9.5 min CN=55 Runoff=0.0 cfs 0.005 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=1.183 ac 22.55% Impervious Runoff Depth=0.52"
Flow Length=126' Tc=17.5 min CN=62 Runoff=0.4 cfs 0.052 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.01"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.004 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=0.119 ac 6.08% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=0.754 ac 0.00% Impervious Runoff Depth=0.28"
Flow Length=350' Tc=24.2 min CN=55 Runoff=0.1 cfs 0.018 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.01"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.0 cfs 0.001 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.01"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.0 cfs 0.001 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.03"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.014 af

Pond P7.1: Detention Basin Peak Elev=160.00' Storage=104 cf Inflow=0.0 cfs 0.005 af
Discarded=0.0 cfs 0.003 af Primary=0.0 cfs 0.002 af Outflow=0.0 cfs 0.005 af

Link DP7.1: Wetland 30 Inflow=0.4 cfs 0.053 af
Primary=0.4 cfs 0.053 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.5: Wetland 31 Inflow=0.1 cfs 0.018 af
Primary=0.1 cfs 0.018 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Total Runoff Area = 20.186 ac Runoff Volume = 0.109 af Average Runoff Depth = 0.06"
86.84% Pervious = 17.528 ac 13.16% Impervious = 2.657 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.0 cfs @ 12.36 hrs, Volume= 0.005 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.095	30	Woods, Good, HSG A
0.215	55	Weighted Average
0.137		63.84% Pervious Area
0.078		36.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0840	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.9	106	0.0339	0.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	48	0.0395	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.5	204	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 0.4 cfs @ 12.31 hrs, Volume= 0.052 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.151	98	Paved parking, HSG A
0.115	98	Paved parking, HSG D
0.411	30	Woods, Good, HSG A
0.365	77	Woods, Good, HSG D
1.183	62	Weighted Average
0.916		77.45% Pervious Area
0.267		22.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.5	126	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.007	98	Paved parking, HSG A
0.112	30	Woods, Good, HSG A
0.119	34	Weighted Average
0.112		93.92% Pervious Area
0.007		6.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 min TC**

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 0.1 cfs @ 12.58 hrs, Volume= 0.018 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.298	30	Woods, Good, HSG A
0.302	77	Woods, Good, HSG D
0.754	55	Weighted Average
0.754		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.4	300	0.0370	0.48		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	350	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.0 cfs @ 21.97 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.0 cfs @ 23.43 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.215 ac, 36.16% Impervious, Inflow Depth = 0.28" for 2-yr event
Inflow = 0.0 cfs @ 12.36 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 15.19 hrs, Volume= 0.005 af, Atten= 76%, Lag= 169.6 min
Discarded = 0.0 cfs @ 15.19 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.19 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.00' @ 15.19 hrs Surf.Area= 253 sf Storage= 104 cf

Plug-Flow detention time= 777.3 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 777.3 min (1,729.7 - 952.4)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.19 hrs HW=160.00' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 15.19 hrs HW=160.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.16 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.397 ac, 24.64% Impervious, Inflow Depth = 0.46" for 2-yr event
Inflow = 0.4 cfs @ 12.31 hrs, Volume= 0.053 af
Primary = 0.4 cfs @ 12.31 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.06" for 2-yr event
Inflow = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.119 ac, 6.08% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.754 ac, 0.00% Impervious, Inflow Depth = 0.28" for 2-yr event
Inflow = 0.1 cfs @ 12.58 hrs, Volume= 0.018 af
Primary = 0.1 cfs @ 12.58 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 21.97 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 21.97 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 23.43 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 23.43 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.02"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.47"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.3 cfs 0.063 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.52"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.3 cfs 0.054 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.215 ac 36.16% Impervious Runoff Depth=1.03"
Flow Length=204' Tc=9.5 min CN=55 Runoff=0.2 cfs 0.018 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=1.183 ac 22.55% Impervious Runoff Depth=1.50"
Flow Length=126' Tc=17.5 min CN=62 Runoff=1.4 cfs 0.148 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.10"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.0 cfs 0.021 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.30"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.2 cfs 0.090 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=0.119 ac 6.08% Impervious Runoff Depth=0.07"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.001 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=0.754 ac 0.00% Impervious Runoff Depth=1.03"
Flow Length=350' Tc=24.2 min CN=55 Runoff=0.5 cfs 0.065 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.30"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.1 cfs 0.022 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.26"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.1 cfs 0.027 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.38"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.8 cfs 0.183 af

Pond P7.1: Detention Basin Peak Elev=160.05' Storage=116 cf Inflow=0.2 cfs 0.018 af
Discarded=0.0 cfs 0.003 af Primary=0.2 cfs 0.015 af Outflow=0.2 cfs 0.018 af

Link DP7.1: Wetland 30 Inflow=1.5 cfs 0.163 af
Primary=1.5 cfs 0.163 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.3 cfs 0.063 af
Primary=0.3 cfs 0.063 af

Link DP7.12: Low Point Inflow=0.3 cfs 0.054 af
Primary=0.3 cfs 0.054 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.021 af
Primary=0.0 cfs 0.021 af

Link DP7.3: Low Point Inflow=0.2 cfs 0.090 af
Primary=0.2 cfs 0.090 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP7.5: Wetland 31 Inflow=0.5 cfs 0.065 af
Primary=0.5 cfs 0.065 af

Link DP7.6: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.1 cfs 0.027 af
Primary=0.1 cfs 0.027 af

Link DP7.9: Low Point Inflow=0.8 cfs 0.183 af
Primary=0.8 cfs 0.183 af

Total Runoff Area = 20.186 ac Runoff Volume = 0.693 af Average Runoff Depth = 0.41"
86.84% Pervious = 17.528 ac 13.16% Impervious = 2.657 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 22.09 hrs, Volume= 0.000 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.2 cfs @ 12.16 hrs, Volume= 0.018 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.095	30	Woods, Good, HSG A
0.215	55	Weighted Average
0.137		63.84% Pervious Area
0.078		36.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0840	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.9	106	0.0339	0.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	48	0.0395	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.5	204	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 1.4 cfs @ 12.27 hrs, Volume= 0.148 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.151	98	Paved parking, HSG A
0.115	98	Paved parking, HSG D
0.411	30	Woods, Good, HSG A
0.365	77	Woods, Good, HSG D
1.183	62	Weighted Average
0.916		77.45% Pervious Area
0.267		22.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.5	126	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.0 cfs @ 15.32 hrs, Volume= 0.021 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 0.0 cfs @ 15.34 hrs, Volume= 0.001 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.007	98	Paved parking, HSG A
0.112	30	Woods, Good, HSG A
0.119	34	Weighted Average
0.112		93.92% Pervious Area
0.007		6.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 min TC**

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 0.5 cfs @ 12.40 hrs, Volume= 0.065 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.298	30	Woods, Good, HSG A
0.302	77	Woods, Good, HSG D
0.754	55	Weighted Average
0.754		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.4	300	0.0370	0.48		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	350	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.1 cfs @ 12.83 hrs, Volume= 0.027 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.215 ac, 36.16% Impervious, Inflow Depth = 1.03" for 10-yr event
Inflow = 0.2 cfs @ 12.16 hrs, Volume= 0.018 af
Outflow = 0.2 cfs @ 12.24 hrs, Volume= 0.018 af, Atten= 16%, Lag= 5.3 min
Discarded = 0.0 cfs @ 12.24 hrs, Volume= 0.003 af
Primary = 0.2 cfs @ 12.24 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.05' @ 12.24 hrs Surf.Area= 261 sf Storage= 116 cf

Plug-Flow detention time= 222.5 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 222.7 min (1,116.8 - 894.0)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.24 hrs HW=160.05' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.24 hrs HW=160.05' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.59 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.397 ac, 24.64% Impervious, Inflow Depth = 1.40" for 10-yr event
Inflow = 1.5 cfs @ 12.26 hrs, Volume= 0.163 af
Primary = 1.5 cfs @ 12.26 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.02" for 10-yr event
Inflow = 0.0 cfs @ 22.09 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 22.09 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.47" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.52" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.32 hrs, Volume= 0.021 af
Primary = 0.0 cfs @ 15.32 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af
Primary = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.119 ac, 6.08% Impervious, Inflow Depth = 0.07" for 10-yr event
Inflow = 0.0 cfs @ 15.34 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 15.34 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.754 ac, 0.00% Impervious, Inflow Depth = 1.03" for 10-yr event
Inflow = 0.5 cfs @ 12.40 hrs, Volume= 0.065 af
Primary = 0.5 cfs @ 12.40 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.26" for 10-yr event
Inflow = 0.1 cfs @ 12.83 hrs, Volume= 0.027 af
Primary = 0.1 cfs @ 12.83 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.38" for 10-yr event
Inflow = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af
Primary = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.13"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.003 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.90"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.8 cfs 0.118 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.96"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.7 cfs 0.100 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.215 ac 36.16% Impervious Runoff Depth=1.65"
Flow Length=204' Tc=9.5 min CN=55 Runoff=0.3 cfs 0.030 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=1.183 ac 22.55% Impervious Runoff Depth=2.25"
Flow Length=126' Tc=17.5 min CN=62 Runoff=2.1 cfs 0.222 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.30"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.1 cfs 0.066 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.8 cfs 0.192 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=0.119 ac 6.08% Impervious Runoff Depth=0.25"
Tc=6.0 min CN=34 Runoff=0.0 cfs 0.003 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=0.754 ac 0.00% Impervious Runoff Depth=1.65"
Flow Length=350' Tc=24.2 min CN=55 Runoff=0.8 cfs 0.104 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.63"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.3 cfs 0.048 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.005 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.57"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.2 cfs 0.061 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.76"
Flow Length=610' Tc=18.2 min CN=43 Runoff=2.1 cfs 0.364 af

Pond P7.1: Detention Basin Peak Elev=160.08' Storage=124 cf Inflow=0.3 cfs 0.030 af
Discarded=0.0 cfs 0.003 af Primary=0.3 cfs 0.026 af Outflow=0.3 cfs 0.030 af

Link DP7.1: Wetland 30 Inflow=2.4 cfs 0.248 af
Primary=2.4 cfs 0.248 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP7.11: Low Point Inflow=0.8 cfs 0.118 af
Primary=0.8 cfs 0.118 af

Link DP7.12: Low Point Inflow=0.7 cfs 0.100 af
Primary=0.7 cfs 0.100 af

Link DP7.2: Wetland 32 Inflow=0.1 cfs 0.066 af
Primary=0.1 cfs 0.066 af

Link DP7.3: Low Point Inflow=0.8 cfs 0.192 af
Primary=0.8 cfs 0.192 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP7.5: Wetland 31 Inflow=0.8 cfs 0.104 af
Primary=0.8 cfs 0.104 af

Link DP7.6: Low Point Inflow=0.3 cfs 0.048 af
Primary=0.3 cfs 0.048 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP7.8: Low Point Inflow=0.2 cfs 0.061 af
Primary=0.2 cfs 0.061 af

Link DP7.9: Low Point Inflow=2.1 cfs 0.364 af
Primary=2.1 cfs 0.364 af

Total Runoff Area = 20.186 ac Runoff Volume = 1.314 af Average Runoff Depth = 0.78"
86.84% Pervious = 17.528 ac 13.16% Impervious = 2.657 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 15.18 hrs, Volume= 0.003 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.3 cfs @ 12.15 hrs, Volume= 0.030 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.095	30	Woods, Good, HSG A
0.215	55	Weighted Average
0.137		63.84% Pervious Area
0.078		36.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0840	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.9	106	0.0339	0.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	48	0.0395	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.5	204	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 2.1 cfs @ 12.26 hrs, Volume= 0.222 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.151	98	Paved parking, HSG A
0.115	98	Paved parking, HSG D
0.411	30	Woods, Good, HSG A
0.365	77	Woods, Good, HSG D
1.183	62	Weighted Average
0.916		77.45% Pervious Area
0.267		22.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.5	126	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.1 cfs @ 12.74 hrs, Volume= 0.066 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.007	98	Paved parking, HSG A
0.112	30	Woods, Good, HSG A
0.119	34	Weighted Average
0.112		93.92% Pervious Area
0.007		6.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 min TC**

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 0.8 cfs @ 12.39 hrs, Volume= 0.104 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.298	30	Woods, Good, HSG A
0.302	77	Woods, Good, HSG D
0.754	55	Weighted Average
0.754		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.4	300	0.0370	0.48		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	350	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.3 cfs @ 12.45 hrs, Volume= 0.048 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 15.32 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.2 cfs @ 12.64 hrs, Volume= 0.061 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.215 ac, 36.16% Impervious, Inflow Depth = 1.65" for 25-yr event
Inflow = 0.3 cfs @ 12.15 hrs, Volume= 0.030 af
Outflow = 0.3 cfs @ 12.16 hrs, Volume= 0.030 af, Atten= 1%, Lag= 0.8 min
Discarded = 0.0 cfs @ 12.16 hrs, Volume= 0.003 af
Primary = 0.3 cfs @ 12.16 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.08' @ 12.16 hrs Surf.Area= 267 sf Storage= 124 cf

Plug-Flow detention time= 140.4 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 140.3 min (1,017.9 - 877.5)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.16 hrs HW=160.08' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.3 cfs @ 12.16 hrs HW=160.08' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.3 cfs @ 0.75 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.397 ac, 24.64% Impervious, Inflow Depth = 2.13" for 25-yr event
Inflow = 2.4 cfs @ 12.24 hrs, Volume= 0.248 af
Primary = 2.4 cfs @ 12.24 hrs, Volume= 0.248 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.13" for 25-yr event
Inflow = 0.0 cfs @ 15.18 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.18 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.90" for 25-yr event
Inflow = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af
Primary = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.96" for 25-yr event
Inflow = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af
Primary = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.74 hrs, Volume= 0.066 af
Primary = 0.1 cfs @ 12.74 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af
Primary = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.119 ac, 6.08% Impervious, Inflow Depth = 0.25" for 25-yr event
Inflow = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.754 ac, 0.00% Impervious, Inflow Depth = 1.65" for 25-yr event
Inflow = 0.8 cfs @ 12.39 hrs, Volume= 0.104 af
Primary = 0.8 cfs @ 12.39 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.3 cfs @ 12.45 hrs, Volume= 0.048 af
Primary = 0.3 cfs @ 12.45 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.32 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 15.32 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.57" for 25-yr event
Inflow = 0.2 cfs @ 12.64 hrs, Volume= 0.061 af
Primary = 0.2 cfs @ 12.64 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.76" for 25-yr event
Inflow = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af
Primary = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.65"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.1 cfs 0.014 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=2.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=2.3 cfs 0.273 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=2.17"
Flow Length=295' Tc=19.3 min CN=46 Runoff=1.9 cfs 0.224 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.215 ac 36.16% Impervious Runoff Depth=3.20"
Flow Length=204' Tc=9.5 min CN=55 Runoff=0.7 cfs 0.057 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=1.183 ac 22.55% Impervious Runoff Depth=4.03"
Flow Length=126' Tc=17.5 min CN=62 Runoff=3.9 cfs 0.397 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=1.02"
Flow Length=485' Tc=25.2 min CN=35 Runoff=1.2 cfs 0.222 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=1.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=2.9 cfs 0.494 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=0.119 ac 6.08% Impervious Runoff Depth=0.92"
Tc=6.0 min CN=34 Runoff=0.1 cfs 0.009 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=0.754 ac 0.00% Impervious Runoff Depth=3.20"
Flow Length=350' Tc=24.2 min CN=55 Runoff=1.7 cfs 0.201 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=1.63"
Flow Length=610' Tc=17.7 min CN=41 Runoff=1.0 cfs 0.123 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.1 cfs 0.031 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=1.52"
Flow Length=570' Tc=30.0 min CN=40 Runoff=1.0 cfs 0.162 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=1.84"
Flow Length=610' Tc=18.2 min CN=43 Runoff=7.2 cfs 0.881 af

Pond P7.1: Detention Basin Peak Elev=160.13' Storage=138 cf Inflow=0.7 cfs 0.057 af
Discarded=0.0 cfs 0.004 af Primary=0.7 cfs 0.054 af Outflow=0.7 cfs 0.057 af

Link DP7.1: Wetland 30 Inflow=4.5 cfs 0.451 af
Primary=4.5 cfs 0.451 af

Link DP7.10: Low Point Inflow=0.1 cfs 0.014 af
Primary=0.1 cfs 0.014 af

Link DP7.11: Low Point Inflow=2.3 cfs 0.273 af
Primary=2.3 cfs 0.273 af

Link DP7.12: Low Point Inflow=1.9 cfs 0.224 af
Primary=1.9 cfs 0.224 af

Link DP7.2: Wetland 32 Inflow=1.2 cfs 0.222 af
Primary=1.2 cfs 0.222 af

Link DP7.3: Low Point Inflow=2.9 cfs 0.494 af
Primary=2.9 cfs 0.494 af

Link DP7.4: Low Point Inflow=0.1 cfs 0.009 af
Primary=0.1 cfs 0.009 af

Link DP7.5: Wetland 31 Inflow=1.7 cfs 0.201 af
Primary=1.7 cfs 0.201 af

Link DP7.6: Low Point Inflow=1.0 cfs 0.123 af
Primary=1.0 cfs 0.123 af

Link DP7.7: Low Point Inflow=0.1 cfs 0.031 af
Primary=0.1 cfs 0.031 af

Link DP7.8: Low Point Inflow=1.0 cfs 0.162 af
Primary=1.0 cfs 0.162 af

Link DP7.9: Low Point Inflow=7.2 cfs 0.881 af
Primary=7.2 cfs 0.881 af

Total Runoff Area = 20.186 ac Runoff Volume = 3.088 af Average Runoff Depth = 1.84"
86.84% Pervious = 17.528 ac 13.16% Impervious = 2.657 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.1 cfs @ 12.61 hrs, Volume= 0.014 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.7 cfs @ 12.14 hrs, Volume= 0.057 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.095	30	Woods, Good, HSG A
0.215	55	Weighted Average
0.137		63.84% Pervious Area
0.078		36.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0840	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.9	106	0.0339	0.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	48	0.0395	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.5	204	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 3.9 cfs @ 12.24 hrs, Volume= 0.397 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.151	98	Paved parking, HSG A
0.115	98	Paved parking, HSG D
0.411	30	Woods, Good, HSG A
0.365	77	Woods, Good, HSG D
1.183	62	Weighted Average
0.916		77.45% Pervious Area
0.267		22.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	76	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.5	126	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 1.2 cfs @ 12.52 hrs, Volume= 0.222 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 0.1 cfs @ 12.14 hrs, Volume= 0.009 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.007	98	Paved parking, HSG A
0.112	30	Woods, Good, HSG A
0.119	34	Weighted Average
0.112		93.92% Pervious Area
0.007		6.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum of 6 min TC**

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 1.7 cfs @ 12.35 hrs, Volume= 0.201 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.298	30	Woods, Good, HSG A
0.302	77	Woods, Good, HSG D
0.754	55	Weighted Average
0.754		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0580	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.4	300	0.0370	0.48		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	350	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 1.0 cfs @ 12.30 hrs, Volume= 0.123 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.1 cfs @ 12.48 hrs, Volume= 0.031 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 1.0 cfs @ 12.52 hrs, Volume= 0.162 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.215 ac, 36.16% Impervious, Inflow Depth = 3.20" for 100-yr event
Inflow = 0.7 cfs @ 12.14 hrs, Volume= 0.057 af
Outflow = 0.7 cfs @ 12.15 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af
Primary = 0.7 cfs @ 12.15 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.13' @ 12.15 hrs Surf.Area= 277 sf Storage= 138 cf

Plug-Flow detention time= 74.1 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 74.4 min (931.1 - 856.7)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.15 hrs HW=160.13' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.7 cfs @ 12.15 hrs HW=160.13' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.7 cfs @ 0.97 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 1.397 ac, 24.64% Impervious, Inflow Depth = 3.87" for 100-yr event
Inflow = 4.5 cfs @ 12.23 hrs, Volume= 0.451 af
Primary = 4.5 cfs @ 12.23 hrs, Volume= 0.451 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.65" for 100-yr event
Inflow = 0.1 cfs @ 12.61 hrs, Volume= 0.014 af
Primary = 0.1 cfs @ 12.61 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 2.06" for 100-yr event
Inflow = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af
Primary = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 2.17" for 100-yr event
Inflow = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af
Primary = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 1.2 cfs @ 12.52 hrs, Volume= 0.222 af
Primary = 1.2 cfs @ 12.52 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af
Primary = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.4: Low Point

Inflow Area = 0.119 ac, 6.08% Impervious, Inflow Depth = 0.92" for 100-yr event
Inflow = 0.1 cfs @ 12.14 hrs, Volume= 0.009 af
Primary = 0.1 cfs @ 12.14 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.5: Wetland 31

Inflow Area = 0.754 ac, 0.00% Impervious, Inflow Depth = 3.20" for 100-yr event
Inflow = 1.7 cfs @ 12.35 hrs, Volume= 0.201 af
Primary = 1.7 cfs @ 12.35 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 1.0 cfs @ 12.30 hrs, Volume= 0.123 af
Primary = 1.0 cfs @ 12.30 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.1 cfs @ 12.48 hrs, Volume= 0.031 af
Primary = 0.1 cfs @ 12.48 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP7.8: Low Point

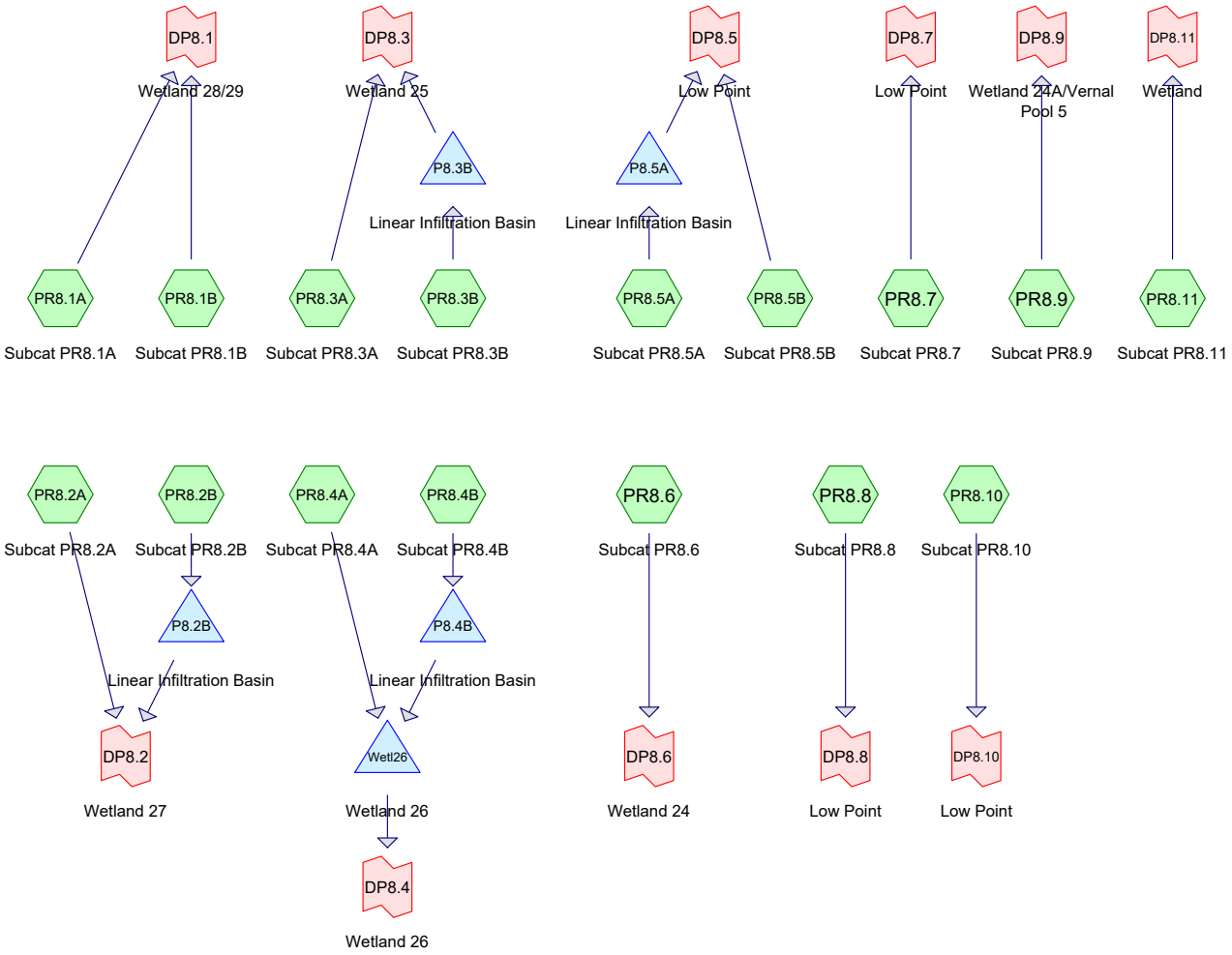
Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 1.52" for 100-yr event
Inflow = 1.0 cfs @ 12.52 hrs, Volume= 0.162 af
Primary = 1.0 cfs @ 12.52 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min

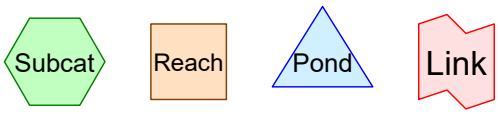
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 1.84" for 100-yr event
Inflow = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af
Primary = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Atten= 0%, Lag= 0.0 min

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





Routing Diagram for 14009.00-PR-Segment 8_ResponsetoComments_REV_Ful

Prepared by VHB, Printed 10/20/2020

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

Subcatchment PR8.10: Subcat PR8.10 Runoff Area=0.180 ac 35.32% Impervious Runoff Depth=0.00"
Tc=16.7 min CN=54 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.11: Subcat PR8.11 Runoff Area=0.922 ac 38.53% Impervious Runoff Depth=0.00"
Flow Length=145' Tc=8.9 min CN=56 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.1A: Subcat PR8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=0.00"
Flow Length=356' Tc=17.5 min CN=56 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.2A: Subcat PR8.2A Runoff Area=0.958 ac 23.15% Impervious Runoff Depth=0.00"
Flow Length=397' Tc=47.3 min CN=62 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.00"
Flow Length=535' Tc=40.7 min CN=35 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.3A: Subcat PR8.3A Runoff Area=0.319 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=101' Tc=13.8 min CN=42 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.3B: Subcat PR8.3B Runoff Area=2.249 ac 8.83% Impervious Runoff Depth=0.00"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=0.00"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.00"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=0.00"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.5B: Subcat PR8.5B Runoff Area=3.467 ac 51.20% Impervious Runoff Depth=0.00"
Flow Length=188' Tc=15.3 min CN=65 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.6: Subcat PR8.6 Runoff Area=1.380 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,270' Tc=62.3 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.7: Subcat PR8.7 Runoff Area=0.769 ac 49.41% Impervious Runoff Depth=0.00"
Flow Length=87' Tc=17.8 min CN=64 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.8: Subcat PR8.8 Runoff Area=0.909 ac 66.81% Impervious Runoff Depth=0.03"
Flow Length=418' Tc=34.8 min CN=75 Runoff=0.0 cfs 0.002 af

Subcatchment PR8.9: Subcat PR8.9 Runoff Area=0.938 ac 0.02% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=30.3 min CN=30 Runoff=0.0 cfs 0.000 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=158.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.4B: Linear Infiltration Basin Peak Elev=159.40' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=147.70' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond Wetl26: Wetland 26 Peak Elev=152.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.11: Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.2: Wetland 27 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.3: Wetland 25 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.8: Low Point Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 35.363 ac Runoff Volume = 0.002 af Average Runoff Depth = 0.00"
79.14% Pervious = 27.987 ac 20.86% Impervious = 7.377 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.063	30	Meadow, non-grazed, HSG A
0.064	98	Paved parking, HSG A
0.053	30	Woods, Good, HSG A
0.180	54	Weighted Average
0.117		64.68% Pervious Area
0.064		35.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7					**Direct Entry, Same as EX8.10**

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.026	30	Meadow, non-grazed, HSG A
0.306	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.541	30	Woods, Good, HSG A
0.922	56	Weighted Average
0.567		61.47% Pervious Area
0.355		38.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat PR8.1A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.127	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.335	30	Woods, Good, HSG A
0.291	77	Woods, Good, HSG D
0.958	62	Weighted Average
0.736		76.85% Pervious Area
0.222		23.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.1	188	0.0308	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.1	297	0.0110	1.57		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
40.7	535	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.194	30	Woods, Good, HSG A
0.063	77	Woods, Good, HSG D
0.319	42	Weighted Average
0.319		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment PR8.3B: Subcat PR8.3B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.233	30	Meadow, non-grazed, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
1.818	30	Woods, Good, HSG A
2.249	36	Weighted Average
2.051		91.17% Pervious Area
0.199		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG A
1.314	98	Roofs, HSG A
0.719	30	Woods, Good, HSG A
0.909	30	Woods, Good, HSG A
3.467	65	Weighted Average
1.692		48.80% Pervious Area
1.775		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.397	30	Meadow, non-grazed, HSG A
0.983	30	Woods, Good, HSG A
1.380	30	Weighted Average
1.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
34.4	1,220	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.3	1,270	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.179	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.769	64	Weighted Average
0.389		50.59% Pervious Area
0.380		49.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 0.0 cfs @ 14.81 hrs, Volume= 0.002 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.067	30	Meadow, non-grazed, HSG A
0.529	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.234	30	Woods, Good, HSG A
0.909	75	Weighted Average
0.302		33.19% Pervious Area
0.607		66.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.087	30	Meadow, non-grazed, HSG A
0.000	98	Paved parking, HSG A
0.851	30	Woods, Good, HSG A
0.938	30	Weighted Average
0.938		99.98% Pervious Area
0.000		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.00' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 158.50' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.4B: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.40' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	159.40'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.40' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.40' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 147.70' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2 Discarded 147.70' **2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 152.00' @ 0.00 hrs Surf.Area= 564 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	12,572 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	1,983	1,623	2,536
155.00	2,823	2,403	4,939
156.00	3,741	3,282	8,221
157.00	4,961	4,351	12,572

Device	Routing	Invert	Outlet Devices
#1	Primary	156.60'	**42.0' long x 13.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.180 ac, 35.32% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.922 ac, 38.53% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.332 ac, 13.77% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.3: Wetland 25

Inflow Area = 2.568 ac, 7.73% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.182 ac, 47.36% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.380 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.769 ac, 49.41% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.909 ac, 66.81% Impervious, Inflow Depth = 0.03" for 1" event
Inflow = 0.0 cfs @ 14.81 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 14.81 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.938 ac, 0.02% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR8.10: Subcat PR8.10 Runoff Area=0.180 ac 35.32% Impervious Runoff Depth=0.25"
Tc=16.7 min CN=54 Runoff=0.0 cfs 0.004 af

Subcatchment PR8.11: Subcat PR8.11 Runoff Area=0.922 ac 38.53% Impervious Runoff Depth=0.31"
Flow Length=145' Tc=8.9 min CN=56 Runoff=0.1 cfs 0.024 af

Subcatchment PR8.1A: Subcat PR8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=0.31"
Flow Length=356' Tc=17.5 min CN=56 Runoff=2.6 cfs 0.514 af

Subcatchment PR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.2A: Subcat PR8.2A Runoff Area=0.958 ac 23.15% Impervious Runoff Depth=0.52"
Flow Length=397' Tc=47.3 min CN=62 Runoff=0.2 cfs 0.042 af

Subcatchment PR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.00"
Flow Length=535' Tc=40.7 min CN=35 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.3A: Subcat PR8.3A Runoff Area=0.319 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=101' Tc=13.8 min CN=42 Runoff=0.0 cfs 0.001 af

Subcatchment PR8.3B: Subcat PR8.3B Runoff Area=2.249 ac 8.83% Impervious Runoff Depth=0.00"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=0.20"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.0 cfs 0.006 af

Subcatchment PR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.07"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.0 cfs 0.004 af

Subcatchment PR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=0.15"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.0 cfs 0.009 af

Subcatchment PR8.5B: Subcat PR8.5B Runoff Area=3.467 ac 51.20% Impervious Runoff Depth=0.65"
Flow Length=188' Tc=15.3 min CN=65 Runoff=1.6 cfs 0.188 af

Subcatchment PR8.6: Subcat PR8.6 Runoff Area=1.380 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,270' Tc=62.3 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.7: Subcat PR8.7 Runoff Area=0.769 ac 49.41% Impervious Runoff Depth=0.61"
Flow Length=87' Tc=17.8 min CN=64 Runoff=0.3 cfs 0.039 af

Subcatchment PR8.8: Subcat PR8.8 Runoff Area=0.909 ac 66.81% Impervious Runoff Depth=1.16"
Flow Length=418' Tc=34.8 min CN=75 Runoff=0.6 cfs 0.088 af

Subcatchment PR8.9: Subcat PR8.9 Runoff Area=0.938 ac 0.02% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=30.3 min CN=30 Runoff=0.0 cfs 0.000 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=158.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.4B: Linear Infiltration Basin Peak Elev=159.40' Storage=0 cf Inflow=0.0 cfs 0.004 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.004 af Outflow=0.0 cfs 0.004 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=147.75' Storage=8 cf Inflow=0.0 cfs 0.009 af
Discarded=0.0 cfs 0.009 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.009 af

Pond Wetl26: Wetland 26 Peak Elev=152.58' Storage=448 cf Inflow=0.0 cfs 0.010 af
Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=2.6 cfs 0.514 af
Primary=2.6 cfs 0.514 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP8.11: Wetland Inflow=0.1 cfs 0.024 af
Primary=0.1 cfs 0.024 af

Link DP8.2: Wetland 27 Inflow=0.2 cfs 0.042 af
Primary=0.2 cfs 0.042 af

Link DP8.3: Wetland 25 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=1.6 cfs 0.188 af
Primary=1.6 cfs 0.188 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.7: Low Point Inflow=0.3 cfs 0.039 af
Primary=0.3 cfs 0.039 af

Link DP8.8: Low Point Inflow=0.6 cfs 0.088 af
Primary=0.6 cfs 0.088 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 35.363 ac Runoff Volume = 0.918 af Average Runoff Depth = 0.31"
79.14% Pervious = 27.987 ac 20.86% Impervious = 7.377 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 0.0 cfs @ 12.50 hrs, Volume= 0.004 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.063	30	Meadow, non-grazed, HSG A
0.064	98	Paved parking, HSG A
0.053	30	Woods, Good, HSG A
0.180	54	Weighted Average
0.117		64.68% Pervious Area
0.064		35.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7					**Direct Entry, Same as EX8.10**

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 0.1 cfs @ 12.33 hrs, Volume= 0.024 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.026	30	Meadow, non-grazed, HSG A
0.306	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.541	30	Woods, Good, HSG A
0.922	56	Weighted Average
0.567		61.47% Pervious Area
0.355		38.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat PR8.1A

Runoff = 2.6 cfs @ 12.47 hrs, Volume= 0.514 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 0.2 cfs @ 12.78 hrs, Volume= 0.042 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.127	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.335	30	Woods, Good, HSG A
0.291	77	Woods, Good, HSG D
0.958	62	Weighted Average
0.736		76.85% Pervious Area
0.222		23.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.1	188	0.0308	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.1	297	0.0110	1.57		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
40.7	535	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 0.0 cfs @ 20.87 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.194	30	Woods, Good, HSG A
0.063	77	Woods, Good, HSG D
0.319	42	Weighted Average
0.319		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment PR8.3B: Subcat PR8.3B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.233	30	Meadow, non-grazed, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
1.818	30	Woods, Good, HSG A
2.249	36	Weighted Average
2.051		91.17% Pervious Area
0.199		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 0.006 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.0 cfs @ 12.66 hrs, Volume= 0.009 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 1.6 cfs @ 12.26 hrs, Volume= 0.188 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG A
1.314	98	Roofs, HSG A
0.719	30	Woods, Good, HSG A
0.909	30	Woods, Good, HSG A
3.467	65	Weighted Average
1.692		48.80% Pervious Area
1.775		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.397	30	Meadow, non-grazed, HSG A
0.983	30	Woods, Good, HSG A
1.380	30	Weighted Average
1.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
34.4	1,220	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.3	1,270	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 0.3 cfs @ 12.31 hrs, Volume= 0.039 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.179	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.769	64	Weighted Average
0.389		50.59% Pervious Area
0.380		49.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 0.6 cfs @ 12.52 hrs, Volume= 0.088 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.067	30	Meadow, non-grazed, HSG A
0.529	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.234	30	Woods, Good, HSG A
0.909	75	Weighted Average
0.302		33.19% Pervious Area
0.607		66.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.087	30	Meadow, non-grazed, HSG A
0.000	98	Paved parking, HSG A
0.851	30	Woods, Good, HSG A
0.938	30	Weighted Average
0.938		99.98% Pervious Area
0.000		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.00' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 158.50' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.4B: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.2 min
Discarded = 0.0 cfs @ 15.06 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.40' @ 15.06 hrs Surf.Area= 13 sf Storage= 0 cf

Plug-Flow detention time= 0.2 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (1,077.4 - 1,077.3)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	159.40'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.06 hrs HW=159.40' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 15.06 hrs HW=159.40' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.13 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.0 cfs @ 12.66 hrs, Volume= 0.009 af
Outflow = 0.0 cfs @ 13.02 hrs, Volume= 0.009 af, Atten= 11%, Lag= 21.8 min
Discarded = 0.0 cfs @ 13.02 hrs, Volume= 0.009 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 147.75' @ 13.02 hrs Surf.Area= 313 sf Storage= 8 cf

Plug-Flow detention time= 4.6 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 4.6 min (1,016.6 - 1,012.1)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2 Discarded 147.70' **2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.02 hrs HW=147.75' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.11" for 2-yr event
Inflow = 0.0 cfs @ 12.51 hrs, Volume= 0.010 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 152.58' @ 25.08 hrs Surf.Area= 971 sf Storage= 448 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	152.00'	12,572 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	1,983	1,623	2,536
155.00	2,823	2,403	4,939
156.00	3,741	3,282	8,221
157.00	4,961	4,351	12,572

Device	Routing	Invert	Outlet Devices
#1	Primary	156.60'	**42.0' long x 13.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 2.6 cfs @ 12.47 hrs, Volume= 0.514 af
Primary = 2.6 cfs @ 12.47 hrs, Volume= 0.514 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.180 ac, 35.32% Impervious, Inflow Depth = 0.25" for 2-yr event
Inflow = 0.0 cfs @ 12.50 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.50 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.922 ac, 38.53% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 0.1 cfs @ 12.33 hrs, Volume= 0.024 af
Primary = 0.1 cfs @ 12.33 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.332 ac, 13.77% Impervious, Inflow Depth = 0.22" for 2-yr event
Inflow = 0.2 cfs @ 12.78 hrs, Volume= 0.042 af
Primary = 0.2 cfs @ 12.78 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.3: Wetland 25

Inflow Area = 2.568 ac, 7.73% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 20.87 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 20.87 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.182 ac, 47.36% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 1.6 cfs @ 12.26 hrs, Volume= 0.188 af
Primary = 1.6 cfs @ 12.26 hrs, Volume= 0.188 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.380 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.769 ac, 49.41% Impervious, Inflow Depth = 0.61" for 2-yr event
Inflow = 0.3 cfs @ 12.31 hrs, Volume= 0.039 af
Primary = 0.3 cfs @ 12.31 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.909 ac, 66.81% Impervious, Inflow Depth = 1.16" for 2-yr event
Inflow = 0.6 cfs @ 12.52 hrs, Volume= 0.088 af
Primary = 0.6 cfs @ 12.52 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.938 ac, 0.02% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR8.10: Subcat PR8.10 Runoff Area=0.180 ac 35.32% Impervious Runoff Depth=0.97"
Tc=16.7 min CN=54 Runoff=0.1 cfs 0.015 af

Subcatchment PR8.11: Subcat PR8.11 Runoff Area=0.922 ac 38.53% Impervious Runoff Depth=1.09"
Flow Length=145' Tc=8.9 min CN=56 Runoff=0.9 cfs 0.084 af

Subcatchment PR8.1A: Subcat PR8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=1.09"
Flow Length=356' Tc=17.5 min CN=56 Runoff=14.9 cfs 1.804 af

Subcatchment PR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR8.2A: Subcat PR8.2A Runoff Area=0.958 ac 23.15% Impervious Runoff Depth=1.50"
Flow Length=397' Tc=47.3 min CN=62 Runoff=0.7 cfs 0.120 af

Subcatchment PR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.10"
Flow Length=535' Tc=40.7 min CN=35 Runoff=0.0 cfs 0.011 af

Subcatchment PR8.3A: Subcat PR8.3A Runoff Area=0.319 ac 0.00% Impervious Runoff Depth=0.34"
Flow Length=101' Tc=13.8 min CN=42 Runoff=0.0 cfs 0.009 af

Subcatchment PR8.3B: Subcat PR8.3B Runoff Area=2.249 ac 8.83% Impervious Runoff Depth=0.12"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.0 cfs 0.023 af

Subcatchment PR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=0.85"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.2 cfs 0.026 af

Subcatchment PR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.52"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.2 cfs 0.032 af

Subcatchment PR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=0.73"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.3 cfs 0.044 af

Subcatchment PR8.5B: Subcat PR8.5B Runoff Area=3.467 ac 51.20% Impervious Runoff Depth=1.72"
Flow Length=188' Tc=15.3 min CN=65 Runoff=5.0 cfs 0.497 af

Subcatchment PR8.6: Subcat PR8.6 Runoff Area=1.380 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=1,270' Tc=62.3 min CN=30 Runoff=0.0 cfs 0.001 af

Subcatchment PR8.7: Subcat PR8.7 Runoff Area=0.769 ac 49.41% Impervious Runoff Depth=1.65"
Flow Length=87' Tc=17.8 min CN=64 Runoff=1.0 cfs 0.105 af

Subcatchment PR8.8: Subcat PR8.8 Runoff Area=0.909 ac 66.81% Impervious Runoff Depth=2.53"
Flow Length=418' Tc=34.8 min CN=75 Runoff=1.4 cfs 0.192 af

Subcatchment PR8.9: Subcat PR8.9 Runoff Area=0.938 ac 0.02% Impervious Runoff Depth=0.01"
Flow Length=147' Tc=30.3 min CN=30 Runoff=0.0 cfs 0.001 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.35' Storage=282 cf Inflow=0.0 cfs 0.011 af
Discarded=0.0 cfs 0.011 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.011 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=158.84' Storage=568 cf Inflow=0.0 cfs 0.023 af
Discarded=0.0 cfs 0.023 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.023 af

Pond P8.4B: Linear Infiltration Basin Peak Elev=159.44' Storage=3 cf Inflow=0.2 cfs 0.032 af
Discarded=0.0 cfs 0.001 af Primary=0.2 cfs 0.031 af Outflow=0.2 cfs 0.032 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=148.02' Storage=339 cf Inflow=0.3 cfs 0.044 af
Discarded=0.1 cfs 0.044 af Primary=0.0 cfs 0.000 af Outflow=0.1 cfs 0.044 af

Pond Wetl26: Wetland 26 Peak Elev=153.97' Storage=2,480 cf Inflow=0.3 cfs 0.057 af
Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=14.9 cfs 1.805 af
Primary=14.9 cfs 1.805 af

Link DP8.10: Low Point Inflow=0.1 cfs 0.015 af
Primary=0.1 cfs 0.015 af

Link DP8.11: Wetland Inflow=0.9 cfs 0.084 af
Primary=0.9 cfs 0.084 af

Link DP8.2: Wetland 27 Inflow=0.7 cfs 0.120 af
Primary=0.7 cfs 0.120 af

Link DP8.3: Wetland 25 Inflow=0.0 cfs 0.009 af
Primary=0.0 cfs 0.009 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=5.0 cfs 0.497 af
Primary=5.0 cfs 0.497 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP8.7: Low Point Inflow=1.0 cfs 0.105 af
Primary=1.0 cfs 0.105 af

Link DP8.8: Low Point Inflow=1.4 cfs 0.192 af
Primary=1.4 cfs 0.192 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Total Runoff Area = 35.363 ac Runoff Volume = 2.964 af Average Runoff Depth = 1.01"
79.14% Pervious = 27.987 ac 20.86% Impervious = 7.377 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 0.1 cfs @ 12.28 hrs, Volume= 0.015 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.063	30	Meadow, non-grazed, HSG A
0.064	98	Paved parking, HSG A
0.053	30	Woods, Good, HSG A
0.180	54	Weighted Average
0.117		64.68% Pervious Area
0.064		35.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7					**Direct Entry, Same as EX8.10**

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 0.9 cfs @ 12.15 hrs, Volume= 0.084 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.026	30	Meadow, non-grazed, HSG A
0.306	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.541	30	Woods, Good, HSG A
0.922	56	Weighted Average
0.567		61.47% Pervious Area
0.355		38.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat PR8.1A

Runoff = 14.9 cfs @ 12.28 hrs, Volume= 1.804 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 23.65 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 0.7 cfs @ 12.72 hrs, Volume= 0.120 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.127	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.335	30	Woods, Good, HSG A
0.291	77	Woods, Good, HSG D
0.958	62	Weighted Average
0.736		76.85% Pervious Area
0.222		23.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.0 cfs @ 15.51 hrs, Volume= 0.011 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.1	188	0.0308	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.1	297	0.0110	1.57		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
40.7	535	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 0.0 cfs @ 12.49 hrs, Volume= 0.009 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.194	30	Woods, Good, HSG A
0.063	77	Woods, Good, HSG D
0.319	42	Weighted Average
0.319		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment PR8.3B: Subcat PR8.3B

Runoff = 0.0 cfs @ 15.32 hrs, Volume= 0.023 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.233	30	Meadow, non-grazed, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
1.818	30	Woods, Good, HSG A
2.249	36	Weighted Average
2.051		91.17% Pervious Area
0.199		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.2 cfs @ 12.24 hrs, Volume= 0.026 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.2 cfs @ 12.47 hrs, Volume= 0.032 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.3 cfs @ 12.38 hrs, Volume= 0.044 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 5.0 cfs @ 12.22 hrs, Volume= 0.497 af, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG A
1.314	98	Roofs, HSG A
0.719	30	Woods, Good, HSG A
0.909	30	Woods, Good, HSG A
3.467	65	Weighted Average
1.692		48.80% Pervious Area
1.775		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 0.0 cfs @ 24.02 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.397	30	Meadow, non-grazed, HSG A
0.983	30	Woods, Good, HSG A
1.380	30	Weighted Average
1.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
34.4	1,220	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.3	1,270	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 1.0 cfs @ 12.26 hrs, Volume= 0.105 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.179	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.769	64	Weighted Average
0.389		50.59% Pervious Area
0.380		49.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 1.4 cfs @ 12.49 hrs, Volume= 0.192 af, Depth= 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.067	30	Meadow, non-grazed, HSG A
0.529	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.234	30	Woods, Good, HSG A
0.909	75	Weighted Average
0.302		33.19% Pervious Area
0.607		66.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.0 cfs @ 23.60 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.087	30	Meadow, non-grazed, HSG A
0.000	98	Paved parking, HSG A
0.851	30	Woods, Good, HSG A
0.938	30	Weighted Average
0.938		99.98% Pervious Area
0.000		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.51 hrs, Volume= 0.011 af
Outflow = 0.0 cfs @ 24.41 hrs, Volume= 0.011 af, Atten= 63%, Lag= 533.8 min
Discarded = 0.0 cfs @ 24.41 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.35' @ 24.41 hrs Surf.Area= 1,614 sf Storage= 282 cf

Plug-Flow detention time= 545.6 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 545.7 min (1,655.9 - 1,110.2)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.41 hrs HW=162.35' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.12" for 10-yr event
Inflow = 0.0 cfs @ 15.32 hrs, Volume= 0.023 af
Outflow = 0.0 cfs @ 24.41 hrs, Volume= 0.023 af, Atten= 64%, Lag= 545.5 min
Discarded = 0.0 cfs @ 24.41 hrs, Volume= 0.023 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 158.84' @ 24.41 hrs Surf.Area= 3,385 sf Storage= 568 cf

Plug-Flow detention time= 532.3 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 532.4 min (1,626.3 - 1,093.9)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.41 hrs HW=158.84' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.4B: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.52" for 10-yr event
Inflow = 0.2 cfs @ 12.47 hrs, Volume= 0.032 af
Outflow = 0.2 cfs @ 12.48 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.0 cfs @ 12.48 hrs, Volume= 0.001 af
Primary = 0.2 cfs @ 12.48 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.44' @ 12.48 hrs Surf.Area= 162 sf Storage= 3 cf

Plug-Flow detention time= 0.2 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (947.7 - 947.5)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	159.40'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.48 hrs HW=159.44' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.48 hrs HW=159.44' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.46 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 0.3 cfs @ 12.38 hrs, Volume= 0.044 af
Outflow = 0.1 cfs @ 12.91 hrs, Volume= 0.044 af, Atten= 58%, Lag= 31.8 min
Discarded = 0.1 cfs @ 12.91 hrs, Volume= 0.044 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 148.02' @ 12.91 hrs Surf.Area= 2,105 sf Storage= 339 cf

Plug-Flow detention time= 27.9 min calculated for 0.044 af (100% of inflow)
Center-of-Mass det. time= 27.9 min (952.7 - 924.8)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2 Discarded 147.70' **2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.91 hrs HW=148.02' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.62" for 10-yr event
Inflow = 0.3 cfs @ 12.38 hrs, Volume= 0.057 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 153.97' @ 25.08 hrs Surf.Area= 1,963 sf Storage= 2,480 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	152.00'	12,572 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	1,983	1,623	2,536
155.00	2,823	2,403	4,939
156.00	3,741	3,282	8,221
157.00	4,961	4,351	12,572

Device	Routing	Invert	Outlet Devices
#1	Primary	156.60'	**42.0' long x 13.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 1.08" for 10-yr event
Inflow = 14.9 cfs @ 12.28 hrs, Volume= 1.805 af
Primary = 14.9 cfs @ 12.28 hrs, Volume= 1.805 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.180 ac, 35.32% Impervious, Inflow Depth = 0.97" for 10-yr event
Inflow = 0.1 cfs @ 12.28 hrs, Volume= 0.015 af
Primary = 0.1 cfs @ 12.28 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.922 ac, 38.53% Impervious, Inflow Depth = 1.09" for 10-yr event
Inflow = 0.9 cfs @ 12.15 hrs, Volume= 0.084 af
Primary = 0.9 cfs @ 12.15 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.332 ac, 13.77% Impervious, Inflow Depth = 0.62" for 10-yr event
Inflow = 0.7 cfs @ 12.72 hrs, Volume= 0.120 af
Primary = 0.7 cfs @ 12.72 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.3: Wetland 25

Inflow Area = 2.568 ac, 7.73% Impervious, Inflow Depth = 0.04" for 10-yr event
Inflow = 0.0 cfs @ 12.49 hrs, Volume= 0.009 af
Primary = 0.0 cfs @ 12.49 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.182 ac, 47.36% Impervious, Inflow Depth = 1.43" for 10-yr event
Inflow = 5.0 cfs @ 12.22 hrs, Volume= 0.497 af
Primary = 5.0 cfs @ 12.22 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.380 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 24.02 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 24.02 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.769 ac, 49.41% Impervious, Inflow Depth = 1.65" for 10-yr event
Inflow = 1.0 cfs @ 12.26 hrs, Volume= 0.105 af
Primary = 1.0 cfs @ 12.26 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.909 ac, 66.81% Impervious, Inflow Depth = 2.53" for 10-yr event
Inflow = 1.4 cfs @ 12.49 hrs, Volume= 0.192 af
Primary = 1.4 cfs @ 12.49 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.938 ac, 0.02% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.60 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 23.60 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR8.10: Subcat PR8.10 Runoff Area=0.180 ac 35.32% Impervious Runoff Depth=1.57"
Tc=16.7 min CN=54 Runoff=0.2 cfs 0.024 af

Subcatchment PR8.11: Subcat PR8.11 Runoff Area=0.922 ac 38.53% Impervious Runoff Depth=1.73"
Flow Length=145' Tc=8.9 min CN=56 Runoff=1.5 cfs 0.133 af

Subcatchment PR8.1A: Subcat PR8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=1.73"
Flow Length=356' Tc=17.5 min CN=56 Runoff=26.0 cfs 2.861 af

Subcatchment PR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.002 af

Subcatchment PR8.2A: Subcat PR8.2A Runoff Area=0.958 ac 23.15% Impervious Runoff Depth=2.25"
Flow Length=397' Tc=47.3 min CN=62 Runoff=1.1 cfs 0.180 af

Subcatchment PR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.30"
Flow Length=535' Tc=40.7 min CN=35 Runoff=0.1 cfs 0.034 af

Subcatchment PR8.3A: Subcat PR8.3A Runoff Area=0.319 ac 0.00% Impervious Runoff Depth=0.70"
Flow Length=101' Tc=13.8 min CN=42 Runoff=0.1 cfs 0.019 af

Subcatchment PR8.3B: Subcat PR8.3B Runoff Area=2.249 ac 8.83% Impervious Runoff Depth=0.35"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.1 cfs 0.066 af

Subcatchment PR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=1.41"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.4 cfs 0.044 af

Subcatchment PR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.96"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.4 cfs 0.059 af

Subcatchment PR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=1.26"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.6 cfs 0.075 af

Subcatchment PR8.5B: Subcat PR8.5B Runoff Area=3.467 ac 51.20% Impervious Runoff Depth=2.52"
Flow Length=188' Tc=15.3 min CN=65 Runoff=7.5 cfs 0.728 af

Subcatchment PR8.6: Subcat PR8.6 Runoff Area=1.380 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=1,270' Tc=62.3 min CN=30 Runoff=0.0 cfs 0.011 af

Subcatchment PR8.7: Subcat PR8.7 Runoff Area=0.769 ac 49.41% Impervious Runoff Depth=2.43"
Flow Length=87' Tc=17.8 min CN=64 Runoff=1.5 cfs 0.156 af

Subcatchment PR8.8: Subcat PR8.8 Runoff Area=0.909 ac 66.81% Impervious Runoff Depth=3.48"
Flow Length=418' Tc=34.8 min CN=75 Runoff=2.0 cfs 0.264 af

Subcatchment PR8.9: Subcat PR8.9 Runoff Area=0.938 ac 0.02% Impervious Runoff Depth=0.10"
Flow Length=147' Tc=30.3 min CN=30 Runoff=0.0 cfs 0.008 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.51' Storage=606 cf Inflow=0.1 cfs 0.034 af
Discarded=0.0 cfs 0.022 af Primary=0.0 cfs 0.012 af Outflow=0.0 cfs 0.034 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=159.01' Storage=1,297 cf Inflow=0.1 cfs 0.066 af
Discarded=0.0 cfs 0.048 af Primary=0.1 cfs 0.018 af Outflow=0.1 cfs 0.066 af

Pond P8.4B: Linear Infiltration Basin Peak Elev=159.46' Storage=9 cf Inflow=0.4 cfs 0.059 af
Discarded=0.0 cfs 0.002 af Primary=0.4 cfs 0.057 af Outflow=0.4 cfs 0.059 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=148.20' Storage=813 cf Inflow=0.6 cfs 0.075 af
Discarded=0.2 cfs 0.075 af Primary=0.0 cfs 0.000 af Outflow=0.2 cfs 0.075 af

Pond Wetl26: Wetland 26 Peak Elev=154.80' Storage=4,385 cf Inflow=0.7 cfs 0.101 af
Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=26.0 cfs 2.864 af
Primary=26.0 cfs 2.864 af

Link DP8.10: Low Point Inflow=0.2 cfs 0.024 af
Primary=0.2 cfs 0.024 af

Link DP8.11: Wetland Inflow=1.5 cfs 0.133 af
Primary=1.5 cfs 0.133 af

Link DP8.2: Wetland 27 Inflow=1.1 cfs 0.192 af
Primary=1.1 cfs 0.192 af

Link DP8.3: Wetland 25 Inflow=0.1 cfs 0.036 af
Primary=0.1 cfs 0.036 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=7.5 cfs 0.728 af
Primary=7.5 cfs 0.728 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.011 af
Primary=0.0 cfs 0.011 af

Link DP8.7: Low Point Inflow=1.5 cfs 0.156 af
Primary=1.5 cfs 0.156 af

Link DP8.8: Low Point Inflow=2.0 cfs 0.264 af
Primary=2.0 cfs 0.264 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Total Runoff Area = 35.363 ac Runoff Volume = 4.662 af Average Runoff Depth = 1.58"
79.14% Pervious = 27.987 ac 20.86% Impervious = 7.377 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 0.2 cfs @ 12.26 hrs, Volume= 0.024 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.063	30	Meadow, non-grazed, HSG A
0.064	98	Paved parking, HSG A
0.053	30	Woods, Good, HSG A
0.180	54	Weighted Average
0.117		64.68% Pervious Area
0.064		35.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7					**Direct Entry, Same as EX8.10**

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 1.5 cfs @ 12.14 hrs, Volume= 0.133 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.026	30	Meadow, non-grazed, HSG A
0.306	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.541	30	Woods, Good, HSG A
0.922	56	Weighted Average
0.567		61.47% Pervious Area
0.355		38.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat PR8.1A

Runoff = 26.0 cfs @ 12.27 hrs, Volume= 2.861 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 15.63 hrs, Volume= 0.002 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 1.1 cfs @ 12.67 hrs, Volume= 0.180 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.127	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.335	30	Woods, Good, HSG A
0.291	77	Woods, Good, HSG D
0.958	62	Weighted Average
0.736		76.85% Pervious Area
0.222		23.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.1 cfs @ 13.15 hrs, Volume= 0.034 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.1	188	0.0308	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.1	297	0.0110	1.57		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
40.7	535	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 0.1 cfs @ 12.37 hrs, Volume= 0.019 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.194	30	Woods, Good, HSG A
0.063	77	Woods, Good, HSG D
0.319	42	Weighted Average
0.319		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment PR8.3B: Subcat PR8.3B

Runoff = 0.1 cfs @ 13.14 hrs, Volume= 0.066 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.233	30	Meadow, non-grazed, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
1.818	30	Woods, Good, HSG A
2.249	36	Weighted Average
2.051		91.17% Pervious Area
0.199		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.4 cfs @ 12.22 hrs, Volume= 0.044 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.4 cfs @ 12.35 hrs, Volume= 0.059 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.6 cfs @ 12.32 hrs, Volume= 0.075 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 7.5 cfs @ 12.22 hrs, Volume= 0.728 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG A
1.314	98	Roofs, HSG A
0.719	30	Woods, Good, HSG A
0.909	30	Woods, Good, HSG A
3.467	65	Weighted Average
1.692		48.80% Pervious Area
1.775		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 0.0 cfs @ 16.13 hrs, Volume= 0.011 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.397	30	Meadow, non-grazed, HSG A
0.983	30	Woods, Good, HSG A
1.380	30	Weighted Average
1.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
34.4	1,220	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.3	1,270	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 1.5 cfs @ 12.25 hrs, Volume= 0.156 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.179	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.769	64	Weighted Average
0.389		50.59% Pervious Area
0.380		49.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 2.0 cfs @ 12.49 hrs, Volume= 0.264 af, Depth= 3.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.067	30	Meadow, non-grazed, HSG A
0.529	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.234	30	Woods, Good, HSG A
0.909	75	Weighted Average
0.302		33.19% Pervious Area
0.607		66.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.0 cfs @ 15.59 hrs, Volume= 0.008 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.087	30	Meadow, non-grazed, HSG A
0.000	98	Paved parking, HSG A
0.851	30	Woods, Good, HSG A
0.938	30	Weighted Average
0.938		99.98% Pervious Area
0.000		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 13.15 hrs, Volume= 0.034 af
Outflow = 0.0 cfs @ 16.27 hrs, Volume= 0.034 af, Atten= 37%, Lag= 187.6 min
Discarded = 0.0 cfs @ 16.27 hrs, Volume= 0.022 af
Primary = 0.0 cfs @ 16.27 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.51' @ 16.27 hrs Surf.Area= 2,351 sf Storage= 606 cf

Plug-Flow detention time= 529.9 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 530.1 min (1,556.7 - 1,026.6)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 16.27 hrs HW=162.51' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 16.27 hrs HW=162.51' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.27 fps)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.35" for 25-yr event
Inflow = 0.1 cfs @ 13.14 hrs, Volume= 0.066 af
Outflow = 0.1 cfs @ 16.78 hrs, Volume= 0.066 af, Atten= 51%, Lag= 218.8 min
Discarded = 0.0 cfs @ 16.78 hrs, Volume= 0.048 af
Primary = 0.1 cfs @ 16.78 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.01' @ 16.78 hrs Surf.Area= 5,091 sf Storage= 1,297 cf

Plug-Flow detention time= 600.1 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 600.1 min (1,620.6 - 1,020.4)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 16.78 hrs HW=159.01' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 16.78 hrs HW=159.01' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.20 fps)

Summary for Pond P8.4B: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.96" for 25-yr event
Inflow = 0.4 cfs @ 12.35 hrs, Volume= 0.059 af
Outflow = 0.4 cfs @ 12.36 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.36 hrs, Volume= 0.002 af
Primary = 0.4 cfs @ 12.36 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.46' @ 12.36 hrs Surf.Area= 294 sf Storage= 9 cf

Plug-Flow detention time= 0.3 min calculated for 0.059 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (919.7 - 919.4)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	159.40'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.36 hrs HW=159.46' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 12.36 hrs HW=159.46' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.62 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 0.6 cfs @ 12.32 hrs, Volume= 0.075 af
Outflow = 0.2 cfs @ 12.97 hrs, Volume= 0.075 af, Atten= 69%, Lag= 38.8 min
Discarded = 0.2 cfs @ 12.97 hrs, Volume= 0.075 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 148.20' @ 12.97 hrs Surf.Area= 3,256 sf Storage= 813 cf

Plug-Flow detention time= 46.6 min calculated for 0.075 af (100% of inflow)
Center-of-Mass det. time= 46.6 min (949.9 - 903.3)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2 Discarded 147.70' **2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.2 cfs @ 12.97 hrs HW=148.20' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.2 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 1.10" for 25-yr event
Inflow = 0.7 cfs @ 12.30 hrs, Volume= 0.101 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 154.80' @ 25.08 hrs Surf.Area= 2,653 sf Storage= 4,385 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	152.00'	12,572 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	1,983	1,623	2,536
155.00	2,823	2,403	4,939
156.00	3,741	3,282	8,221
157.00	4,961	4,351	12,572

Device	Routing	Invert	Outlet Devices
#1	Primary	156.60'	**42.0' long x 13.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 1.71" for 25-yr event
Inflow = 26.0 cfs @ 12.27 hrs, Volume= 2.864 af
Primary = 26.0 cfs @ 12.27 hrs, Volume= 2.864 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.180 ac, 35.32% Impervious, Inflow Depth = 1.57" for 25-yr event
Inflow = 0.2 cfs @ 12.26 hrs, Volume= 0.024 af
Primary = 0.2 cfs @ 12.26 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.922 ac, 38.53% Impervious, Inflow Depth = 1.73" for 25-yr event
Inflow = 1.5 cfs @ 12.14 hrs, Volume= 0.133 af
Primary = 1.5 cfs @ 12.14 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.332 ac, 13.77% Impervious, Inflow Depth = 0.99" for 25-yr event
Inflow = 1.1 cfs @ 12.67 hrs, Volume= 0.192 af
Primary = 1.1 cfs @ 12.67 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.3: Wetland 25

Inflow Area = 2.568 ac, 7.73% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.1 cfs @ 12.37 hrs, Volume= 0.036 af
Primary = 0.1 cfs @ 12.37 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.182 ac, 47.36% Impervious, Inflow Depth = 2.09" for 25-yr event
Inflow = 7.5 cfs @ 12.22 hrs, Volume= 0.728 af
Primary = 7.5 cfs @ 12.22 hrs, Volume= 0.728 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.380 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 16.13 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 16.13 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.769 ac, 49.41% Impervious, Inflow Depth = 2.43" for 25-yr event
Inflow = 1.5 cfs @ 12.25 hrs, Volume= 0.156 af
Primary = 1.5 cfs @ 12.25 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

Inflow Area = 0.909 ac, 66.81% Impervious, Inflow Depth = 3.48" for 25-yr event
Inflow = 2.0 cfs @ 12.49 hrs, Volume= 0.264 af
Primary = 2.0 cfs @ 12.49 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.938 ac, 0.02% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.59 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 15.59 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR8.10: Subcat PR8.10 Runoff Area=0.180 ac 35.32% Impervious Runoff Depth=3.09"
Tc=16.7 min CN=54 Runoff=0.5 cfs 0.046 af

Subcatchment PR8.11: Subcat PR8.11 Runoff Area=0.922 ac 38.53% Impervious Runoff Depth=3.32"
Flow Length=145' Tc=8.9 min CN=56 Runoff=3.2 cfs 0.255 af

Subcatchment PR8.1A: Subcat PR8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=3.32"
Flow Length=356' Tc=17.5 min CN=56 Runoff=53.2 cfs 5.476 af

Subcatchment PR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.013 af

Subcatchment PR8.2A: Subcat PR8.2A Runoff Area=0.958 ac 23.15% Impervious Runoff Depth=4.03"
Flow Length=397' Tc=47.3 min CN=62 Runoff=2.0 cfs 0.322 af

Subcatchment PR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=1.02"
Flow Length=535' Tc=40.7 min CN=35 Runoff=0.5 cfs 0.117 af

Subcatchment PR8.3A: Subcat PR8.3A Runoff Area=0.319 ac 0.00% Impervious Runoff Depth=1.73"
Flow Length=101' Tc=13.8 min CN=42 Runoff=0.4 cfs 0.046 af

Subcatchment PR8.3B: Subcat PR8.3B Runoff Area=2.249 ac 8.83% Impervious Runoff Depth=1.11"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.9 cfs 0.209 af

Subcatchment PR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=2.85"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.9 cfs 0.088 af

Subcatchment PR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=2.17"
Flow Length=724' Tc=18.8 min CN=46 Runoff=1.1 cfs 0.132 af

Subcatchment PR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=2.62"
Flow Length=891' Tc=19.4 min CN=50 Runoff=1.4 cfs 0.156 af

Subcatchment PR8.5B: Subcat PR8.5B Runoff Area=3.467 ac 51.20% Impervious Runoff Depth=4.38"
Flow Length=188' Tc=15.3 min CN=65 Runoff=13.3 cfs 1.267 af

Subcatchment PR8.6: Subcat PR8.6 Runoff Area=1.380 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=1,270' Tc=62.3 min CN=30 Runoff=0.1 cfs 0.065 af

Subcatchment PR8.7: Subcat PR8.7 Runoff Area=0.769 ac 49.41% Impervious Runoff Depth=4.27"
Flow Length=87' Tc=17.8 min CN=64 Runoff=2.7 cfs 0.273 af

Subcatchment PR8.8: Subcat PR8.8 Runoff Area=0.909 ac 66.81% Impervious Runoff Depth=5.59"
Flow Length=418' Tc=34.8 min CN=75 Runoff=3.1 cfs 0.423 af

Subcatchment PR8.9: Subcat PR8.9 Runoff Area=0.938 ac 0.02% Impervious Runoff Depth=0.57"
Flow Length=147' Tc=30.3 min CN=30 Runoff=0.1 cfs 0.044 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.57' Storage=737 cf Inflow=0.5 cfs 0.117 af
Discarded=0.0 cfs 0.023 af Primary=0.4 cfs 0.093 af Outflow=0.4 cfs 0.117 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=159.05' Storage=1,499 cf Inflow=0.9 cfs 0.209 af
Discarded=0.0 cfs 0.050 af Primary=0.7 cfs 0.159 af Outflow=0.7 cfs 0.209 af

Pond P8.4B: Linear Infiltration Basin Peak Elev=159.53' Storage=38 cf Inflow=1.1 cfs 0.132 af
Discarded=0.0 cfs 0.003 af Primary=1.1 cfs 0.129 af Outflow=1.1 cfs 0.132 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=148.44' Storage=1,843 cf Inflow=1.4 cfs 0.156 af
Discarded=0.3 cfs 0.128 af Primary=0.3 cfs 0.028 af Outflow=0.6 cfs 0.156 af

Pond Wetl26: Wetland 26 Peak Elev=156.32' Storage=9,478 cf Inflow=1.9 cfs 0.218 af
Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=53.2 cfs 5.489 af
Primary=53.2 cfs 5.489 af

Link DP8.10: Low Point Inflow=0.5 cfs 0.046 af
Primary=0.5 cfs 0.046 af

Link DP8.11: Wetland Inflow=3.2 cfs 0.255 af
Primary=3.2 cfs 0.255 af

Link DP8.2: Wetland 27 Inflow=2.1 cfs 0.415 af
Primary=2.1 cfs 0.415 af

Link DP8.3: Wetland 25 Inflow=0.8 cfs 0.205 af
Primary=0.8 cfs 0.205 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=13.3 cfs 1.295 af
Primary=13.3 cfs 1.295 af

Link DP8.6: Wetland 24 Inflow=0.1 cfs 0.065 af
Primary=0.1 cfs 0.065 af

Link DP8.7: Low Point Inflow=2.7 cfs 0.273 af
Primary=2.7 cfs 0.273 af

Link DP8.8: Low Point Inflow=3.1 cfs 0.423 af
Primary=3.1 cfs 0.423 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.1 cfs 0.044 af
Primary=0.1 cfs 0.044 af

Total Runoff Area = 35.363 ac Runoff Volume = 8.934 af Average Runoff Depth = 3.03"
79.14% Pervious = 27.987 ac 20.86% Impervious = 7.377 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 0.5 cfs @ 12.24 hrs, Volume= 0.046 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.063	30	Meadow, non-grazed, HSG A
0.064	98	Paved parking, HSG A
0.053	30	Woods, Good, HSG A
0.180	54	Weighted Average
0.117		64.68% Pervious Area
0.064		35.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7					**Direct Entry, Same as EX8.10**

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 3.2 cfs @ 12.13 hrs, Volume= 0.255 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.026	30	Meadow, non-grazed, HSG A
0.306	98	Paved parking, HSG A
0.028	98	Paved roads w/curbs & sewers, HSG A
0.020	98	Roofs, HSG A
0.541	30	Woods, Good, HSG A
0.922	56	Weighted Average
0.567		61.47% Pervious Area
0.355		38.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat PR8.1A

Runoff = 53.2 cfs @ 12.25 hrs, Volume= 5.476 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 12.77 hrs, Volume= 0.013 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 2.0 cfs @ 12.67 hrs, Volume= 0.322 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.127	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.335	30	Woods, Good, HSG A
0.291	77	Woods, Good, HSG D
0.958	62	Weighted Average
0.736		76.85% Pervious Area
0.222		23.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	50	0.0040	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.0	347	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
47.3	397	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.5 cfs @ 12.75 hrs, Volume= 0.117 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.1	188	0.0308	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.1	297	0.0110	1.57		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
40.7	535	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 0.4 cfs @ 12.22 hrs, Volume= 0.046 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.194	30	Woods, Good, HSG A
0.063	77	Woods, Good, HSG D
0.319	42	Weighted Average
0.319		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	51	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	101	Total			

Summary for Subcatchment PR8.3B: Subcat PR8.3B

Runoff = 0.9 cfs @ 12.83 hrs, Volume= 0.209 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.233	30	Meadow, non-grazed, HSG A
0.053	98	Paved parking, HSG A
0.146	98	Roofs, HSG A
1.818	30	Woods, Good, HSG A
2.249	36	Weighted Average
2.051		91.17% Pervious Area
0.199		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.9 cfs @ 12.21 hrs, Volume= 0.088 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 1.1 cfs @ 12.30 hrs, Volume= 0.132 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 1.4 cfs @ 12.29 hrs, Volume= 0.156 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 13.3 cfs @ 12.22 hrs, Volume= 1.267 af, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG A
1.314	98	Roofs, HSG A
0.719	30	Woods, Good, HSG A
0.909	30	Woods, Good, HSG A
3.467	65	Weighted Average
1.692		48.80% Pervious Area
1.775		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 0.1 cfs @ 13.30 hrs, Volume= 0.065 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.397	30	Meadow, non-grazed, HSG A
0.983	30	Woods, Good, HSG A
1.380	30	Weighted Average
1.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
34.4	1,220	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.3	1,270	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 2.7 cfs @ 12.24 hrs, Volume= 0.273 af, Depth= 4.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG A
0.104	98	Roofs, HSG A
0.179	30	Woods, Good, HSG A
0.186	30	Woods, Good, HSG A
0.769	64	Weighted Average
0.389		50.59% Pervious Area
0.380		49.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 3.1 cfs @ 12.49 hrs, Volume= 0.423 af, Depth= 5.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.067	30	Meadow, non-grazed, HSG A
0.529	98	Paved parking, HSG A
0.079	98	Roofs, HSG A
0.234	30	Woods, Good, HSG A
0.909	75	Weighted Average
0.302		33.19% Pervious Area
0.607		66.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.1 cfs @ 12.73 hrs, Volume= 0.044 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.087	30	Meadow, non-grazed, HSG A
0.000	98	Paved parking, HSG A
0.851	30	Woods, Good, HSG A
0.938	30	Weighted Average
0.938		99.98% Pervious Area
0.000		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.5 cfs @ 12.75 hrs, Volume= 0.117 af
Outflow = 0.4 cfs @ 12.99 hrs, Volume= 0.117 af, Atten= 15%, Lag= 14.5 min
Discarded = 0.0 cfs @ 12.99 hrs, Volume= 0.023 af
Primary = 0.4 cfs @ 12.99 hrs, Volume= 0.093 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.57' @ 12.99 hrs Surf.Area= 2,526 sf Storage= 737 cf

Plug-Flow detention time= 174.5 min calculated for 0.117 af (100% of inflow)
Center-of-Mass det. time= 174.5 min (1,132.2 - 957.7)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.99 hrs HW=162.57' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 12.99 hrs HW=162.57' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.63 fps)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 1.11" for 100-yr event
Inflow = 0.9 cfs @ 12.83 hrs, Volume= 0.209 af
Outflow = 0.7 cfs @ 13.10 hrs, Volume= 0.209 af, Atten= 15%, Lag= 16.1 min
Discarded = 0.0 cfs @ 13.10 hrs, Volume= 0.050 af
Primary = 0.7 cfs @ 13.10 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.05' @ 13.10 hrs Surf.Area= 5,329 sf Storage= 1,499 cf

Plug-Flow detention time= 208.6 min calculated for 0.209 af (100% of inflow)
Center-of-Mass det. time= 208.9 min (1,166.8 - 958.0)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.10 hrs HW=159.05' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.7 cfs @ 13.10 hrs HW=159.05' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.7 cfs @ 0.52 fps)

Summary for Pond P8.4B: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 2.17" for 100-yr event
Inflow = 1.1 cfs @ 12.30 hrs, Volume= 0.132 af
Outflow = 1.1 cfs @ 12.31 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.31 hrs, Volume= 0.003 af
Primary = 1.1 cfs @ 12.31 hrs, Volume= 0.129 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.53' @ 12.31 hrs Surf.Area= 592 sf Storage= 38 cf

Plug-Flow detention time= 0.4 min calculated for 0.132 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (889.4 - 889.1)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	159.40'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.31 hrs HW=159.53' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=1.1 cfs @ 12.31 hrs HW=159.53' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 1.1 cfs @ 0.87 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 2.62" for 100-yr event
Inflow = 1.4 cfs @ 12.29 hrs, Volume= 0.156 af
Outflow = 0.6 cfs @ 12.73 hrs, Volume= 0.156 af, Atten= 58%, Lag= 25.9 min
Discarded = 0.3 cfs @ 12.73 hrs, Volume= 0.128 af
Primary = 0.3 cfs @ 12.73 hrs, Volume= 0.028 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 148.44' @ 12.73 hrs Surf.Area= 5,194 sf Storage= 1,843 cf

Plug-Flow detention time= 53.7 min calculated for 0.156 af (100% of inflow)
Center-of-Mass det. time= 53.7 min (931.9 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2 Discarded 147.70' **2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.3 cfs @ 12.73 hrs HW=148.44' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.3 cfs)

Primary OutFlow Max=0.3 cfs @ 12.73 hrs HW=148.44' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.3 cfs @ 1.22 fps)

Summary for Pond Wetl26: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 2.37" for 100-yr event
Inflow = 1.9 cfs @ 12.26 hrs, Volume= 0.218 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 156.32' @ 25.08 hrs Surf.Area= 4,131 sf Storage= 9,478 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	152.00'	12,572 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	564	0	0
153.00	1,262	913	913
154.00	1,983	1,623	2,536
155.00	2,823	2,403	4,939
156.00	3,741	3,282	8,221
157.00	4,961	4,351	12,572

Device	Routing	Invert	Outlet Devices
#1	Primary	156.60'	**42.0' long x 13.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=152.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 3.28" for 100-yr event
Inflow = 53.2 cfs @ 12.25 hrs, Volume= 5.489 af
Primary = 53.2 cfs @ 12.25 hrs, Volume= 5.489 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.10: Low Point

Inflow Area = 0.180 ac, 35.32% Impervious, Inflow Depth = 3.09" for 100-yr event
Inflow = 0.5 cfs @ 12.24 hrs, Volume= 0.046 af
Primary = 0.5 cfs @ 12.24 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.11: Wetland

Inflow Area = 0.922 ac, 38.53% Impervious, Inflow Depth = 3.32" for 100-yr event
Inflow = 3.2 cfs @ 12.13 hrs, Volume= 0.255 af
Primary = 3.2 cfs @ 12.13 hrs, Volume= 0.255 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.2: Wetland 27

Inflow Area = 2.332 ac, 13.77% Impervious, Inflow Depth = 2.14" for 100-yr event
Inflow = 2.1 cfs @ 12.86 hrs, Volume= 0.415 af
Primary = 2.1 cfs @ 12.86 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.3: Wetland 25

Inflow Area = 2.568 ac, 7.73% Impervious, Inflow Depth = 0.96" for 100-yr event
Inflow = 0.8 cfs @ 13.09 hrs, Volume= 0.205 af
Primary = 0.8 cfs @ 13.09 hrs, Volume= 0.205 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.5: Low Point

Inflow Area = 4.182 ac, 47.36% Impervious, Inflow Depth = 3.72" for 100-yr event
Inflow = 13.3 cfs @ 12.22 hrs, Volume= 1.295 af
Primary = 13.3 cfs @ 12.22 hrs, Volume= 1.295 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.6: Wetland 24

Inflow Area = 1.380 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.1 cfs @ 13.30 hrs, Volume= 0.065 af
Primary = 0.1 cfs @ 13.30 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.7: Low Point

Inflow Area = 0.769 ac, 49.41% Impervious, Inflow Depth = 4.27" for 100-yr event
Inflow = 2.7 cfs @ 12.24 hrs, Volume= 0.273 af
Primary = 2.7 cfs @ 12.24 hrs, Volume= 0.273 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP8.8: Low Point

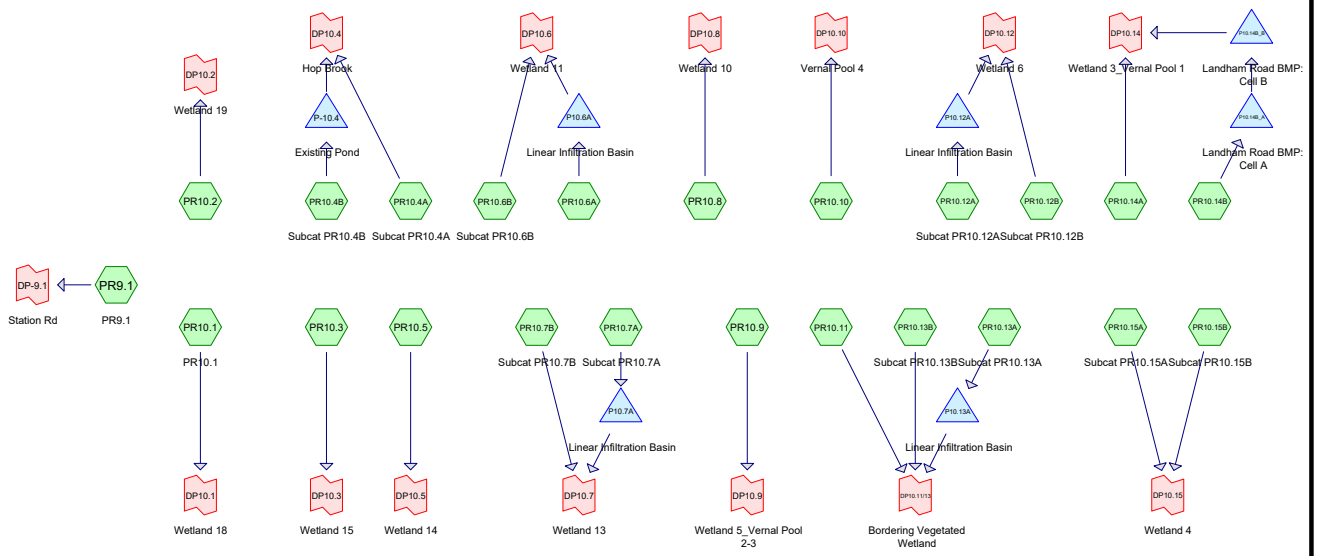
Inflow Area = 0.909 ac, 66.81% Impervious, Inflow Depth = 5.59" for 100-yr event
Inflow = 3.1 cfs @ 12.49 hrs, Volume= 0.423 af
Primary = 3.1 cfs @ 12.49 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min

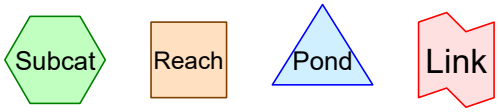
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.938 ac, 0.02% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.1 cfs @ 12.73 hrs, Volume= 0.044 af
Primary = 0.1 cfs @ 12.73 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

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





Routing Diagram for PR_Segment_9-10_ResponsetoComments_REV_Full
Prepared by VHB, Printed 10/16/2020
HydroCAD® 10.10-3a s/n 01038 © 2020 HydroCAD Software Solutions LLC

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

Subcatchment PR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=0.08"
Flow Length=250' Tc=19.0 min CN=80 Runoff=0.0 cfs 0.008 af

Subcatchment PR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=0.08"
Tc=6.0 min CN=80 Runoff=0.0 cfs 0.001 af

Subcatchment PR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=0.00"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.00"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=0.00"
Flow Length=250' Tc=14.7 min CN=58 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=0.00"
Flow Length=375' Tc=8.0 min CN=70 Runoff=0.0 cfs 0.001 af

Subcatchment PR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=0.02"
Tc=6.0 min CN=74 Runoff=0.0 cfs 0.001 af

Subcatchment PR10.14A: Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=0.00"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=0.00"
Flow Length=664' Tc=11.9 min CN=56 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.00"
Flow Length=681' Tc=20.3 min CN=39 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=0.00"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.2: Runoff Area=0.517 ac 3.08% Impervious Runoff Depth=0.06"
Tc=10.9 min CN=78 Runoff=0.0 cfs 0.003 af

Subcatchment PR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=0.07"
Flow Length=61' Tc=10.1 min CN=79 Runoff=0.0 cfs 0.006 af

Subcatchment PR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=0.00"
Flow Length=411' Tc=11.3 min CN=63 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=0.00"
Flow Length=516' Tc=13.4 min CN=63 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=0.06"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.0 cfs 0.004 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.00"
Flow Length=266' Tc=14.6 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=0.00"
Flow Length=363' Tc=9.9 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=0.00"
Flow Length=502' Tc=15.5 min CN=47 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=0.07"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=0.00"
Flow Length=384' Tc=7.6 min CN=63 Runoff=0.0 cfs 0.000 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=0.15"
Flow Length=727' Tc=29.7 min CN=84 Runoff=0.2 cfs 0.028 af

Pond P-10.4: Existing Pond Peak Elev=124.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=136.61' Storage=0 cf Inflow=0.0 cfs 0.001 af
Discarded=0.0 cfs 0.001 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.001 af

Pond P10.14B_A: Landham Road BMP: Cell A Peak Elev=141.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.14B_B: Landham Road BMP: Cell B Peak Elev=140.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=128.90' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.20' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link DP-9.1: Station Rd Inflow=0.2 cfs 0.028 af
Primary=0.2 cfs 0.028 af

Link DP10.1: Wetland 18 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP10.10: Vernal Pool 4 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP10.12: Wetland 6 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.2: Wetland 19 Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP10.3: Wetland 15 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP10.4: Hop Brook Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.5: Wetland 14 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP10.6: Wetland 11 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.7: Wetland 13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 36.761 ac Runoff Volume = 0.051 af Average Runoff Depth = 0.02"
84.22% Pervious = 30.962 ac 15.78% Impervious = 5.799 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 0.0 cfs @ 12.52 hrs, Volume= 0.008 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

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

Summary for Subcatchment PR10.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 0.0 cfs @ 21.36 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.292	76	Gravel roads, HSG A
0.065	30	Meadow, non-grazed, HSG A
0.586	98	Paved parking, HSG A
0.395	30	Woods, Good, HSG A
1.350	70	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.3	22	0.2640	1.28		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.3	303	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.0	375	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 0.0 cfs @ 14.78 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.241	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

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

Summary for Subcatchment PR10.14A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.391	39	>75% Grass cover, Good, HSG A
0.031	30	Meadow, non-grazed, HSG A
0.547	98	Paved parking, HSG A
3.101	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment PR10.14B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.872	39	>75% Grass cover, Good, HSG A
0.044	76	Gravel roads, HSG A
0.135	30	Meadow, non-grazed, HSG A
0.967	98	Paved parking, HSG A
0.898	30	Woods, Good, HSG A
2.916	56	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.2120	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	11	0.3270	2.86		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.1	603	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.9	664	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.998	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.415	98	Paved parking, HSG A
2.774	30	Woods, Good, HSG A
4.280	39	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.015	30	Meadow, non-grazed, HSG A
0.043	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.016	98	Paved parking, HSG D
0.438	77	Woods, Good, HSG D
0.517	78	Weighted Average
0.501		96.92% Pervious Area
0.016		3.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9					**Direct Entry, Same as EX10.2**

Summary for Subcatchment PR10.3:

Runoff = 0.0 cfs @ 12.42 hrs, Volume= 0.006 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	202	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	14	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.6	266	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.433	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.214	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.8	219	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.1	198	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.5	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.0 cfs @ 12.44 hrs, Volume= 0.000 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.009	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 0.2 cfs @ 12.54 hrs, Volume= 0.028 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.050	39	>75% Grass cover, Good, HSG A
0.060	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.099	78	Meadow, non-grazed, HSG D
0.646	98	Paved parking, HSG A
0.697	98	Paved parking, HSG D
0.151	30	Woods, Good, HSG A
0.424	77	Woods, Good, HSG D
2.211	84	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P-10.4: Existing Pond

Inflow Area = 3.037 ac, 15.14% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 124.00' @ 0.00 hrs Surf.Area= 181 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.50' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 21.36 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 21.55 hrs, Volume= 0.001 af, Atten= 0%, Lag= 11.2 min
Discarded = 0.0 cfs @ 21.55 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.61' @ 21.55 hrs Surf.Area= 35 sf Storage= 0 cf

Plug-Flow detention time= 4.9 min calculated for 0.001 af (100% of inflow)
Center-of-Mass det. time= 4.9 min (1,210.3 - 1,205.4)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 21.55 hrs HW=136.61' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.60' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.14B_A: Landham Road BMP: Cell A

Inflow Area = 2.916 ac, 33.15% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 141.00' @ 0.00 hrs Surf.Area= 103 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	141.00'	323 cf	**Cell A (West) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
141.00	103	0	0
141.50	300	101	101
141.90	490	158	259
142.00	790	64	323

Device	Routing	Invert	Outlet Devices
#1	Primary	141.90'	**6.5' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86

#2 Discarded 141.00' **1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=141.00' (Free Discharge)
└**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=141.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.14B_B: Landham Road BMP: Cell B

Inflow Area =	2.916 ac, 33.15% Impervious, Inflow Depth = 0.00" for 1" event				
Inflow =	0.0 cfs @	0.00 hrs, Volume=	0.000 af		
Outflow =	0.0 cfs @	0.00 hrs, Volume=	0.000 af, Atten= 0%, Lag= 0.0 min		
Discarded =	0.0 cfs @	0.00 hrs, Volume=	0.000 af		
Primary =	0.0 cfs @	0.00 hrs, Volume=	0.000 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 140.00' @ 0.00 hrs Surf.Area= 201 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	448 cf	**Cell B (Eastern) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
140.00	201	0	0
140.50	420	155	155
141.00	750	293	448

Device	Routing	Invert	Outlet Devices
#1	Primary	140.50'	**3.0' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86
#2	Discarded	140.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=140.00' (Free Discharge)
└**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=140.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area =	1.526 ac, 5.07% Impervious, Inflow Depth = 0.00" for 1" event				
Inflow =	0.0 cfs @	0.00 hrs, Volume=	0.000 af		
Outflow =	0.0 cfs @	0.00 hrs, Volume=	0.000 af, Atten= 0%, Lag= 0.0 min		
Primary =	0.0 cfs @	0.00 hrs, Volume=	0.000 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 128.90' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area = 0.835 ac, 8.41% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.20' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50

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
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=127.20' (Free Discharge)
└**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=127.20' (Free Discharge)
└**1=Broad-Crested Rectangular Weir**(Controls 0.0 cfs)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 0.15" for 1" event
Inflow = 0.2 cfs @ 12.54 hrs, Volume= 0.028 af
Primary = 0.2 cfs @ 12.54 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 0.08" for 1" event
Inflow = 0.0 cfs @ 12.52 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.52 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 0.08" for 1" event
Inflow = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 14.78 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 14.78 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.517 ac, 3.08% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 12.47 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 0.07" for 1" event
Inflow = 0.0 cfs @ 12.42 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 12.42 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 0.01" for 1" event
Inflow = 0.0 cfs @ 12.44 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 12.44 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=1.48"
Flow Length=250' Tc=19.0 min CN=80 Runoff=1.4 cfs 0.148 af

Subcatchment PR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=1.48"
Tc=6.0 min CN=80 Runoff=0.1 cfs 0.010 af

Subcatchment PR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=0.20"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.1 cfs 0.019 af

Subcatchment PR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.01"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.0 cfs 0.000 af

Subcatchment PR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=0.38"
Flow Length=250' Tc=14.7 min CN=58 Runoff=0.2 cfs 0.027 af

Subcatchment PR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=0.89"
Flow Length=375' Tc=8.0 min CN=70 Runoff=1.2 cfs 0.100 af

Subcatchment PR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=1.10"
Tc=6.0 min CN=74 Runoff=0.5 cfs 0.034 af

Subcatchment PR10.14A: Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=0.01"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.0 cfs 0.002 af

Subcatchment PR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=0.31"
Flow Length=664' Tc=11.9 min CN=56 Runoff=0.4 cfs 0.076 af

Subcatchment PR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.00"
Flow Length=681' Tc=20.3 min CN=39 Runoff=0.0 cfs 0.001 af

Subcatchment PR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=0.15"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.0 cfs 0.002 af

Subcatchment PR10.2: Runoff Area=0.517 ac 3.08% Impervious Runoff Depth=1.35"
Tc=10.9 min CN=78 Runoff=0.7 cfs 0.058 af

Subcatchment PR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=1.41"
Flow Length=61' Tc=10.1 min CN=79 Runoff=1.4 cfs 0.116 af

Subcatchment PR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=0.56"
Flow Length=411' Tc=11.3 min CN=63 Runoff=0.7 cfs 0.085 af

Subcatchment PR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=0.56"
Flow Length=516' Tc=13.4 min CN=63 Runoff=1.2 cfs 0.143 af

Subcatchment PR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=1.35"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.8 cfs 0.094 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.00"
Flow Length=266' Tc=14.6 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=0.20"
Flow Length=363' Tc=9.9 min CN=52 Runoff=0.3 cfs 0.074 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=0.09"
Flow Length=502' Tc=15.5 min CN=47 Runoff=0.0 cfs 0.006 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=1.41"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.1 cfs 0.010 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=0.56"
Flow Length=384' Tc=7.6 min CN=63 Runoff=1.3 cfs 0.133 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=1.77"
Flow Length=727' Tc=29.7 min CN=84 Runoff=2.6 cfs 0.326 af

Pond P-10.4: Existing Pond Peak Elev=127.61' Storage=6,225 cf Inflow=1.2 cfs 0.143 af
Outflow=0.0 cfs 0.000 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.51' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.22' Storage=497 cf Inflow=1.2 cfs 0.100 af
Discarded=0.0 cfs 0.038 af Primary=1.0 cfs 0.062 af Outflow=1.1 cfs 0.100 af

Pond P10.14B_A: Landham Road BMP: Cell A Peak Elev=141.96' Storage=295 cf Inflow=0.4 cfs 0.076 af
Discarded=0.0 cfs 0.019 af Primary=0.4 cfs 0.057 af Outflow=0.4 cfs 0.076 af

Pond P10.14B_B: Landham Road BMP: Cell B Peak Elev=140.59' Storage=194 cf Inflow=0.4 cfs 0.057 af
Discarded=0.0 cfs 0.014 af Primary=0.3 cfs 0.044 af Outflow=0.3 cfs 0.057 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=128.90' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.67' Storage=173 cf Inflow=0.0 cfs 0.006 af
Discarded=0.0 cfs 0.006 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.006 af

Link DP-9.1: Station Rd Inflow=2.6 cfs 0.326 af
Primary=2.6 cfs 0.326 af

Link DP10.1: Wetland 18 Inflow=1.4 cfs 0.148 af
Primary=1.4 cfs 0.148 af

Link DP10.10: Vernal Pool 4 Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=1.4 cfs 0.115 af
Primary=1.4 cfs 0.115 af

Link DP10.12: Wetland 6 Inflow=0.2 cfs 0.027 af
Primary=0.2 cfs 0.027 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=0.3 cfs 0.046 af
Primary=0.3 cfs 0.046 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP10.2: Wetland 19 Inflow=0.7 cfs 0.058 af
Primary=0.7 cfs 0.058 af

Link DP10.3: Wetland 15 Inflow=1.4 cfs 0.116 af
Primary=1.4 cfs 0.116 af

Link DP10.4: Hop Brook Inflow=0.7 cfs 0.085 af
Primary=0.7 cfs 0.085 af

Link DP10.5: Wetland 14 Inflow=0.8 cfs 0.094 af
Primary=0.8 cfs 0.094 af

Link DP10.6: Wetland 11 Inflow=0.3 cfs 0.074 af
Primary=0.3 cfs 0.074 af

Link DP10.7: Wetland 13 Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=1.3 cfs 0.133 af
Primary=1.3 cfs 0.133 af

Total Runoff Area = 36.761 ac Runoff Volume = 1.463 af Average Runoff Depth = 0.48"
84.22% Pervious = 30.962 ac 15.78% Impervious = 5.799 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 1.4 cfs @ 12.27 hrs, Volume= 0.148 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

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

Summary for Subcatchment PR10.11:

Runoff = 0.1 cfs @ 12.47 hrs, Volume= 0.019 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.0 cfs @ 21.92 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 0.2 cfs @ 12.37 hrs, Volume= 0.027 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 1.2 cfs @ 12.13 hrs, Volume= 0.100 af, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.292	76	Gravel roads, HSG A
0.065	30	Meadow, non-grazed, HSG A
0.586	98	Paved parking, HSG A
0.395	30	Woods, Good, HSG A
1.350	70	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.3	22	0.2640	1.28		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.3	303	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.0	375	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 0.5 cfs @ 12.10 hrs, Volume= 0.034 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.241	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

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

Summary for Subcatchment PR10.14A:

Runoff = 0.0 cfs @ 23.20 hrs, Volume= 0.002 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.391	39	>75% Grass cover, Good, HSG A
0.031	30	Meadow, non-grazed, HSG A
0.547	98	Paved parking, HSG A
3.101	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment PR10.14B:

Runoff = 0.4 cfs @ 12.39 hrs, Volume= 0.076 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.872	39	>75% Grass cover, Good, HSG A
0.044	76	Gravel roads, HSG A
0.135	30	Meadow, non-grazed, HSG A
0.967	98	Paved parking, HSG A
0.898	30	Woods, Good, HSG A
2.916	56	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.2120	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	11	0.3270	2.86		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.1	603	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.9	664	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 0.0 cfs @ 24.03 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.998	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.415	98	Paved parking, HSG A
2.774	30	Woods, Good, HSG A
4.280	39	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.0 cfs @ 12.54 hrs, Volume= 0.002 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.015	30	Meadow, non-grazed, HSG A
0.043	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 0.7 cfs @ 12.16 hrs, Volume= 0.058 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.016	98	Paved parking, HSG D
0.438	77	Woods, Good, HSG D
0.517	78	Weighted Average
0.501		96.92% Pervious Area
0.016		3.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9					**Direct Entry, Same as EX10.2**

Summary for Subcatchment PR10.3:

Runoff = 1.4 cfs @ 12.15 hrs, Volume= 0.116 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 0.7 cfs @ 12.19 hrs, Volume= 0.085 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 1.2 cfs @ 12.23 hrs, Volume= 0.143 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	202	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	14	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.6	266	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 0.3 cfs @ 12.45 hrs, Volume= 0.074 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.433	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.214	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.0 cfs @ 14.76 hrs, Volume= 0.006 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.8	219	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.1	198	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.5	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 1.3 cfs @ 12.13 hrs, Volume= 0.133 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.009	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 2.6 cfs @ 12.41 hrs, Volume= 0.326 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.050	39	>75% Grass cover, Good, HSG A
0.060	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.099	78	Meadow, non-grazed, HSG D
0.646	98	Paved parking, HSG A
0.697	98	Paved parking, HSG D
0.151	30	Woods, Good, HSG A
0.424	77	Woods, Good, HSG D
2.211	84	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P-10.4: Existing Pond

Inflow Area = 3.037 ac, 15.14% Impervious, Inflow Depth = 0.56" for 2-yr event
Inflow = 1.2 cfs @ 12.23 hrs, Volume= 0.143 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.61' @ 24.76 hrs Surf.Area= 3,886 sf Storage= 6,225 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 21.92 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 22.07 hrs, Volume= 0.000 af, Atten= 0%, Lag= 8.8 min
Discarded = 0.0 cfs @ 22.07 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.51' @ 22.07 hrs Surf.Area= 22 sf Storage= 0 cf

Plug-Flow detention time= 3.7 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 3.7 min (1,232.4 - 1,228.7)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 22.07 hrs HW=136.51' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 0.89" for 2-yr event
Inflow = 1.2 cfs @ 12.13 hrs, Volume= 0.100 af
Outflow = 1.1 cfs @ 12.17 hrs, Volume= 0.100 af, Atten= 9%, Lag= 2.7 min
Discarded = 0.0 cfs @ 12.17 hrs, Volume= 0.038 af
Primary = 1.0 cfs @ 12.17 hrs, Volume= 0.062 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.22' @ 12.17 hrs Surf.Area= 1,633 sf Storage= 497 cf

Plug-Flow detention time= 63.9 min calculated for 0.100 af (100% of inflow)
Center-of-Mass det. time= 63.9 min (939.2 - 875.3)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.17 hrs HW=137.22' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=1.0 cfs @ 12.17 hrs HW=137.22' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.0 cfs @ 0.85 fps)

Summary for Pond P10.14B_A: Landham Road BMP: Cell A

Inflow Area = 2.916 ac, 33.15% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 0.4 cfs @ 12.39 hrs, Volume= 0.076 af
Outflow = 0.4 cfs @ 12.44 hrs, Volume= 0.076 af, Atten= 3%, Lag= 3.5 min
Discarded = 0.0 cfs @ 12.44 hrs, Volume= 0.019 af
Primary = 0.4 cfs @ 12.44 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 141.96' @ 12.44 hrs Surf.Area= 675 sf Storage= 295 cf

Plug-Flow detention time= 77.7 min calculated for 0.076 af (100% of inflow)
Center-of-Mass det. time= 77.8 min (1,024.8 - 947.0)

Volume	Invert	Avail.Storage	Storage Description
#1	141.00'	323 cf	**Cell A (West) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
141.00	103	0	0
141.50	300	101	101
141.90	490	158	259
142.00	790	64	323

Device	Routing	Invert	Outlet Devices
#1	Primary	141.90'	**6.5' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86

#2	Discarded	141.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.44 hrs HW=141.96' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 12.44 hrs HW=141.96' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.94 fps)

Summary for Pond P10.14B_B: Landham Road BMP: Cell B

Inflow Area =	2.916 ac,	33.15% Impervious,	Inflow Depth =	0.24"	for 2-yr event
Inflow =	0.4 cfs @	12.44 hrs,	Volume=	0.057 af	
Outflow =	0.3 cfs @	12.58 hrs,	Volume=	0.057 af,	Atten= 19%, Lag= 8.1 min
Discarded =	0.0 cfs @	12.58 hrs,	Volume=	0.014 af	
Primary =	0.3 cfs @	12.58 hrs,	Volume=	0.044 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 140.59' @ 12.58 hrs Surf.Area= 478 sf Storage= 194 cf

Plug-Flow detention time= 56.5 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 56.6 min (997.5 - 940.9)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	448 cf	**Cell B (Eastern) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
140.00	201	0	0
140.50	420	155	155
141.00	750	293	448

Device	Routing	Invert	Outlet Devices
#1	Primary	140.50'	**3.0' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86
#2	Discarded	140.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.58 hrs HW=140.59' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.3 cfs @ 12.58 hrs HW=140.59' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.3 cfs @ 1.12 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area =	1.526 ac,	5.07% Impervious,	Inflow Depth =	0.00"	for 2-yr event
Inflow =	0.0 cfs @	0.00 hrs,	Volume=	0.000 af	
Outflow =	0.0 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.0 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 128.90' @ 0.00 hrs Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area =	0.835 ac,	8.41% Impervious,	Inflow Depth =	0.09"	for 2-yr event
Inflow =	0.0 cfs @	14.76 hrs,	Volume=	0.006 af	
Outflow =	0.0 cfs @	24.16 hrs,	Volume=	0.006 af,	Atten= 71%, Lag= 564.0 min
Discarded =	0.0 cfs @	24.16 hrs,	Volume=	0.006 af	
Primary =	0.0 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.67' @ 24.16 hrs Surf.Area= 742 sf Storage= 173 cf

Plug-Flow detention time= 723.6 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 723.8 min (1,778.4 - 1,054.6)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50

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
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.16 hrs HW=127.67' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=127.20' (Free Discharge)
└**1=Broad-Crested Rectangular Weir**(Controls 0.0 cfs)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 1.77" for 2-yr event
Inflow = 2.6 cfs @ 12.41 hrs, Volume= 0.326 af
Primary = 2.6 cfs @ 12.41 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 1.48" for 2-yr event
Inflow = 1.4 cfs @ 12.27 hrs, Volume= 0.148 af
Primary = 1.4 cfs @ 12.27 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 1.48" for 2-yr event
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 0.48" for 2-yr event
Inflow = 1.4 cfs @ 12.16 hrs, Volume= 0.115 af
Primary = 1.4 cfs @ 12.16 hrs, Volume= 0.115 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 0.28" for 2-yr event
Inflow = 0.2 cfs @ 12.37 hrs, Volume= 0.027 af
Primary = 0.2 cfs @ 12.37 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 0.08" for 2-yr event
Inflow = 0.3 cfs @ 12.58 hrs, Volume= 0.046 af
Primary = 0.3 cfs @ 12.58 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 12.54 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 12.54 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.517 ac, 3.08% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 0.7 cfs @ 12.16 hrs, Volume= 0.058 af
Primary = 0.7 cfs @ 12.16 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 1.41" for 2-yr event
Inflow = 1.4 cfs @ 12.15 hrs, Volume= 0.116 af
Primary = 1.4 cfs @ 12.15 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 0.21" for 2-yr event
Inflow = 0.7 cfs @ 12.19 hrs, Volume= 0.085 af
Primary = 0.7 cfs @ 12.19 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af
Primary = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.3 cfs @ 12.45 hrs, Volume= 0.074 af
Primary = 0.3 cfs @ 12.45 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 0.13" for 2-yr event
Inflow = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 0.56" for 2-yr event
Inflow = 1.3 cfs @ 12.13 hrs, Volume= 0.133 af
Primary = 1.3 cfs @ 12.13 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=2.98"
Flow Length=250' Tc=19.0 min CN=80 Runoff=2.9 cfs 0.298 af

Subcatchment PR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=2.98"
Tc=6.0 min CN=80 Runoff=0.3 cfs 0.021 af

Subcatchment PR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=0.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.7 cfs 0.080 af

Subcatchment PR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.30"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.0 cfs 0.008 af

Subcatchment PR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=1.22"
Flow Length=250' Tc=14.7 min CN=58 Runoff=0.8 cfs 0.087 af

Subcatchment PR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=2.11"
Flow Length=375' Tc=8.0 min CN=70 Runoff=3.1 cfs 0.237 af

Subcatchment PR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=2.44"
Tc=6.0 min CN=74 Runoff=1.1 cfs 0.076 af

Subcatchment PR10.14A: Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=0.26"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.2 cfs 0.087 af

Subcatchment PR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=1.09"
Flow Length=664' Tc=11.9 min CN=56 Runoff=2.5 cfs 0.266 af

Subcatchment PR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.22"
Flow Length=681' Tc=20.3 min CN=39 Runoff=0.2 cfs 0.079 af

Subcatchment PR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=0.73"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.1 cfs 0.009 af

Subcatchment PR10.2: Runoff Area=0.517 ac 3.08% Impervious Runoff Depth=2.80"
Tc=10.9 min CN=78 Runoff=1.4 cfs 0.120 af

Subcatchment PR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=2.89"
Flow Length=61' Tc=10.1 min CN=79 Runoff=2.9 cfs 0.237 af

Subcatchment PR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=1.57"
Flow Length=411' Tc=11.3 min CN=63 Runoff=2.6 cfs 0.238 af

Subcatchment PR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=1.57"
Flow Length=516' Tc=13.4 min CN=63 Runoff=4.1 cfs 0.398 af

Subcatchment PR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=2.80"
Flow Length=118' Tc=23.4 min CN=78 Runoff=1.7 cfs 0.195 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.10"
Flow Length=266' Tc=14.6 min CN=35 Runoff=0.0 cfs 0.012 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=0.85"
Flow Length=363' Tc=9.9 min CN=52 Runoff=2.8 cfs 0.317 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=0.57"
Flow Length=502' Tc=15.5 min CN=47 Runoff=0.2 cfs 0.040 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=2.89"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.2 cfs 0.020 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.0 cfs 0.007 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=1.57"
Flow Length=384' Tc=7.6 min CN=63 Runoff=4.6 cfs 0.370 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=3.36"
Flow Length=727' Tc=29.7 min CN=84 Runoff=4.9 cfs 0.620 af

Pond P-10.4: Existing Pond Peak Elev=129.18' Storage=17,292 cf Inflow=4.1 cfs 0.398 af
Outflow=0.0 cfs 0.000 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.72' Storage=52 cf Inflow=0.0 cfs 0.008 af
Discarded=0.0 cfs 0.008 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.008 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.34' Storage=709 cf Inflow=3.1 cfs 0.237 af
Discarded=0.0 cfs 0.043 af Primary=2.9 cfs 0.194 af Outflow=2.9 cfs 0.237 af

Pond P10.14B_A: Landham Road BMP: Cell A Peak Elev=142.13' Storage=323 cf Inflow=2.5 cfs 0.266 af
Discarded=0.0 cfs 0.021 af Primary=2.6 cfs 0.245 af Outflow=2.7 cfs 0.266 af

Pond P10.14B_B: Landham Road BMP: Cell B Peak Elev=140.86' Storage=350 cf Inflow=2.6 cfs 0.245 af
Discarded=0.0 cfs 0.015 af Primary=2.5 cfs 0.231 af Outflow=2.5 cfs 0.245 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=129.35' Storage=533 cf Inflow=0.0 cfs 0.012 af
Outflow=0.0 cfs 0.000 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.74' Storage=231 cf Inflow=0.2 cfs 0.040 af
Discarded=0.0 cfs 0.008 af Primary=0.2 cfs 0.032 af Outflow=0.2 cfs 0.040 af

Link DP-9.1: Station Rd Inflow=4.9 cfs 0.620 af
Primary=4.9 cfs 0.620 af

Link DP10.1: Wetland 18 Inflow=2.9 cfs 0.298 af
Primary=2.9 cfs 0.298 af

Link DP10.10: Vernal Pool 4 Inflow=0.3 cfs 0.021 af
Primary=0.3 cfs 0.021 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=4.4 cfs 0.350 af
Primary=4.4 cfs 0.350 af

Link DP10.12: Wetland 6 Inflow=0.8 cfs 0.087 af
Primary=0.8 cfs 0.087 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=2.5 cfs 0.318 af
Primary=2.5 cfs 0.318 af

Link DP10.15: Wetland 4 Inflow=0.2 cfs 0.088 af
Primary=0.2 cfs 0.088 af

Link DP10.2: Wetland 19 Inflow=1.4 cfs 0.120 af
Primary=1.4 cfs 0.120 af

Link DP10.3: Wetland 15 Inflow=2.9 cfs 0.237 af
Primary=2.9 cfs 0.237 af

Link DP10.4: Hop Brook Inflow=2.6 cfs 0.238 af
Primary=2.6 cfs 0.238 af

Link DP10.5: Wetland 14 Inflow=1.7 cfs 0.195 af
Primary=1.7 cfs 0.195 af

Link DP10.6: Wetland 11 Inflow=2.8 cfs 0.317 af
Primary=2.8 cfs 0.317 af

Link DP10.7: Wetland 13 Inflow=0.3 cfs 0.052 af
Primary=0.3 cfs 0.052 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=4.6 cfs 0.370 af
Primary=4.6 cfs 0.370 af

Total Runoff Area = 36.761 ac Runoff Volume = 3.822 af Average Runoff Depth = 1.25"
84.22% Pervious = 30.962 ac 15.78% Impervious = 5.799 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 2.9 cfs @ 12.26 hrs, Volume= 0.298 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

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

Summary for Subcatchment PR10.11:

Runoff = 0.7 cfs @ 12.19 hrs, Volume= 0.080 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 0.8 cfs @ 12.23 hrs, Volume= 0.087 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 3.1 cfs @ 12.12 hrs, Volume= 0.237 af, Depth= 2.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.292	76	Gravel roads, HSG A
0.065	30	Meadow, non-grazed, HSG A
0.586	98	Paved parking, HSG A
0.395	30	Woods, Good, HSG A
1.350	70	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.3	22	0.2640	1.28		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.3	303	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.0	375	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 1.1 cfs @ 12.09 hrs, Volume= 0.076 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.241	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

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

Summary for Subcatchment PR10.14A:

Runoff = 0.2 cfs @ 12.62 hrs, Volume= 0.087 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.391	39	>75% Grass cover, Good, HSG A
0.031	30	Meadow, non-grazed, HSG A
0.547	98	Paved parking, HSG A
3.101	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment PR10.14B:

Runoff = 2.5 cfs @ 12.19 hrs, Volume= 0.266 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.872	39	>75% Grass cover, Good, HSG A
0.044	76	Gravel roads, HSG A
0.135	30	Meadow, non-grazed, HSG A
0.967	98	Paved parking, HSG A
0.898	30	Woods, Good, HSG A
2.916	56	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.2120	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	11	0.3270	2.86		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.1	603	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.9	664	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 0.2 cfs @ 12.70 hrs, Volume= 0.079 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.998	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.415	98	Paved parking, HSG A
2.774	30	Woods, Good, HSG A
4.280	39	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.1 cfs @ 12.23 hrs, Volume= 0.009 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.015	30	Meadow, non-grazed, HSG A
0.043	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 1.4 cfs @ 12.15 hrs, Volume= 0.120 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.016	98	Paved parking, HSG D
0.438	77	Woods, Good, HSG D
0.517	78	Weighted Average
0.501		96.92% Pervious Area
0.016		3.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9					**Direct Entry, Same as EX10.2**

Summary for Subcatchment PR10.3:

Runoff = 2.9 cfs @ 12.14 hrs, Volume= 0.237 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 2.6 cfs @ 12.17 hrs, Volume= 0.238 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 4.1 cfs @ 12.20 hrs, Volume= 0.398 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.0 cfs @ 15.17 hrs, Volume= 0.012 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	202	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	14	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.6	266	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 2.8 cfs @ 12.17 hrs, Volume= 0.317 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.433	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.214	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.2 cfs @ 12.39 hrs, Volume= 0.040 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.8	219	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.1	198	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.5	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.2 cfs @ 12.16 hrs, Volume= 0.020 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 4.6 cfs @ 12.12 hrs, Volume= 0.370 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.009	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 4.9 cfs @ 12.41 hrs, Volume= 0.620 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.050	39	>75% Grass cover, Good, HSG A
0.060	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.099	78	Meadow, non-grazed, HSG D
0.646	98	Paved parking, HSG A
0.697	98	Paved parking, HSG D
0.151	30	Woods, Good, HSG A
0.424	77	Woods, Good, HSG D
2.211	84	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P-10.4: Existing Pond

Inflow Area = 3.037 ac, 15.14% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 4.1 cfs @ 12.20 hrs, Volume= 0.398 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 129.18' @ 24.76 hrs Surf.Area= 29,604 sf Storage= 17,292 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af
Outflow = 0.0 cfs @ 14.93 hrs, Volume= 0.008 af, Atten= 59%, Lag= 146.2 min
Discarded = 0.0 cfs @ 14.93 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.72' @ 14.93 hrs Surf.Area= 461 sf Storage= 52 cf

Plug-Flow detention time= 59.7 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 59.7 min (1,044.3 - 984.7)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 14.93 hrs HW=136.72' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 2.11" for 10-yr event
Inflow = 3.1 cfs @ 12.12 hrs, Volume= 0.237 af
Outflow = 2.9 cfs @ 12.15 hrs, Volume= 0.237 af, Atten= 4%, Lag= 1.7 min
Discarded = 0.0 cfs @ 12.15 hrs, Volume= 0.043 af
Primary = 2.9 cfs @ 12.15 hrs, Volume= 0.194 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.34' @ 12.15 hrs Surf.Area= 1,973 sf Storage= 709 cf

Plug-Flow detention time= 31.1 min calculated for 0.237 af (100% of inflow)
Center-of-Mass det. time= 31.1 min (879.5 - 848.4)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.15 hrs HW=137.34' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=2.9 cfs @ 12.15 hrs HW=137.34' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.9 cfs @ 1.21 fps)

Summary for Pond P10.14B_A: Landham Road BMP: Cell A

Inflow Area = 2.916 ac, 33.15% Impervious, Inflow Depth = 1.09" for 10-yr event
Inflow = 2.5 cfs @ 12.19 hrs, Volume= 0.266 af
Outflow = 2.7 cfs @ 12.20 hrs, Volume= 0.266 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.06 hrs, Volume= 0.021 af
Primary = 2.6 cfs @ 12.20 hrs, Volume= 0.245 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 142.13' @ 12.20 hrs Surf.Area= 790 sf Storage= 323 cf

Plug-Flow detention time= 23.4 min calculated for 0.266 af (100% of inflow)
Center-of-Mass det. time= 23.5 min (916.1 - 892.6)

Volume	Invert	Avail.Storage	Storage Description
#1	141.00'	323 cf	**Cell A (West) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
141.00	103	0	0
141.50	300	101	101
141.90	490	158	259
142.00	790	64	323

Device	Routing	Invert	Outlet Devices
#1	Primary	141.90'	**6.5' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86

#2	Discarded	141.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.06 hrs HW=142.04' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=2.6 cfs @ 12.20 hrs HW=142.13' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 2.6 cfs @ 1.80 fps)

Summary for Pond P10.14B_B: Landham Road BMP: Cell B

Inflow Area =	2.916 ac, 33.15% Impervious, Inflow Depth = 1.01" for 10-yr event				
Inflow =	2.6 cfs @	12.20 hrs, Volume=	0.245 af		
Outflow =	2.5 cfs @	12.21 hrs, Volume=	0.245 af, Atten= 6%, Lag= 0.6 min		
Discarded =	0.0 cfs @	12.21 hrs, Volume=	0.015 af		
Primary =	2.5 cfs @	12.21 hrs, Volume=	0.231 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 140.86' @ 12.21 hrs Surf.Area= 658 sf Storage= 350 cf

Plug-Flow detention time= 14.9 min calculated for 0.245 af (100% of inflow)
Center-of-Mass det. time= 15.0 min (902.9 - 887.9)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	448 cf	**Cell B (Eastern) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
140.00	201	0	0
140.50	420	155	155
141.00	750	293	448

Device	Routing	Invert	Outlet Devices
#1	Primary	140.50'	**3.0' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86
#2	Discarded	140.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.21 hrs HW=140.86' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=2.5 cfs @ 12.21 hrs HW=140.86' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 2.5 cfs @ 2.28 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area =	1.526 ac, 5.07% Impervious, Inflow Depth = 0.10" for 10-yr event				
Inflow =	0.0 cfs @	15.17 hrs, Volume=	0.012 af		
Outflow =	0.0 cfs @	0.00 hrs, Volume=	0.000 af, Atten= 100%, Lag= 0.0 min		
Primary =	0.0 cfs @	0.00 hrs, Volume=	0.000 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 129.35' @ 24.83 hrs Surf.Area= 2,360 sf Storage= 533 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	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area =	0.835 ac,	8.41% Impervious,	Inflow Depth =	0.57"	for 10-yr event
Inflow =	0.2 cfs @	12.39 hrs,	Volume=	0.040 af	
Outflow =	0.2 cfs @	12.54 hrs,	Volume=	0.040 af,	Atten= 12%, Lag= 9.0 min
Discarded =	0.0 cfs @	12.54 hrs,	Volume=	0.008 af	
Primary =	0.2 cfs @	12.54 hrs,	Volume=	0.032 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.74' @ 12.54 hrs Surf.Area= 844 sf Storage= 231 cf

Plug-Flow detention time= 167.1 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 167.3 min (1,105.3 - 937.9)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50

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
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.54 hrs HW=127.74' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.54 hrs HW=127.74' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.49 fps)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 3.36" for 10-yr event
Inflow = 4.9 cfs @ 12.41 hrs, Volume= 0.620 af
Primary = 4.9 cfs @ 12.41 hrs, Volume= 0.620 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 2.98" for 10-yr event
Inflow = 2.9 cfs @ 12.26 hrs, Volume= 0.298 af
Primary = 2.9 cfs @ 12.26 hrs, Volume= 0.298 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 2.98" for 10-yr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 1.47" for 10-yr event
Inflow = 4.4 cfs @ 12.14 hrs, Volume= 0.350 af
Primary = 4.4 cfs @ 12.14 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 0.90" for 10-yr event
Inflow = 0.8 cfs @ 12.23 hrs, Volume= 0.087 af
Primary = 0.8 cfs @ 12.23 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 0.55" for 10-yr event
Inflow = 2.5 cfs @ 12.21 hrs, Volume= 0.318 af
Primary = 2.5 cfs @ 12.21 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.24" for 10-yr event
Inflow = 0.2 cfs @ 12.66 hrs, Volume= 0.088 af
Primary = 0.2 cfs @ 12.66 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.517 ac, 3.08% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 1.4 cfs @ 12.15 hrs, Volume= 0.120 af
Primary = 1.4 cfs @ 12.15 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 2.89" for 10-yr event
Inflow = 2.9 cfs @ 12.14 hrs, Volume= 0.237 af
Primary = 2.9 cfs @ 12.14 hrs, Volume= 0.237 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 0.59" for 10-yr event
Inflow = 2.6 cfs @ 12.17 hrs, Volume= 0.238 af
Primary = 2.6 cfs @ 12.17 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af
Primary = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 0.63" for 10-yr event
Inflow = 2.8 cfs @ 12.17 hrs, Volume= 0.317 af
Primary = 2.8 cfs @ 12.17 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 0.68" for 10-yr event
Inflow = 0.3 cfs @ 12.52 hrs, Volume= 0.052 af
Primary = 0.3 cfs @ 12.52 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 4.6 cfs @ 12.12 hrs, Volume= 0.370 af
Primary = 4.6 cfs @ 12.12 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=3.99"
Flow Length=250' Tc=19.0 min CN=80 Runoff=3.9 cfs 0.399 af

Subcatchment PR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=3.99"
Tc=6.0 min CN=80 Runoff=0.4 cfs 0.028 af

Subcatchment PR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=1.41"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=1.4 cfs 0.133 af

Subcatchment PR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.63"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.1 cfs 0.016 af

Subcatchment PR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=1.90"
Flow Length=250' Tc=14.7 min CN=58 Runoff=1.3 cfs 0.135 af

Subcatchment PR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=2.99"
Flow Length=375' Tc=8.0 min CN=70 Runoff=4.4 cfs 0.336 af

Subcatchment PR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=74 Runoff=1.5 cfs 0.105 af

Subcatchment PR10.14A: Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=0.57"
Flow Length=123' Tc=19.0 min CN=40 Runoff=0.9 cfs 0.194 af

Subcatchment PR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=1.73"
Flow Length=664' Tc=11.9 min CN=56 Runoff=4.4 cfs 0.421 af

Subcatchment PR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.51"
Flow Length=681' Tc=20.3 min CN=39 Runoff=0.8 cfs 0.183 af

Subcatchment PR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=1.26"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.1 cfs 0.016 af

Subcatchment PR10.2: Runoff Area=0.517 ac 3.08% Impervious Runoff Depth=3.78"
Tc=10.9 min CN=78 Runoff=1.9 cfs 0.163 af

Subcatchment PR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=3.89"
Flow Length=61' Tc=10.1 min CN=79 Runoff=3.9 cfs 0.319 af

Subcatchment PR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=2.34"
Flow Length=411' Tc=11.3 min CN=63 Runoff=4.0 cfs 0.354 af

Subcatchment PR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=2.34"
Flow Length=516' Tc=13.4 min CN=63 Runoff=6.4 cfs 0.592 af

Subcatchment PR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=3.78"
Flow Length=118' Tc=23.4 min CN=78 Runoff=2.3 cfs 0.264 af

Subcatchment PR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.30"
Flow Length=266' Tc=14.6 min CN=35 Runoff=0.1 cfs 0.038 af

Subcatchment PR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=1.41"
Flow Length=363' Tc=9.9 min CN=52 Runoff=5.5 cfs 0.527 af

Subcatchment PR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=1.04"
Flow Length=502' Tc=15.5 min CN=47 Runoff=0.5 cfs 0.072 af

Subcatchment PR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=3.89"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.3 cfs 0.027 af

Subcatchment PR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.1 cfs 0.023 af

Subcatchment PR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=2.34"
Flow Length=384' Tc=7.6 min CN=63 Runoff=7.1 cfs 0.550 af

Subcatchment PR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=4.41"
Flow Length=727' Tc=29.7 min CN=84 Runoff=6.4 cfs 0.813 af

Pond P-10.4: Existing Pond Peak Elev=129.38' Storage=25,726 cf Inflow=6.4 cfs 0.592 af
Outflow=0.0 cfs 0.000 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.93' Storage=187 cf Inflow=0.1 cfs 0.016 af
Discarded=0.0 cfs 0.016 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.016 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.40' Storage=839 cf Inflow=4.4 cfs 0.336 af
Discarded=0.1 cfs 0.046 af Primary=4.2 cfs 0.291 af Outflow=4.2 cfs 0.336 af

Pond P10.14B_A: Landham Road BMP: Cell A Peak Elev=142.22' Storage=323 cf Inflow=4.4 cfs 0.421 af
Discarded=0.0 cfs 0.022 af Primary=4.4 cfs 0.400 af Outflow=4.4 cfs 0.421 af

Pond P10.14B_B: Landham Road BMP: Cell B Peak Elev=141.03' Storage=448 cf Inflow=4.4 cfs 0.400 af
Discarded=0.0 cfs 0.015 af Primary=4.5 cfs 0.385 af Outflow=4.5 cfs 0.400 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=129.42' Storage=695 cf Inflow=0.1 cfs 0.038 af
Outflow=0.1 cfs 0.023 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.78' Storage=263 cf Inflow=0.5 cfs 0.072 af
Discarded=0.0 cfs 0.008 af Primary=0.5 cfs 0.064 af Outflow=0.5 cfs 0.072 af

Link DP-9.1: Station Rd Inflow=6.4 cfs 0.813 af
Primary=6.4 cfs 0.813 af

Link DP10.1: Wetland 18 Inflow=3.9 cfs 0.399 af
Primary=3.9 cfs 0.399 af

Link DP10.10: Vernal Pool 4 Inflow=0.4 cfs 0.028 af
Primary=0.4 cfs 0.028 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=6.7 cfs 0.529 af
Primary=6.7 cfs 0.529 af

Link DP10.12: Wetland 6 Inflow=1.3 cfs 0.135 af
Primary=1.3 cfs 0.135 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=4.7 cfs 0.579 af
Primary=4.7 cfs 0.579 af

Link DP10.15: Wetland 4 Inflow=0.9 cfs 0.199 af
Primary=0.9 cfs 0.199 af

Link DP10.2: Wetland 19 Inflow=1.9 cfs 0.163 af
Primary=1.9 cfs 0.163 af

Link DP10.3: Wetland 15 Inflow=3.9 cfs 0.319 af
Primary=3.9 cfs 0.319 af

Link DP10.4: Hop Brook Inflow=4.0 cfs 0.354 af
Primary=4.0 cfs 0.354 af

Link DP10.5: Wetland 14 Inflow=2.3 cfs 0.264 af
Primary=2.3 cfs 0.264 af

Link DP10.6: Wetland 11 Inflow=5.5 cfs 0.550 af
Primary=5.5 cfs 0.550 af

Link DP10.7: Wetland 13 Inflow=0.7 cfs 0.091 af
Primary=0.7 cfs 0.091 af

Link DP10.8: Wetland 10 Inflow=0.1 cfs 0.023 af
Primary=0.1 cfs 0.023 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=7.1 cfs 0.550 af
Primary=7.1 cfs 0.550 af

Total Runoff Area = 36.761 ac Runoff Volume = 5.708 af Average Runoff Depth = 1.86"
84.22% Pervious = 30.962 ac 15.78% Impervious = 5.799 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 3.9 cfs @ 12.26 hrs, Volume= 0.399 af, Depth= 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af, Depth= 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

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

Summary for Subcatchment PR10.11:

Runoff = 1.4 cfs @ 12.17 hrs, Volume= 0.133 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.1 cfs @ 12.36 hrs, Volume= 0.016 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 1.3 cfs @ 12.22 hrs, Volume= 0.135 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 4.4 cfs @ 12.12 hrs, Volume= 0.336 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.292	76	Gravel roads, HSG A
0.065	30	Meadow, non-grazed, HSG A
0.586	98	Paved parking, HSG A
0.395	30	Woods, Good, HSG A
1.350	70	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.3	22	0.2640	1.28		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.3	303	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.0	375	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 1.5 cfs @ 12.09 hrs, Volume= 0.105 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.241	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

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

Summary for Subcatchment PR10.14A:

Runoff = 0.9 cfs @ 12.50 hrs, Volume= 0.194 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.391	39	>75% Grass cover, Good, HSG A
0.031	30	Meadow, non-grazed, HSG A
0.547	98	Paved parking, HSG A
3.101	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment PR10.14B:

Runoff = 4.4 cfs @ 12.18 hrs, Volume= 0.421 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.872	39	>75% Grass cover, Good, HSG A
0.044	76	Gravel roads, HSG A
0.135	30	Meadow, non-grazed, HSG A
0.967	98	Paved parking, HSG A
0.898	30	Woods, Good, HSG A
2.916	56	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.2120	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	11	0.3270	2.86		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.1	603	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.9	664	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 0.8 cfs @ 12.54 hrs, Volume= 0.183 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.998	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.415	98	Paved parking, HSG A
2.774	30	Woods, Good, HSG A
4.280	39	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.1 cfs @ 12.20 hrs, Volume= 0.016 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.015	30	Meadow, non-grazed, HSG A
0.043	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 1.9 cfs @ 12.15 hrs, Volume= 0.163 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.016	98	Paved parking, HSG D
0.438	77	Woods, Good, HSG D
0.517	78	Weighted Average
0.501		96.92% Pervious Area
0.016		3.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9					**Direct Entry, Same as EX10.2**

Summary for Subcatchment PR10.3:

Runoff = 3.9 cfs @ 12.14 hrs, Volume= 0.319 af, Depth= 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 4.0 cfs @ 12.17 hrs, Volume= 0.354 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 6.4 cfs @ 12.19 hrs, Volume= 0.592 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 0.038 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	202	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	14	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.6	266	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 5.5 cfs @ 12.16 hrs, Volume= 0.527 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.433	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.214	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.5 cfs @ 12.28 hrs, Volume= 0.072 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.8	219	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.1	198	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.5	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 0.027 af, Depth= 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.1 cfs @ 12.45 hrs, Volume= 0.023 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 7.1 cfs @ 12.12 hrs, Volume= 0.550 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.009	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 6.4 cfs @ 12.40 hrs, Volume= 0.813 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.050	39	>75% Grass cover, Good, HSG A
0.060	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.099	78	Meadow, non-grazed, HSG D
0.646	98	Paved parking, HSG A
0.697	98	Paved parking, HSG D
0.151	30	Woods, Good, HSG A
0.424	77	Woods, Good, HSG D
2.211	84	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P-10.4: Existing Pond

Inflow Area = 3.037 ac, 15.14% Impervious, Inflow Depth = 2.34" for 25-yr event
Inflow = 6.4 cfs @ 12.19 hrs, Volume= 0.592 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 129.38' @ 24.76 hrs Surf.Area= 54,567 sf Storage= 25,726 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.1 cfs @ 12.36 hrs, Volume= 0.016 af
Outflow = 0.0 cfs @ 14.84 hrs, Volume= 0.016 af, Atten= 77%, Lag= 148.3 min
Discarded = 0.0 cfs @ 14.84 hrs, Volume= 0.016 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.93' @ 14.84 hrs Surf.Area= 878 sf Storage= 187 cf

Plug-Flow detention time= 117.8 min calculated for 0.016 af (100% of inflow)
Center-of-Mass det. time= 117.8 min (1,059.9 - 942.1)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 14.84 hrs HW=136.93' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 2.99" for 25-yr event
Inflow = 4.4 cfs @ 12.12 hrs, Volume= 0.336 af
Outflow = 4.2 cfs @ 12.14 hrs, Volume= 0.336 af, Atten= 4%, Lag= 1.6 min
Discarded = 0.1 cfs @ 12.14 hrs, Volume= 0.046 af
Primary = 4.2 cfs @ 12.14 hrs, Volume= 0.291 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.40' @ 12.14 hrs Surf.Area= 2,156 sf Storage= 839 cf

Plug-Flow detention time= 23.7 min calculated for 0.336 af (100% of inflow)
Center-of-Mass det. time= 23.7 min (861.9 - 838.2)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.14 hrs HW=137.40' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=4.2 cfs @ 12.14 hrs HW=137.40' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 4.2 cfs @ 1.38 fps)

Summary for Pond P10.14B_A: Landham Road BMP: Cell A

Inflow Area = 2.916 ac, 33.15% Impervious, Inflow Depth = 1.73" for 25-yr event
Inflow = 4.4 cfs @ 12.18 hrs, Volume= 0.421 af
Outflow = 4.4 cfs @ 12.19 hrs, Volume= 0.421 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.0 cfs @ 11.92 hrs, Volume= 0.022 af
Primary = 4.4 cfs @ 12.19 hrs, Volume= 0.400 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 142.22' @ 12.19 hrs Surf.Area= 790 sf Storage= 323 cf

Plug-Flow detention time= 15.2 min calculated for 0.421 af (100% of inflow)
Center-of-Mass det. time= 15.3 min (892.1 - 876.8)

Volume	Invert	Avail.Storage	Storage Description
#1	141.00'	323 cf	**Cell A (West) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
141.00	103	0	0
141.50	300	101	101
141.90	490	158	259
142.00	790	64	323

Device	Routing	Invert	Outlet Devices
#1	Primary	141.90'	**6.5' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86

#2	Discarded	141.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 11.92 hrs HW=142.01' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=4.4 cfs @ 12.19 hrs HW=142.22' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 4.4 cfs @ 2.14 fps)

Summary for Pond P10.14B_B: Landham Road BMP: Cell B

Inflow Area =	2.916 ac, 33.15% Impervious, Inflow Depth = 1.65" for 25-yr event				
Inflow =	4.4 cfs @	12.19 hrs,	Volume=	0.400 af	
Outflow =	4.5 cfs @	12.18 hrs,	Volume=	0.400 af,	Atten= 0%, Lag= 0.0 min
Discarded =	0.0 cfs @	12.16 hrs,	Volume=	0.015 af	
Primary =	4.5 cfs @	12.18 hrs,	Volume=	0.385 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 141.03' @ 12.18 hrs Surf.Area= 750 sf Storage= 448 cf

Plug-Flow detention time= 9.8 min calculated for 0.400 af (100% of inflow)
Center-of-Mass det. time= 9.9 min (883.4 - 873.6)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	448 cf	**Cell B (Eastern) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
140.00	201	0	0
140.50	420	155	155
141.00	750	293	448

Device	Routing	Invert	Outlet Devices
#1	Primary	140.50'	**3.0' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86
#2	Discarded	140.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.16 hrs HW=141.03' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=4.5 cfs @ 12.18 hrs HW=141.03' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 4.5 cfs @ 2.78 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area =	1.526 ac, 5.07% Impervious, Inflow Depth = 0.30" for 25-yr event				
Inflow =	0.1 cfs @	12.57 hrs,	Volume=	0.038 af	
Outflow =	0.1 cfs @	15.59 hrs,	Volume=	0.023 af,	Atten= 50%, Lag= 181.5 min
Primary =	0.1 cfs @	15.59 hrs,	Volume=	0.023 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 129.42' @ 15.59 hrs Surf.Area= 2,657 sf Storage= 695 cf

Plug-Flow detention time= 278.0 min calculated for 0.023 af (61% of inflow)
Center-of-Mass det. time= 138.9 min (1,141.4 - 1,002.4)

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 15.59 hrs HW=129.42' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.31 fps)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area =	0.835 ac,	8.41% Impervious,	Inflow Depth =	1.04"	for 25-yr event
Inflow =	0.5 cfs @	12.28 hrs,	Volume=	0.072 af	
Outflow =	0.5 cfs @	12.33 hrs,	Volume=	0.072 af,	Atten= 3%, Lag= 3.2 min
Discarded =	0.0 cfs @	12.33 hrs,	Volume=	0.008 af	
Primary =	0.5 cfs @	12.33 hrs,	Volume=	0.064 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.78' @ 12.33 hrs Surf.Area= 890 sf Storage= 263 cf

Plug-Flow detention time= 94.6 min calculated for 0.072 af (100% of inflow)
Center-of-Mass det. time= 94.6 min (1,006.4 - 911.8)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50

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
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.33 hrs HW=127.78' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.5 cfs @ 12.33 hrs HW=127.78' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.5 cfs @ 0.68 fps)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 4.41" for 25-yr event
Inflow = 6.4 cfs @ 12.40 hrs, Volume= 0.813 af
Primary = 6.4 cfs @ 12.40 hrs, Volume= 0.813 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 3.99" for 25-yr event
Inflow = 3.9 cfs @ 12.26 hrs, Volume= 0.399 af
Primary = 3.9 cfs @ 12.26 hrs, Volume= 0.399 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 3.99" for 25-yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 2.22" for 25-yr event
Inflow = 6.7 cfs @ 12.14 hrs, Volume= 0.529 af
Primary = 6.7 cfs @ 12.14 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 1.40" for 25-yr event
Inflow = 1.3 cfs @ 12.22 hrs, Volume= 0.135 af
Primary = 1.3 cfs @ 12.22 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 0.99" for 25-yr event
Inflow = 4.7 cfs @ 12.20 hrs, Volume= 0.579 af
Primary = 4.7 cfs @ 12.20 hrs, Volume= 0.579 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.54" for 25-yr event
Inflow = 0.9 cfs @ 12.52 hrs, Volume= 0.199 af
Primary = 0.9 cfs @ 12.52 hrs, Volume= 0.199 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.517 ac, 3.08% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 1.9 cfs @ 12.15 hrs, Volume= 0.163 af
Primary = 1.9 cfs @ 12.15 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 3.89" for 25-yr event
Inflow = 3.9 cfs @ 12.14 hrs, Volume= 0.319 af
Primary = 3.9 cfs @ 12.14 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 0.87" for 25-yr event
Inflow = 4.0 cfs @ 12.17 hrs, Volume= 0.354 af
Primary = 4.0 cfs @ 12.17 hrs, Volume= 0.354 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af
Primary = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 1.10" for 25-yr event
Inflow = 5.5 cfs @ 12.16 hrs, Volume= 0.550 af
Primary = 5.5 cfs @ 12.16 hrs, Volume= 0.550 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 1.19" for 25-yr event
Inflow = 0.7 cfs @ 12.31 hrs, Volume= 0.091 af
Primary = 0.7 cfs @ 12.31 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.45 hrs, Volume= 0.023 af
Primary = 0.1 cfs @ 12.45 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 2.34" for 25-yr event
Inflow = 7.1 cfs @ 12.12 hrs, Volume= 0.550 af
Primary = 7.1 cfs @ 12.12 hrs, Volume= 0.550 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=6.19"
Flow Length=250' Tc=19.0 min CN=80 Runoff=5.9 cfs 0.619 af

Subcatchment PR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=6.19"
Tc=6.0 min CN=80 Runoff=0.6 cfs 0.043 af

Subcatchment PR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=2.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=3.1 cfs 0.269 af

Subcatchment PR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=1.63"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.4 cfs 0.041 af

Subcatchment PR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=3.55"
Flow Length=250' Tc=14.7 min CN=58 Runoff=2.6 cfs 0.252 af

Subcatchment PR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=4.98"
Flow Length=375' Tc=8.0 min CN=70 Runoff=7.4 cfs 0.561 af

Subcatchment PR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=74 Runoff=2.4 cfs 0.170 af

Subcatchment PR10.14A: Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=1.52"
Flow Length=123' Tc=19.0 min CN=40 Runoff=3.8 cfs 0.516 af

Subcatchment PR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=3.32"
Flow Length=664' Tc=11.9 min CN=56 Runoff=9.1 cfs 0.807 af

Subcatchment PR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=1.42"
Flow Length=681' Tc=20.3 min CN=39 Runoff=3.5 cfs 0.506 af

Subcatchment PR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=2.62"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.3 cfs 0.033 af

Subcatchment PR10.2: Runoff Area=0.517 ac 3.08% Impervious Runoff Depth=5.95"
Tc=10.9 min CN=78 Runoff=3.0 cfs 0.256 af

Subcatchment PR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=6.07"
Flow Length=61' Tc=10.1 min CN=79 Runoff=6.0 cfs 0.498 af

Subcatchment PR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=4.15"
Flow Length=411' Tc=11.3 min CN=63 Runoff=7.4 cfs 0.627 af

Subcatchment PR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=4.15"
Flow Length=516' Tc=13.4 min CN=63 Runoff=11.6 cfs 1.049 af

Subcatchment PR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=5.95"
Flow Length=118' Tc=23.4 min CN=78 Runoff=3.6 cfs 0.415 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=1.02"
Flow Length=266' Tc=14.6 min CN=35 Runoff=0.8 cfs 0.129 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=2.85"
Flow Length=363' Tc=9.9 min CN=52 Runoff=12.4 cfs 1.066 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=2.28"
Flow Length=502' Tc=15.5 min CN=47 Runoff=1.5 cfs 0.159 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=6.07"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.5 cfs 0.042 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=433' Tc=7.3 min CN=35 Runoff=0.5 cfs 0.076 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=4.15"
Flow Length=384' Tc=7.6 min CN=63 Runoff=12.9 cfs 0.975 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=6.67"
Flow Length=727' Tc=29.7 min CN=84 Runoff=9.5 cfs 1.230 af

Pond P-10.4: Existing Pond Peak Elev=129.65' Storage=45,665 cf Inflow=11.6 cfs 1.049 af
Outflow=0.0 cfs 0.000 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=137.05' Storage=308 cf Inflow=0.4 cfs 0.041 af
Discarded=0.0 cfs 0.026 af Primary=0.2 cfs 0.016 af Outflow=0.3 cfs 0.041 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.52' Storage=1,113 cf Inflow=7.4 cfs 0.561 af
Discarded=0.1 cfs 0.050 af Primary=7.0 cfs 0.510 af Outflow=7.1 cfs 0.561 af

Pond P10.14B_A: Landham Road BMP: Cell A Peak Elev=142.41' Storage=323 cf Inflow=9.1 cfs 0.807 af
Discarded=0.0 cfs 0.024 af Primary=9.1 cfs 0.783 af Outflow=9.1 cfs 0.807 af

Pond P10.14B_B: Landham Road BMP: Cell B Peak Elev=141.35' Storage=448 cf Inflow=9.1 cfs 0.783 af
Discarded=0.0 cfs 0.017 af Primary=9.1 cfs 0.766 af Outflow=9.1 cfs 0.783 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=129.48' Storage=880 cf Inflow=0.8 cfs 0.129 af
Outflow=0.6 cfs 0.114 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.85' Storage=335 cf Inflow=1.5 cfs 0.159 af
Discarded=0.0 cfs 0.008 af Primary=1.5 cfs 0.151 af Outflow=1.5 cfs 0.159 af

Link DP-9.1: Station Rd Inflow=9.5 cfs 1.230 af
Primary=9.5 cfs 1.230 af

Link DP10.1: Wetland 18 Inflow=5.9 cfs 0.619 af
Primary=5.9 cfs 0.619 af

Link DP10.10: Vernal Pool 4 Inflow=0.6 cfs 0.043 af
Primary=0.6 cfs 0.043 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=12.1 cfs 0.950 af
Primary=12.1 cfs 0.950 af

Link DP10.12: Wetland 6 Inflow=2.6 cfs 0.267 af
Primary=2.6 cfs 0.267 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=11.7 cfs 1.282 af
Primary=11.7 cfs 1.282 af

Link DP10.15: Wetland 4 Inflow=3.7 cfs 0.538 af
Primary=3.7 cfs 0.538 af

Link DP10.2: Wetland 19 Inflow=3.0 cfs 0.256 af
Primary=3.0 cfs 0.256 af

Link DP10.3: Wetland 15 Inflow=6.0 cfs 0.498 af
Primary=6.0 cfs 0.498 af

Link DP10.4: Hop Brook Inflow=7.4 cfs 0.627 af
Primary=7.4 cfs 0.627 af

Link DP10.5: Wetland 14 Inflow=3.6 cfs 0.415 af
Primary=3.6 cfs 0.415 af

Link DP10.6: Wetland 11 Inflow=12.4 cfs 1.180 af
Primary=12.4 cfs 1.180 af

Link DP10.7: Wetland 13 Inflow=1.9 cfs 0.193 af
Primary=1.9 cfs 0.193 af

Link DP10.8: Wetland 10 Inflow=0.5 cfs 0.076 af
Primary=0.5 cfs 0.076 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=12.9 cfs 0.975 af
Primary=12.9 cfs 0.975 af

Total Runoff Area = 36.761 ac Runoff Volume = 10.339 af Average Runoff Depth = 3.38"
84.22% Pervious = 30.962 ac 15.78% Impervious = 5.799 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 5.9 cfs @ 12.26 hrs, Volume= 0.619 af, Depth= 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.043 af, Depth= 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

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

Summary for Subcatchment PR10.11:

Runoff = 3.1 cfs @ 12.16 hrs, Volume= 0.269 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.4 cfs @ 12.20 hrs, Volume= 0.041 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 2.6 cfs @ 12.21 hrs, Volume= 0.252 af, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 7.4 cfs @ 12.11 hrs, Volume= 0.561 af, Depth= 4.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.292	76	Gravel roads, HSG A
0.065	30	Meadow, non-grazed, HSG A
0.586	98	Paved parking, HSG A
0.395	30	Woods, Good, HSG A
1.350	70	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.1540	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.3	22	0.2640	1.28		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.3	303	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.0	375	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 2.4 cfs @ 12.09 hrs, Volume= 0.170 af, Depth= 5.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.241	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

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

Summary for Subcatchment PR10.14A:

Runoff = 3.8 cfs @ 12.33 hrs, Volume= 0.516 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.391	39	>75% Grass cover, Good, HSG A
0.031	30	Meadow, non-grazed, HSG A
0.547	98	Paved parking, HSG A
3.101	30	Woods, Good, HSG A
4.071	40	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	50	0.0340	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	73	0.0658	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	123	Total			

Summary for Subcatchment PR10.14B:

Runoff = 9.1 cfs @ 12.17 hrs, Volume= 0.807 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.872	39	>75% Grass cover, Good, HSG A
0.044	76	Gravel roads, HSG A
0.135	30	Meadow, non-grazed, HSG A
0.967	98	Paved parking, HSG A
0.898	30	Woods, Good, HSG A
2.916	56	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.2120	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	11	0.3270	2.86		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.1	603	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.9	664	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 3.5 cfs @ 12.37 hrs, Volume= 0.506 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.998	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.415	98	Paved parking, HSG A
2.774	30	Woods, Good, HSG A
4.280	39	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.3 cfs @ 12.18 hrs, Volume= 0.033 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.015	30	Meadow, non-grazed, HSG A
0.043	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 3.0 cfs @ 12.15 hrs, Volume= 0.256 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.016	98	Paved parking, HSG D
0.438	77	Woods, Good, HSG D
0.517	78	Weighted Average
0.501		96.92% Pervious Area
0.016		3.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9					**Direct Entry, Same as EX10.2**

Summary for Subcatchment PR10.3:

Runoff = 6.0 cfs @ 12.14 hrs, Volume= 0.498 af, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 7.4 cfs @ 12.16 hrs, Volume= 0.627 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 11.6 cfs @ 12.19 hrs, Volume= 1.049 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.8 cfs @ 12.35 hrs, Volume= 0.129 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0720	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	202	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	14	0.0070	1.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
14.6	266	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 12.4 cfs @ 12.15 hrs, Volume= 1.066 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.433	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.214	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 1.5 cfs @ 12.24 hrs, Volume= 0.159 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.8	219	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.1	198	0.0051	1.07		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.5	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.5 cfs @ 12.16 hrs, Volume= 0.042 af, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.5 cfs @ 12.16 hrs, Volume= 0.076 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.442	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.451	30	Woods, Good, HSG A
0.901	35	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 12.9 cfs @ 12.11 hrs, Volume= 0.975 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.380	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.009	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 9.5 cfs @ 12.38 hrs, Volume= 1.230 af, Depth= 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.050	39	>75% Grass cover, Good, HSG A
0.060	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.099	78	Meadow, non-grazed, HSG D
0.646	98	Paved parking, HSG A
0.697	98	Paved parking, HSG D
0.151	30	Woods, Good, HSG A
0.424	77	Woods, Good, HSG D
2.211	84	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P-10.4: Existing Pond

Inflow Area = 3.037 ac, 15.14% Impervious, Inflow Depth = 4.15" for 100-yr event
Inflow = 11.6 cfs @ 12.19 hrs, Volume= 1.049 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 129.65' @ 24.76 hrs Surf.Area= 89,135 sf Storage= 45,665 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	124.00'	83,995 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
124.00	181	0	0
125.00	883	532	532
126.00	1,812	1,348	1,880
127.00	2,796	2,304	4,184
128.00	4,580	3,688	7,872
129.00	7,701	6,141	14,012
130.00	132,264	69,983	83,995

Device	Routing	Invert	Outlet Devices
#1	Primary	129.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=124.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 0.4 cfs @ 12.20 hrs, Volume= 0.041 af
Outflow = 0.3 cfs @ 12.41 hrs, Volume= 0.041 af, Atten= 25%, Lag= 12.0 min
Discarded = 0.0 cfs @ 12.41 hrs, Volume= 0.026 af
Primary = 0.2 cfs @ 12.41 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.05' @ 12.41 hrs Surf.Area= 1,144 sf Storage= 308 cf

Plug-Flow detention time= 97.3 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 97.3 min (998.1 - 900.7)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.41 hrs HW=137.05' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.41 hrs HW=137.05' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.53 fps)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 4.98" for 100-yr event
Inflow = 7.4 cfs @ 12.11 hrs, Volume= 0.561 af
Outflow = 7.1 cfs @ 12.14 hrs, Volume= 0.561 af, Atten= 3%, Lag= 1.5 min
Discarded = 0.1 cfs @ 12.14 hrs, Volume= 0.050 af
Primary = 7.0 cfs @ 12.14 hrs, Volume= 0.510 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.52' @ 12.14 hrs Surf.Area= 2,497 sf Storage= 1,113 cf

Plug-Flow detention time= 16.2 min calculated for 0.561 af (100% of inflow)
Center-of-Mass det. time= 16.2 min (839.7 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.14 hrs HW=137.52' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=7.0 cfs @ 12.14 hrs HW=137.52' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 7.0 cfs @ 1.68 fps)

Summary for Pond P10.14B_A: Landham Road BMP: Cell A

Inflow Area =	2.916 ac, 33.15% Impervious, Inflow Depth = 3.32" for 100-yr event				
Inflow =	9.1 cfs @	12.17 hrs,	Volume=	0.807 af	
Outflow =	9.1 cfs @	12.17 hrs,	Volume=	0.807 af,	Atten= 0%, Lag= 0.0 min
Discarded =	0.0 cfs @	11.71 hrs,	Volume=	0.024 af	
Primary =	9.1 cfs @	12.17 hrs,	Volume=	0.783 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 142.41' @ 12.17 hrs Surf.Area= 790 sf Storage= 323 cf

Plug-Flow detention time= 8.6 min calculated for 0.806 af (100% of inflow)
Center-of-Mass det. time= 8.7 min (865.3 - 856.6)

Volume	Invert	Avail.Storage	Storage Description
#1	141.00'	323 cf	**Cell A (West) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
141.00	103	0	0
141.50	300	101	101
141.90	490	158	259
142.00	790	64	323

Device	Routing	Invert	Outlet Devices
#1	Primary	141.90'	**6.5' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86

#2	Discarded	141.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 11.71 hrs HW=142.01' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=9.1 cfs @ 12.17 hrs HW=142.41' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 9.1 cfs @ 2.73 fps)

Summary for Pond P10.14B_B: Landham Road BMP: Cell B

Inflow Area =	2.916 ac,	33.15% Impervious,	Inflow Depth =	3.22"	for 100-yr event
Inflow =	9.1 cfs @	12.17 hrs,	Volume=	0.783 af	
Outflow =	9.1 cfs @	12.17 hrs,	Volume=	0.783 af,	Atten= 0%, Lag= 0.0 min
Discarded =	0.0 cfs @	12.04 hrs,	Volume=	0.017 af	
Primary =	9.1 cfs @	12.17 hrs,	Volume=	0.766 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 141.35' @ 12.17 hrs Surf.Area= 750 sf Storage= 448 cf

Plug-Flow detention time= 5.7 min calculated for 0.782 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (860.9 - 855.1)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	448 cf	**Cell B (Eastern) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
140.00	201	0	0
140.50	420	155	155
141.00	750	293	448

Device	Routing	Invert	Outlet Devices
#1	Primary	140.50'	**3.0' long (Profile 30) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.80 3.86 3.86
#2	Discarded	140.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.04 hrs HW=141.05' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=9.1 cfs @ 12.17 hrs HW=141.35' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 9.1 cfs @ 3.55 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area =	1.526 ac,	5.07% Impervious,	Inflow Depth =	1.02"	for 100-yr event
Inflow =	0.8 cfs @	12.35 hrs,	Volume=	0.129 af	
Outflow =	0.6 cfs @	12.58 hrs,	Volume=	0.114 af,	Atten= 24%, Lag= 14.1 min
Primary =	0.6 cfs @	12.58 hrs,	Volume=	0.114 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 129.48' @ 12.58 hrs Surf.Area= 2,849 sf Storage= 880 cf

Plug-Flow detention time= 89.4 min calculated for 0.114 af (88% of inflow)
Center-of-Mass det. time= 36.1 min (969.6 - 933.5)

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 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

Primary OutFlow Max=0.6 cfs @ 12.58 hrs HW=129.48' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.6 cfs @ 0.70 fps)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area =	0.835 ac,	8.41% Impervious,	Inflow Depth =	2.28"	for 100-yr event
Inflow =	1.5 cfs @	12.24 hrs,	Volume=	0.159 af	
Outflow =	1.5 cfs @	12.26 hrs,	Volume=	0.159 af,	Atten= 1%, Lag= 1.1 min
Discarded =	0.0 cfs @	12.26 hrs,	Volume=	0.008 af	
Primary =	1.5 cfs @	12.26 hrs,	Volume=	0.151 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.85' @ 12.26 hrs Surf.Area= 986 sf Storage= 335 cf

Plug-Flow detention time= 44.3 min calculated for 0.159 af (100% of inflow)
Center-of-Mass det. time= 44.6 min (927.5 - 883.0)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50

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
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.26 hrs HW=127.85' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=1.5 cfs @ 12.26 hrs HW=127.85' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.5 cfs @ 0.96 fps)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 6.67" for 100-yr event
Inflow = 9.5 cfs @ 12.38 hrs, Volume= 1.230 af
Primary = 9.5 cfs @ 12.38 hrs, Volume= 1.230 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 6.19" for 100-yr event
Inflow = 5.9 cfs @ 12.26 hrs, Volume= 0.619 af
Primary = 5.9 cfs @ 12.26 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 6.19" for 100-yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.043 af
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 3.99" for 100-yr event
Inflow = 12.1 cfs @ 12.13 hrs, Volume= 0.950 af
Primary = 12.1 cfs @ 12.13 hrs, Volume= 0.950 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 2.78" for 100-yr event
Inflow = 2.6 cfs @ 12.21 hrs, Volume= 0.267 af
Primary = 2.6 cfs @ 12.21 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 2.20" for 100-yr event
Inflow = 11.7 cfs @ 12.21 hrs, Volume= 1.282 af
Primary = 11.7 cfs @ 12.21 hrs, Volume= 1.282 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 1.46" for 100-yr event
Inflow = 3.7 cfs @ 12.36 hrs, Volume= 0.538 af
Primary = 3.7 cfs @ 12.36 hrs, Volume= 0.538 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.2: Wetland 19

Inflow Area = 0.517 ac, 3.08% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 3.0 cfs @ 12.15 hrs, Volume= 0.256 af
Primary = 3.0 cfs @ 12.15 hrs, Volume= 0.256 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 6.07" for 100-yr event
Inflow = 6.0 cfs @ 12.14 hrs, Volume= 0.498 af
Primary = 6.0 cfs @ 12.14 hrs, Volume= 0.498 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.4: Hop Brook

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 1.55" for 100-yr event
Inflow = 7.4 cfs @ 12.16 hrs, Volume= 0.627 af
Primary = 7.4 cfs @ 12.16 hrs, Volume= 0.627 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af
Primary = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 2.36" for 100-yr event
Inflow = 12.4 cfs @ 12.15 hrs, Volume= 1.180 af
Primary = 12.4 cfs @ 12.15 hrs, Volume= 1.180 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 2.52" for 100-yr event
Inflow = 1.9 cfs @ 12.24 hrs, Volume= 0.193 af
Primary = 1.9 cfs @ 12.24 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.5 cfs @ 12.16 hrs, Volume= 0.076 af
Primary = 0.5 cfs @ 12.16 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 4.15" for 100-yr event
Inflow = 12.9 cfs @ 12.11 hrs, Volume= 0.975 af
Primary = 12.9 cfs @ 12.11 hrs, Volume= 0.975 af, Atten= 0%, Lag= 0.0 min

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

Appendix C – Standard 3 Computations and Supporting Information

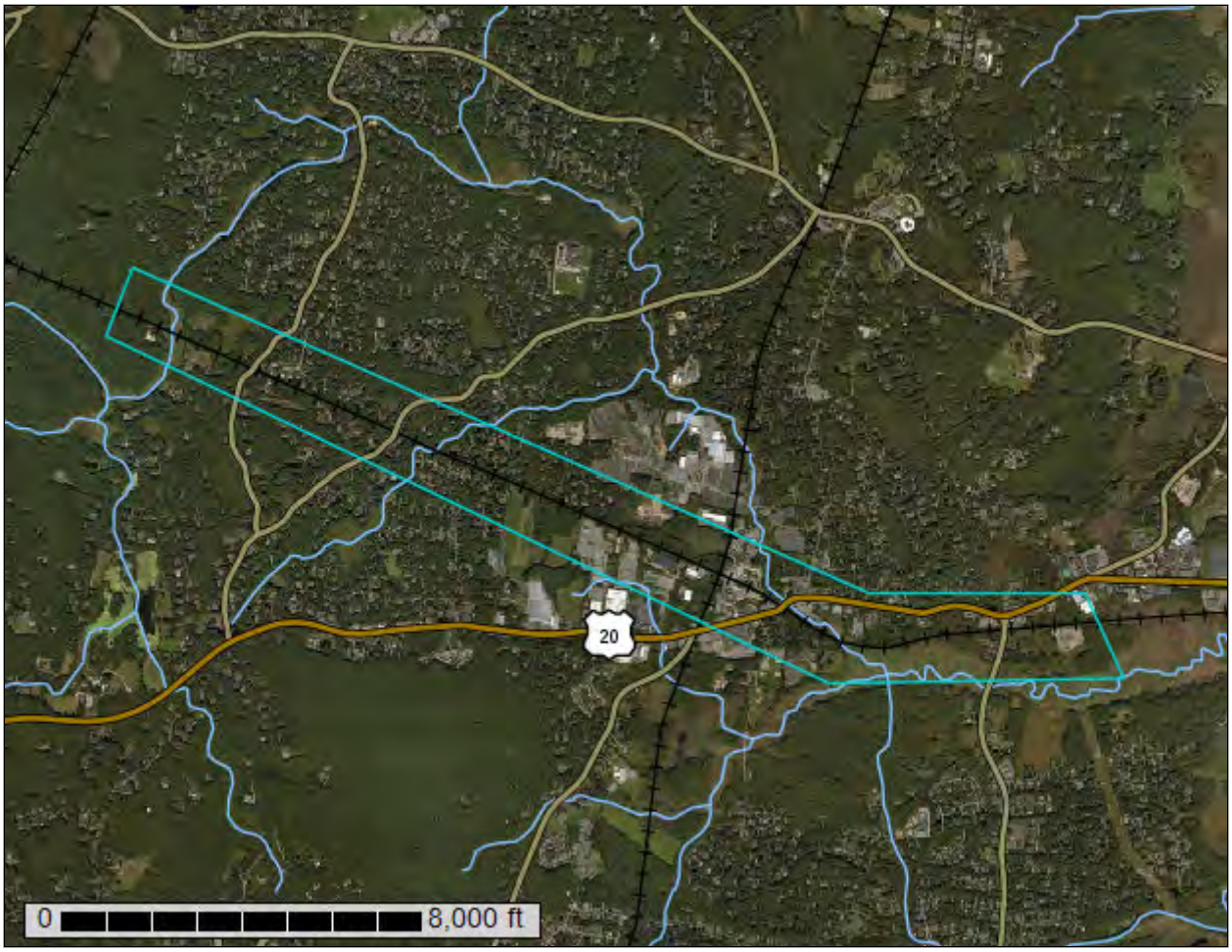
Soil Evaluation and Analysis

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts



February 26, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

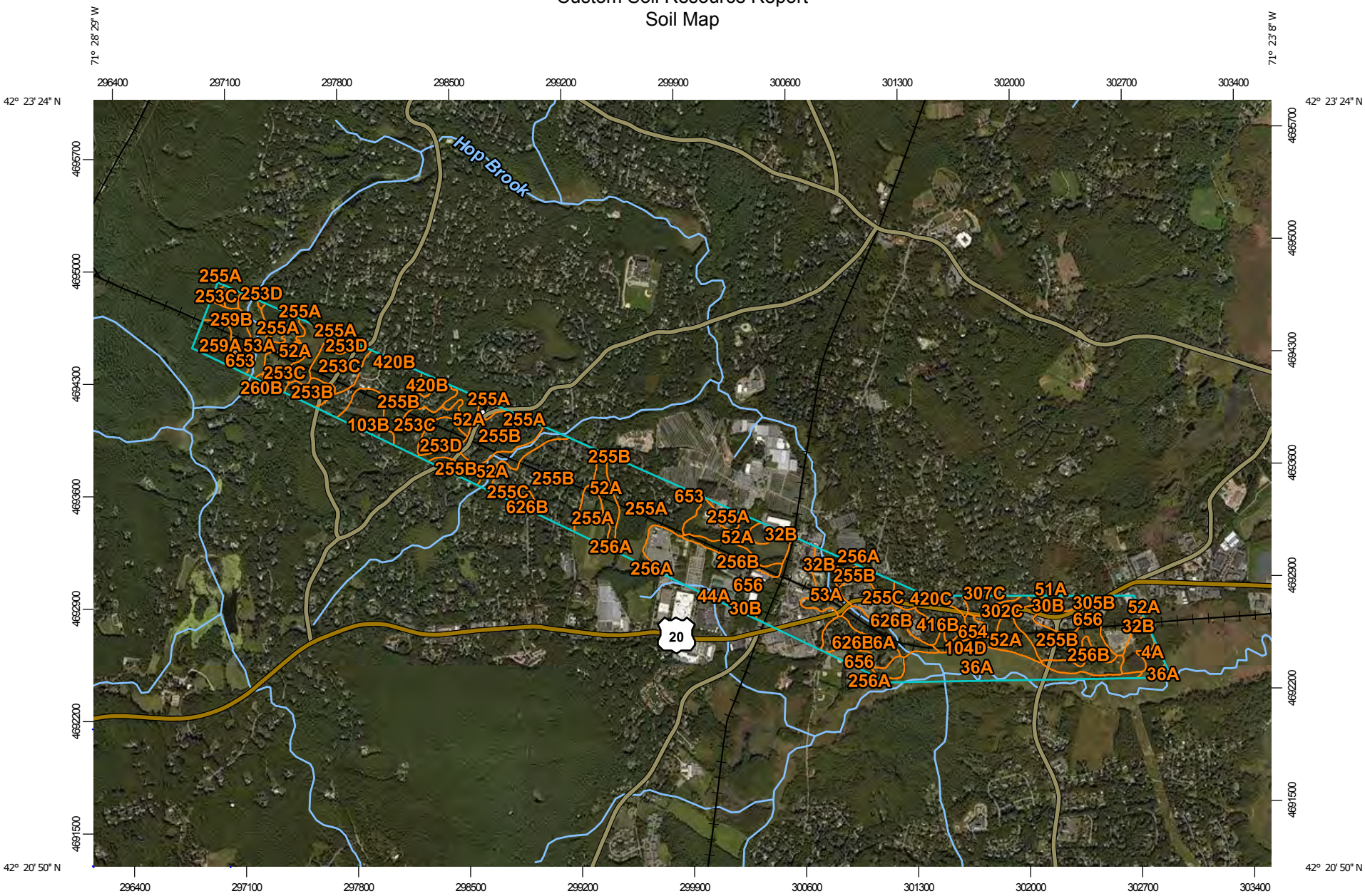
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:33,600 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 450 900 1800 2700

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- 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

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 18, Sep 7, 2018

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

Date(s) aerial images were photographed: Sep 12, 2014—Sep 28, 2014

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	2.4	0.3%
4A	Rippowam fine sandy loam, 0 to 3 percent slopes	5.2	0.6%
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	17.9	2.2%
30B	Raynham silt loam, 0 to 5 percent slopes	6.1	0.7%
32B	Wareham loamy fine sand, 0 to 5 percent slopes	15.5	1.9%
36A	Saco mucky silt loam, 0 to 1 percent slopes	46.4	5.7%
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	1.5	0.2%
51A	Swansea muck, 0 to 1 percent slopes	6.3	0.8%
52A	Freetown muck, 0 to 1 percent slopes	87.6	10.7%
53A	Freetown muck, ponded, 0 to 1 percent slopes	31.6	3.9%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	15.6	1.9%
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	5.8	0.7%
253B	Hinckley loamy sand, 3 to 8 percent slopes	8.7	1.1%
253C	Hinckley loamy sand, 8 to 15 percent slopes	43.3	5.3%
253D	Hinckley loamy sand, 15 to 25 percent slopes	15.2	1.9%
255A	Windsor loamy sand, 0 to 3 percent slopes	83.2	10.2%
255B	Windsor loamy sand, 3 to 8 percent slopes	155.5	19.0%
255C	Windsor loamy sand, 8 to 15 percent slopes	6.2	0.8%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	1.0	0.1%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	21.6	2.6%
259A	Carver loamy coarse sand, 0 to 3 percent slopes	14.6	1.8%
259B	Carver loamy coarse sand, 3 to 8 percent slopes	10.0	1.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	0.4	0.0%
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	8.5	1.0%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	2.5	0.3%
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony	6.2	0.8%
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony	11.5	1.4%
420B	Canton fine sandy loam, 3 to 8 percent slopes	3.7	0.5%
420C	Canton fine sandy loam, 8 to 15 percent slopes	9.1	1.1%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	37.9	4.6%
653	Udorthents, sandy	2.0	0.2%
654	Udorthents, loamy	1.4	0.2%
656	Udorthents-Urban land complex	133.4	16.3%
Totals for Area of Interest		**817.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

1—Water

Map Unit Setting

National map unit symbol: 996p
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear

4A—Rippowam fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 993n
Elevation: 50 to 500 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Rippowam and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rippowam

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy alluvium over sandy and gravelly alluvium derived from granite and gneiss

Typical profile

H1 - 0 to 7 inches: fine sandy loam
H2 - 7 to 18 inches: fine sandy loam, sandy loam
H2 - 7 to 18 inches: sandy loam

H3 - 18 to 40 inches: stratified sand to fine sand
H4 - 40 to 65 inches:

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Saco

Percent of map unit: 10 percent
Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Pootatuck

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Limerick

Percent of map unit: 5 percent
Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

6A—Scarboro mucky fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svky
Elevation: 0 to 1,320 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro

Setting

Landform: Outwash terraces, outwash deltas, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy glaciofluvial deposits derived from schist and/or sandy glaciofluvial deposits derived from gneiss and/or sandy glaciofluvial deposits derived from granite

Typical profile

Oe - 0 to 3 inches: mucky peat
A - 3 to 11 inches: mucky fine sandy loam
Cg1 - 11 to 21 inches: sand
Cg2 - 21 to 65 inches: gravelly coarse sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D

Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 10 percent
Landform: Swamps, bogs
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Wareham

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Walpole

Percent of map unit: 5 percent
Landform: Depressions, deltas, outwash plains, depressions, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

30B—Raynham silt loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 991x
Elevation: 50 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Raynham and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raynham

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Parent material: Loamy glaciolacustrine deposits and/or silty glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 33 inches: silt loam
H3 - 33 to 65 inches: silt

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Birdsall

Percent of map unit: 10 percent
Landform: Flats, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Raypol

Percent of map unit: 5 percent
Landform: Depressions, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Wareham

Percent of map unit: 5 percent
Landform: Terraces, depressions, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

32B—Wareham loamy fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: vqnd
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Wareham and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wareham

Setting

Landform: Depressions, deltas, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 10 inches: loamy fine sand
H2 - 10 to 24 inches: loamy sand
H3 - 24 to 34 inches: stratified sand to fine sand
H4 - 34 to 65 inches: stratified coarse sand to sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Sudbury

Percent of map unit: 10 percent
Landform: Terraces, plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Scarboro

Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Deerfield

Percent of map unit: 5 percent
Landform: Stream terraces, depressions, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

36A—Saco mucky silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: vzt3
Elevation: 50 to 500 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Saco and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saco

Setting

Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip

Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty alluvium

Typical profile

H1 - 0 to 13 inches: mucky silt loam
H2 - 13 to 30 inches: silt loam
H3 - 30 to 45 inches: silt loam
H4 - 45 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 8 percent
Landform: Depressions, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 8 percent
Landform: Bogs, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Limerick

Percent of map unit: 4 percent
Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

44A—Birdsall mucky silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: vzt4
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Birdsall and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Birdsall

Setting

Landform: Depressions, flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty eolian deposits and/or loamy eolian deposits over glaciofluvial deposits and/or ablation till

Typical profile

H1 - 0 to 15 inches: mucky silt loam
H2 - 15 to 30 inches: silt loam
H3 - 30 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Wareham

Percent of map unit: 4 percent
Landform: Deltas, terraces, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 2 percent
Landform: Bogs, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Raypol

Percent of map unit: 2 percent
Landform: Terraces, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

51A—Swansea muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2trl2
Elevation: 0 to 1,140 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Swansea and similar soils: 80 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swansea

Setting

Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material over loose sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 24 inches: muck
Oa2 - 24 to 34 inches: muck
Cg - 34 to 79 inches: coarse sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 16.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 5 percent
Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

52A—Freetown muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t2q9
Elevation: 0 to 1,110 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Freetown and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown

Setting

Landform: Swamps, depressions, depressions, bogs, marshes, kettles
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 19.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 5 percent
Landform: Bogs, kettles, depressions, depressions, marshes, swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

53A—Freetown muck, ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t2qc
Elevation: 0 to 1,140 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Freetown, ponded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown, Ponded

Setting

Landform: Bogs, swamps, kettles, marshes, depressions, depressions

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 19.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, ponded

Percent of map unit: 5 percent
Landform: Depressions on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea, ponded

Percent of map unit: 5 percent
Landform: Depressions, kettles, bogs, swamps, marshes, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

103B—Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 98yc
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton and similar soils: 50 percent
Hollis and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting

Landform: Ground moraines, drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss

Typical profile

H1 - 0 to 5 inches: fine sandy loam
H2 - 5 to 22 inches: sandy loam
H3 - 22 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Hollis

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable, shallow loamy basal till over granite and gneiss

Typical profile

H1 - 0 to 2 inches: fine sandy loam
H2 - 2 to 14 inches: fine sandy loam
H3 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Granite and gneiss

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Minor Components

Canton

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Narragansett
Percent of map unit: 2 percent
Landform: Ridges, hills
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge
Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, toeslope, summit
Landform position (three-dimensional): Head slope, base slope, nose slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Scituate
Percent of map unit: 2 percent
Landform: Hillslopes, depressions
Landform position (two-dimensional): Toeslope, summit
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Unnamed
Percent of map unit: 1 percent

Montauk
Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Head slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

104D—Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes

Map Unit Setting
National map unit symbol: 98yh
Elevation: 0 to 1,000 feet

Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hollis and similar soils: 30 percent
Rock outcrop: 30 percent
Charlton and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Crest, head slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable, shallow loamy basal till over granite and gneiss

Typical profile

H1 - 0 to 2 inches: fine sandy loam
H2 - 2 to 14 inches: fine sandy loam
H3 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 25 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Parent material: Granite and gneiss

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Description of Charlton

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss

Typical profile

H1 - 0 to 5 inches: fine sandy loam
H2 - 5 to 22 inches: sandy loam
H3 - 22 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 15 to 25 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Canton

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Montauk

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Nose slope, head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent

253B—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash terraces, outwash deltas, outwash plains, eskers, moraines, kame terraces, kames
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Moraines, outwash terraces, outwash deltas, kame terraces, outwash plains, kames, eskers
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Outwash deltas, kame terraces, outwash plains, moraines, outwash terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope, head slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Agawam

Percent of map unit: 2 percent
Landform: Outwash terraces, outwash deltas, kame terraces, outwash plains, kames, eskers, moraines
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

253C—Hinckley loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svm9
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Moraines, outwash terraces, outwash deltas, kame terraces, outwash plains, kames, eskers
Landform position (two-dimensional): Shoulder, toeslope, footslope, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser
Down-slope shape: Convex, linear, concave
Across-slope shape: Linear, convex, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Sudbury

Percent of map unit: 5 percent
Landform: Moraines, outwash deltas, outwash terraces, kame terraces, outwash plains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Outwash plains, kames, eskers, moraines, outwash terraces
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Kames, eskers, moraines, kame terraces, outwash plains, outwash terraces, outwash deltas
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser
Down-slope shape: Linear, concave, convex
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

253D—Hinckley loamy sand, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2svmc
Elevation: 0 to 1,460 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash terraces, outwash deltas, kame terraces, kames, outwash plains, eskers, moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser
Down-slope shape: Linear, concave, convex
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 8 percent
Landform: Kames, outwash terraces, eskers, moraines, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Eskers, moraines, kame terraces, kames, outwash plains, outwash terraces, outwash deltas
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser
Down-slope shape: Convex, concave, linear
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent
Landform: Outwash deltas, kame terraces, eskers, outwash terraces, outwash plains, moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread

Down-slope shape: Concave, linear, convex
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

255A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Deerfield, loamy sand

Percent of map unit: 10 percent
Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand

Percent of map unit: 5 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

255B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Outwash terraces, deltas, outwash plains, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hinckley, loamy sand

Percent of map unit: 10 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces, deltas, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

255C—Windsor loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svkq

Elevation: 0 to 1,260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: — error in exists on —
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ap - 1 to 11 inches: loamy sand
Bw - 11 to 31 inches: loamy sand
C - 31 to 65 inches: sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, head slope, nose slope, side slope, rise
Down-slope shape: Convex

Across-slope shape: Linear, convex
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Terraces, deltas, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

256A—Deerfield loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2xfg8
Elevation: 0 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash terraces, outwash deltas, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear, concave
Across-slope shape: Concave, linear, convex
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None

Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 11.0
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor
Percent of map unit: 7 percent
Landform: Outwash terraces, kame terraces, outwash deltas, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Wareham
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury
Percent of map unit: 2 percent
Landform: Kame terraces, outwash deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear, concave
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Ninigret
Percent of map unit: 1 percent
Landform: Kame terraces, outwash plains, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

256B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, convex, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 11.0
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave, convex
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Outwash plains, kame terraces, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

259A—Carver loamy coarse sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9911
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Carver and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carver

Setting

Landform: Deltas, plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 7 inches: loamy coarse sand
H2 - 7 to 13 inches: loamy coarse sand
H3 - 13 to 21 inches: coarse sand
H4 - 21 to 35 inches: gravelly coarse sand
H5 - 35 to 65 inches: coarse sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Deltas, flats, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent
Landform: Ridges, terraces, eskers
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Quonset

Percent of map unit: 2 percent
Landform: Kames, terraces, eskers
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Deerfield

Percent of map unit: 2 percent
Landform: Deltas, stream terraces, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

259B—Carver loamy coarse sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: vqpv
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Carver and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carver

Setting

Landform: Plains, deltas, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 7 inches: loamy coarse sand
H2 - 7 to 13 inches: loamy coarse sand
H3 - 13 to 21 inches: coarse sand
H4 - 21 to 35 inches: gravelly coarse sand
H5 - 35 to 65 inches: coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Flats, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent
Landform: Ridges, terraces, eskers
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Deerfield

Percent of map unit: 2 percent
Landform: Stream terraces, depressions, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Quonset

Percent of map unit: 2 percent
Landform: Eskers, kames, terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

260B—Sudbury fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9915
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sudbury and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sudbury

Setting

Landform: Plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Friable loamy eolian deposits over loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 20 inches: fine sandy loam
H3 - 20 to 27 inches: loamy sand
H4 - 27 to 65 inches: stratified gravelly coarse sand to sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 8 percent
Landform: Plains, terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Wareham

Percent of map unit: 4 percent
Landform: Depressions, terraces, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Windsor

Percent of map unit: 2 percent
Landform: Terraces, deltas, flats
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent

302C—Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w80s
Elevation: 0 to 1,080 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Montauk, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Extremely Stony

Setting

Landform: Hills, recessionial moraines, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material

Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Scituate, extremely stony
Percent of map unit: 8 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Canton, extremely stony
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, extremely stony
Percent of map unit: 2 percent
Landform: Ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

305B—Paxton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2t2qp
Elevation: 0 to 1,570 feet
Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Paxton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: fine sandy loam
Cd - 26 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 18 to 39 inches to densic material
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Woodbridge

Percent of map unit: 9 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury

Percent of map unit: 6 percent
Landform: Drainageways, hills, ground moraines, depressions
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Charlton

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

307C—Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w676
Elevation: 0 to 1,490 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Extremely Stony

Setting

Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Charlton, extremely stony

Percent of map unit: 8 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge, extremely stony

Percent of map unit: 6 percent
Landform: Ground moraines, drumlins, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 1 percent
Landform: Ground moraines, depressions, drumlins, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

416B—Narragansett silt loam, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9940
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Narragansett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Narragansett

Setting

Landform: Ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits and/or friable silty eolian deposits over loose sandy glaciofluvial deposits derived from metamorphic rock and/or friable sandy basal till derived from metamorphic rock

Typical profile

H1 - 0 to 2 inches: slightly decomposed plant material
H2 - 2 to 7 inches: silt loam
H3 - 7 to 35 inches: silt loam
H4 - 35 to 60 inches: very gravelly loamy sand
H5 - 60 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 18 to 35 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Haven

Percent of map unit: 10 percent
Landform: Terraces, plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Canton

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Scituate

Percent of map unit: 5 percent
Landform: Depressions, hillslopes
Landform position (two-dimensional): Toeslope, summit
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

420B—Canton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w81b
Elevation: 0 to 1,180 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Canton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Landform: Hills, moraines, ridges

Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: gravelly fine sandy loam
2C - 26 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Scituate

Percent of map unit: 10 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Montauk

Percent of map unit: 5 percent
Landform: Moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Charlton

Percent of map unit: 4 percent
Landform: Hills, ridges, ground moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope

Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Swansea
Percent of map unit: 1 percent
Landform: Bogs, swamps, kettles, marshes, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

420C—Canton fine sandy loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 2w817
Elevation: 0 to 1,330 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Canton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting
Landform: Ridges, hills, moraines
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile
Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: gravelly fine sandy loam
2C - 26 to 65 inches: gravelly loamy sand

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Montauk

Percent of map unit: 6 percent
Landform: Hills, drumlins, moraines, ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Scituate

Percent of map unit: 6 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Charlton

Percent of map unit: 4 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Newfields

Percent of map unit: 4 percent
Landform: Ground moraines, hills, moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

626B—Merrimac-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyr9
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Merrimac and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Kames, eskers, moraines, outwash terraces, outwash plains
Landform position (two-dimensional): Backslope, footslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 22 inches: fine sandy loam
Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand
2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.4 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Sudbury

Percent of map unit: 5 percent
Landform: Outwash plains, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landform: Deltas, outwash plains, eskers, kames
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, crest, head slope, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Deltas, outwash plains, dunes, outwash terraces
Landform position (three-dimensional): Riser, tread
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

653—Udorthents, sandy

Map Unit Setting

National map unit symbol: vr1k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, sandy, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Sandy

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Urban land

Percent of map unit: 5 percent
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent

654—Udorthents, loamy

Map Unit Setting

National map unit symbol: vr1l
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, loamy, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Loamy

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Udorthents, sandy

Percent of map unit: 10 percent
Hydric soil rating: No

Udorthents, wet substratum

Percent of map unit: 5 percent
Hydric soil rating: Yes

Urban land

Percent of map unit: 5 percent
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear

656—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 995k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 40 percent
Urban land: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Canton

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Paxton

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Terraces, plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

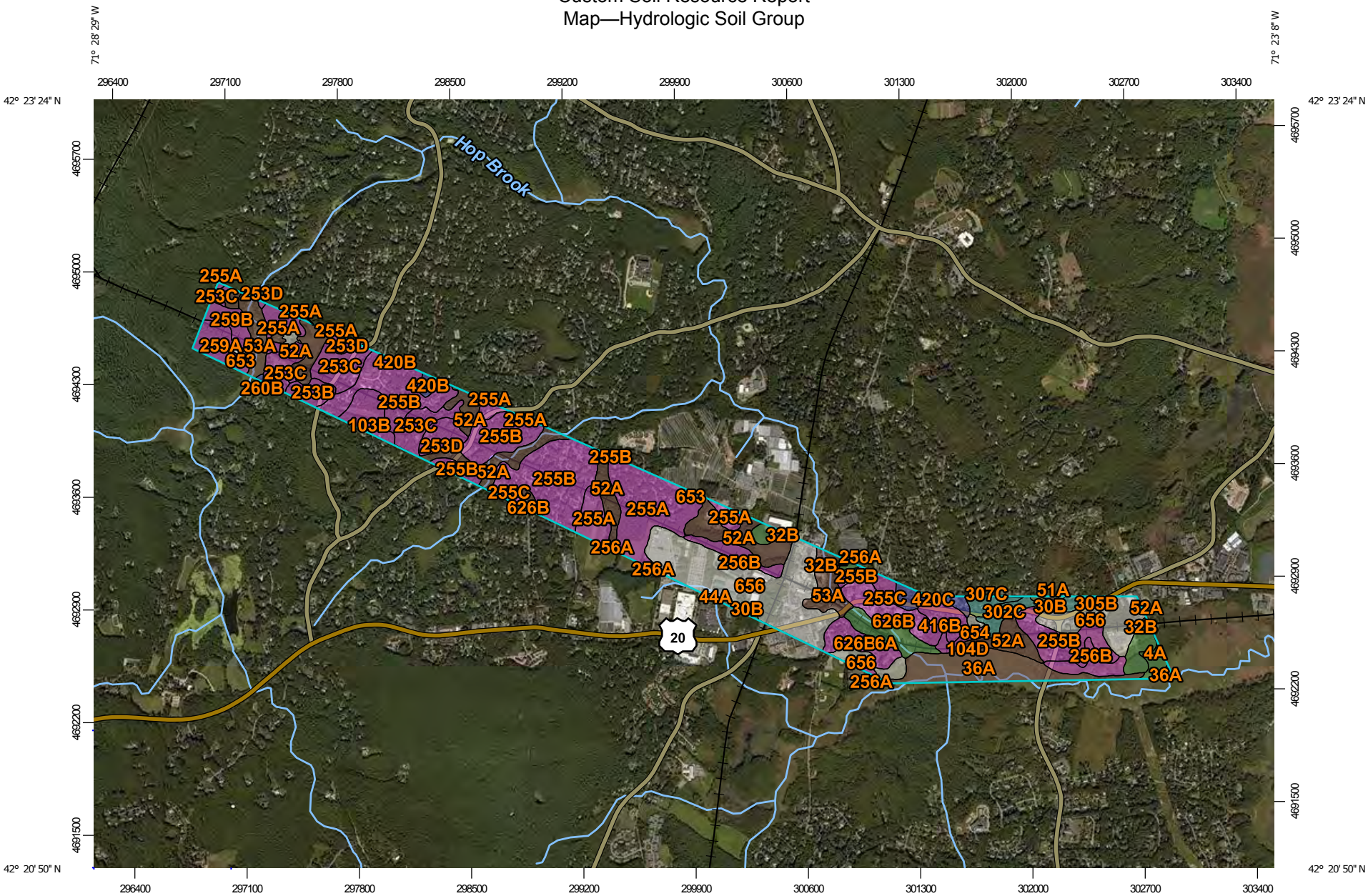
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Map—Hydrologic Soil Group



Map Scale: 1:33,600 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 450 900 1800 2700

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 18, Sep 7, 2018

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

Date(s) aerial images were photographed: Sep 12, 2014—Sep 28, 2014

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		2.4	0.3%
4A	Rippowam fine sandy loam, 0 to 3 percent slopes	A/D	5.2	0.6%
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	A/D	17.9	2.2%
30B	Raynham silt loam, 0 to 5 percent slopes	C/D	6.1	0.7%
32B	Wareham loamy fine sand, 0 to 5 percent slopes	A/D	15.5	1.9%
36A	Saco mucky silt loam, 0 to 1 percent slopes	B/D	46.4	5.7%
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	C/D	1.5	0.2%
51A	Swansea muck, 0 to 1 percent slopes	B/D	6.3	0.8%
52A	Freetown muck, 0 to 1 percent slopes	B/D	87.6	10.7%
53A	Freetown muck, ponded, 0 to 1 percent slopes	B/D	31.6	3.9%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	A	15.6	1.9%
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	A	5.8	0.7%
253B	Hinckley loamy sand, 3 to 8 percent slopes	A	8.7	1.1%
253C	Hinckley loamy sand, 8 to 15 percent slopes	A	43.3	5.3%
253D	Hinckley loamy sand, 15 to 25 percent slopes	A	15.2	1.9%
255A	Windsor loamy sand, 0 to 3 percent slopes	A	83.2	10.2%
255B	Windsor loamy sand, 3 to 8 percent slopes	A	155.5	19.0%
255C	Windsor loamy sand, 8 to 15 percent slopes	A	6.2	0.8%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	1.0	0.1%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	A	21.6	2.6%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
259A	Carver loamy coarse sand, 0 to 3 percent slopes	A	14.6	1.8%
259B	Carver loamy coarse sand, 3 to 8 percent slopes	A	10.0	1.2%
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	B	0.4	0.0%
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	C	8.5	1.0%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	C	2.5	0.3%
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony	C	6.2	0.8%
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony	A	11.5	1.4%
420B	Canton fine sandy loam, 3 to 8 percent slopes	B	3.7	0.5%
420C	Canton fine sandy loam, 8 to 15 percent slopes	B	9.1	1.1%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	37.9	4.6%
653	Udorthents, sandy		2.0	0.2%
654	Udorthents, loamy		1.4	0.2%
656	Udorthents-Urban land complex		133.4	16.3%
Totals for Area of Interest			**817.8**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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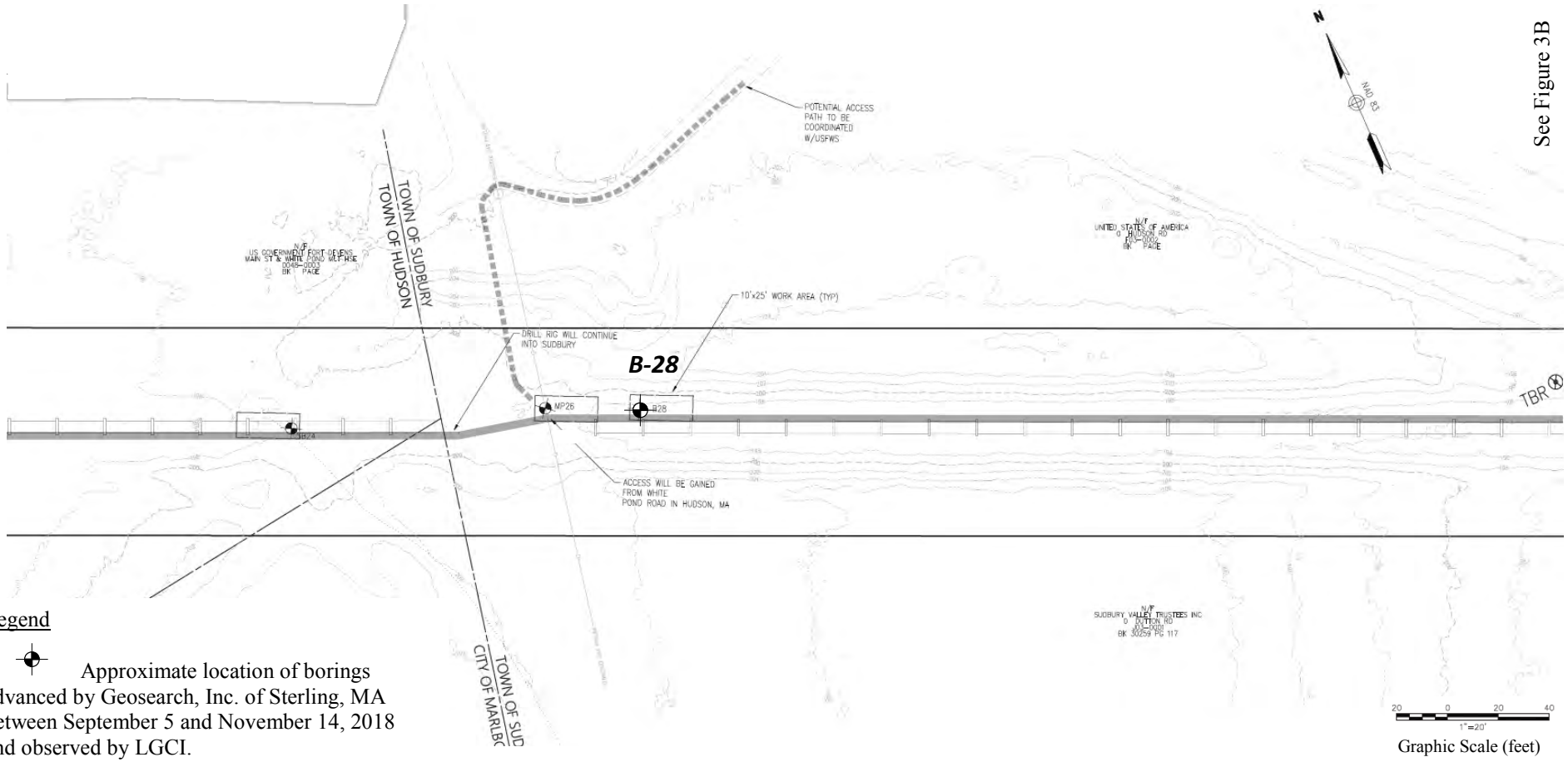


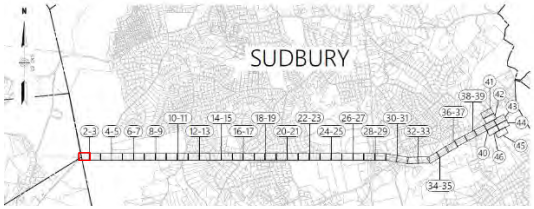
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

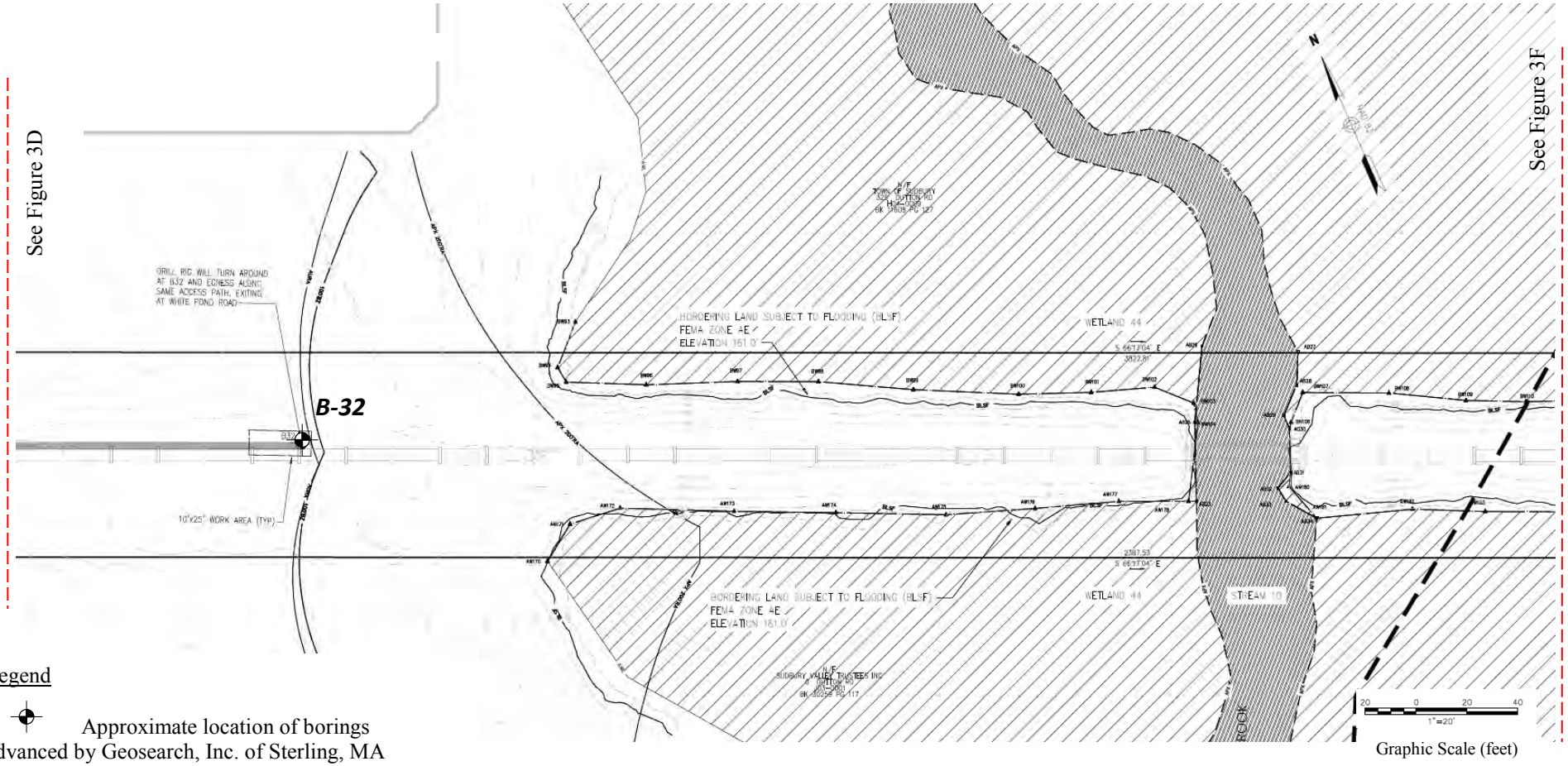
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3A – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



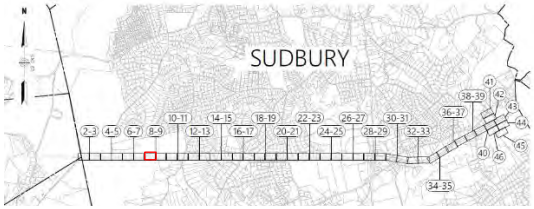
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

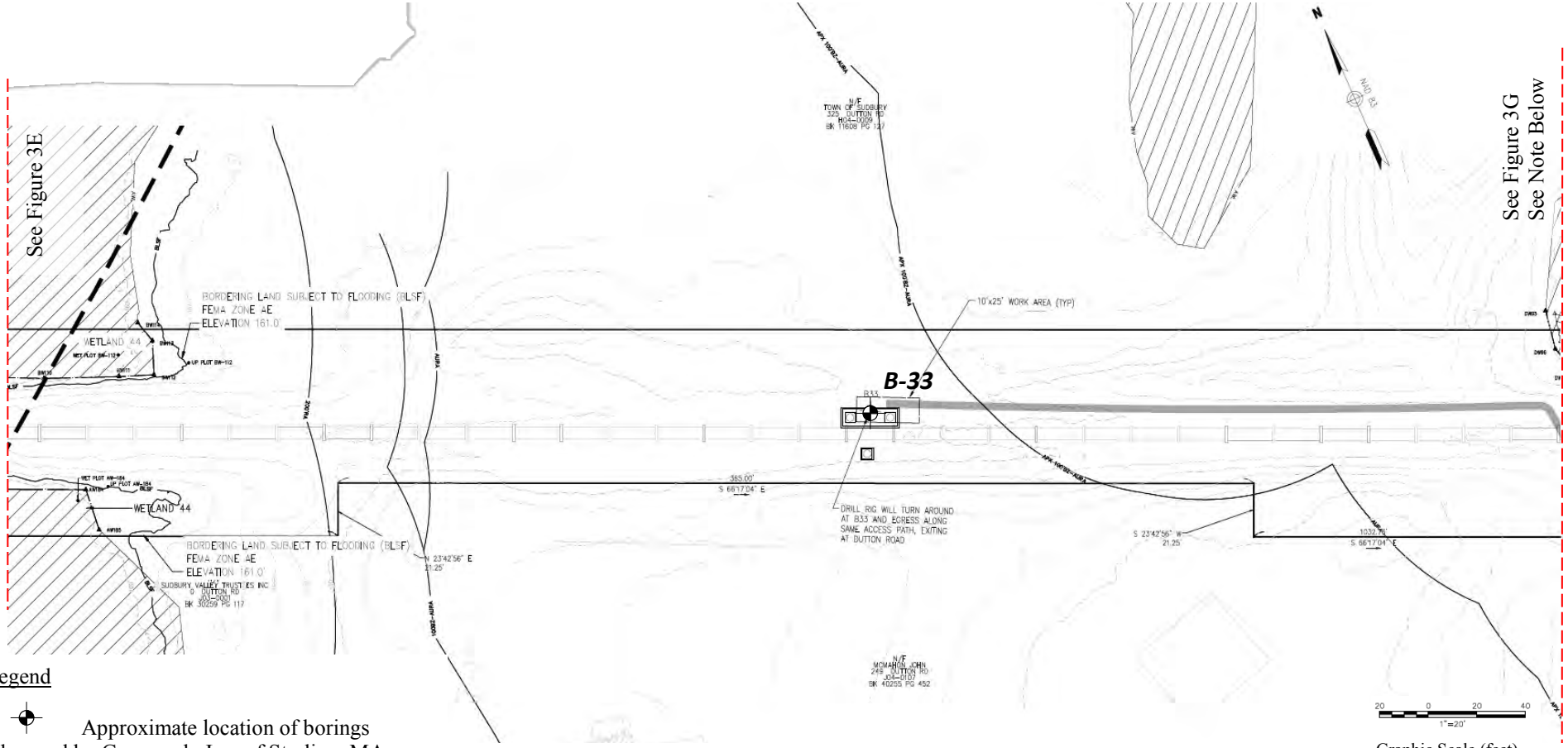
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3E – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



Graphic Scale (feet)

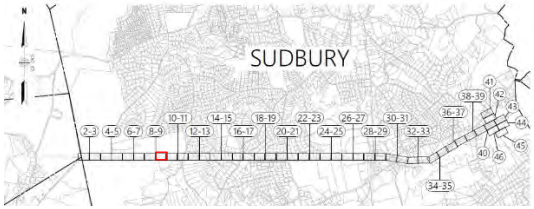
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

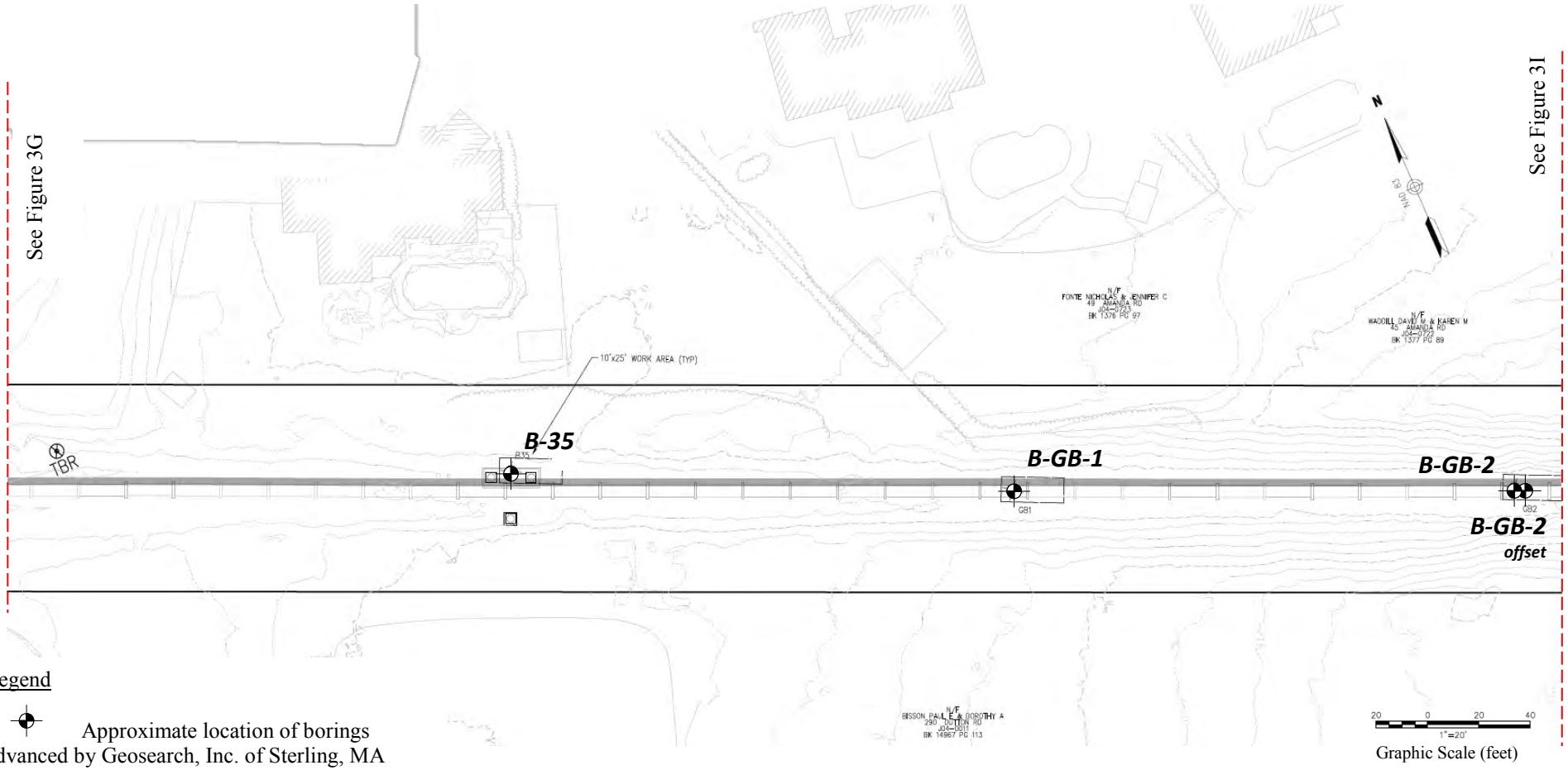
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The subsequent sheet (Sheet 10) was skipped because the geotechnical boring shown on it is also shown within the area shown on Sheet 11.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3F – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



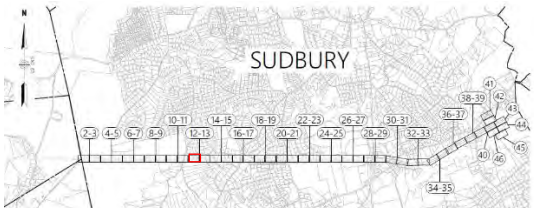
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

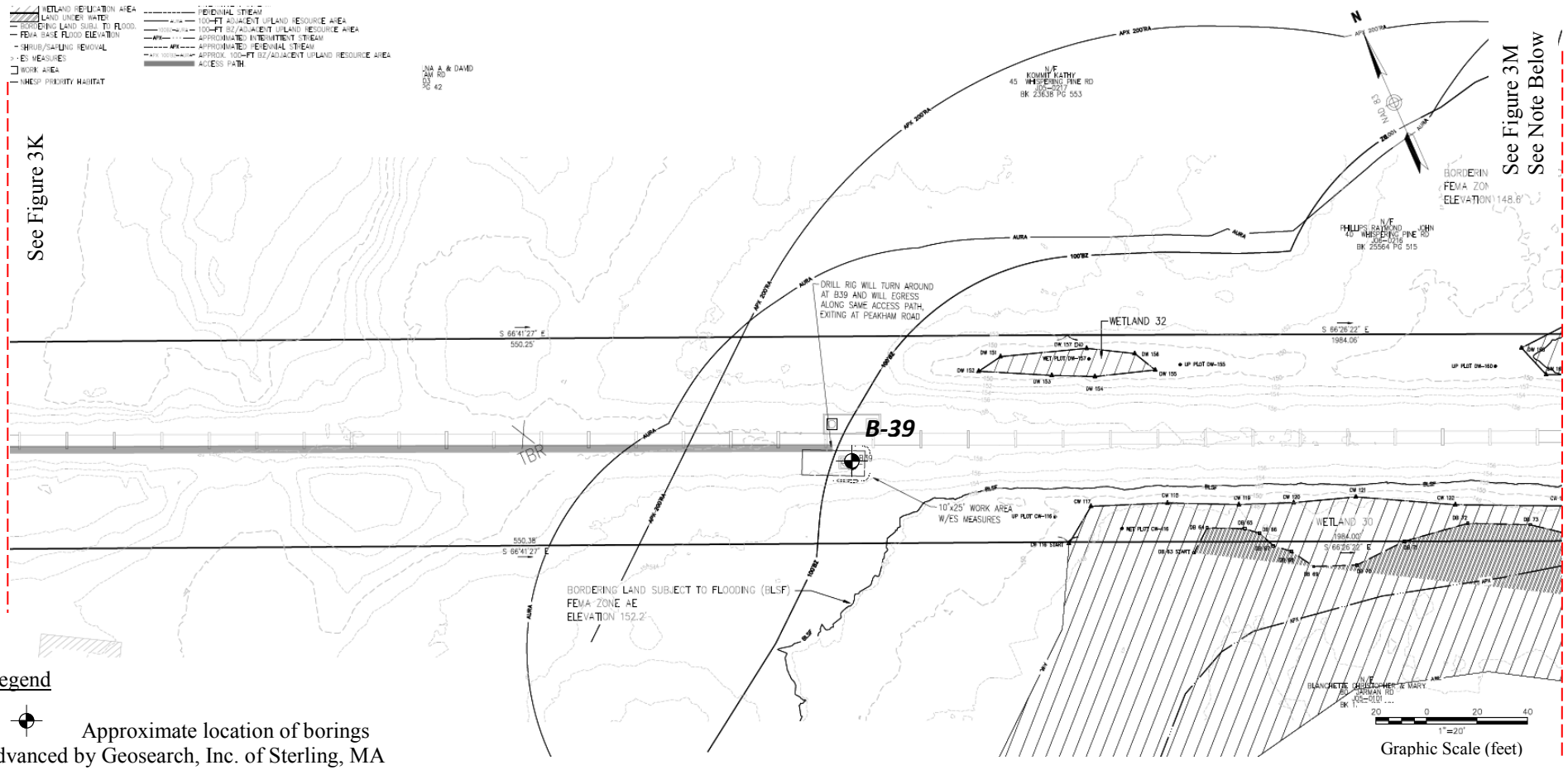
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines.

Key Plan



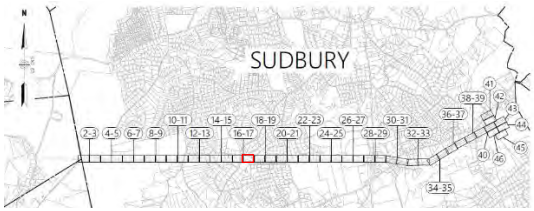
Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3H – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

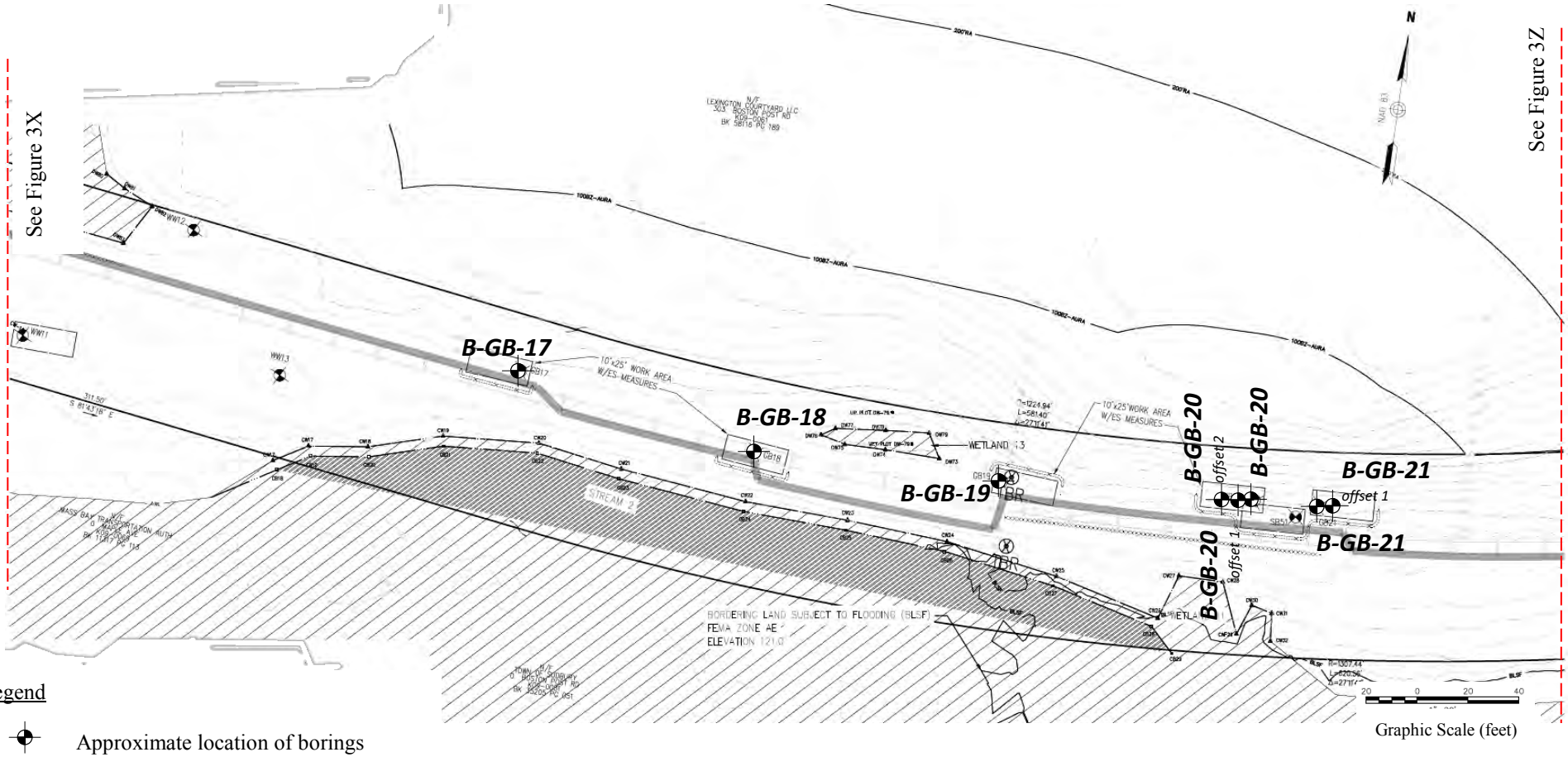
Key Plan



Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The subsequent sheet (Sheet 18) was skipped because no geotechnical borings are located within the area shown on Sheet 18.

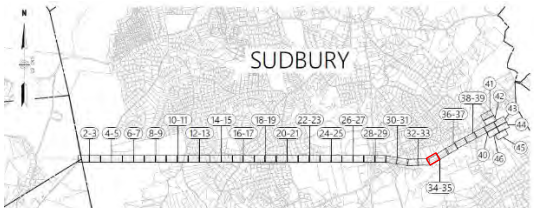
Client:	Project:	Figure 3L – Boring Location Plan	
Vanasse Hangen Brustlin, Inc.	Proposed Transmission Power Line Borings		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

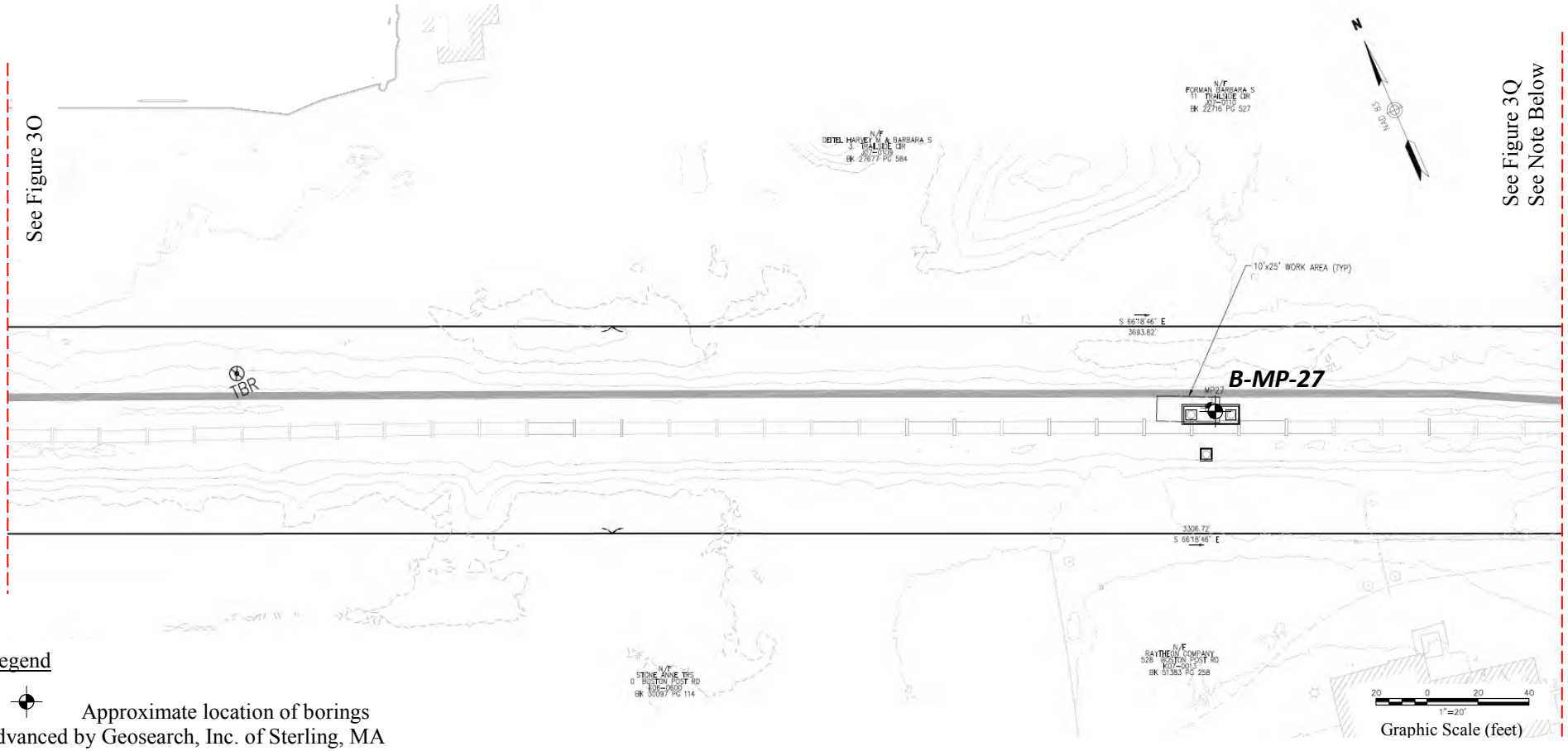
Key Plan



Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines.

Client:	Project:	Figure 3Y – Boring Location Plan	
Vanasse Hangen Brustlin, Inc.	Proposed Transmission Power Line Borings		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



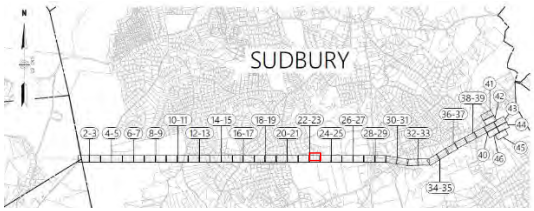
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

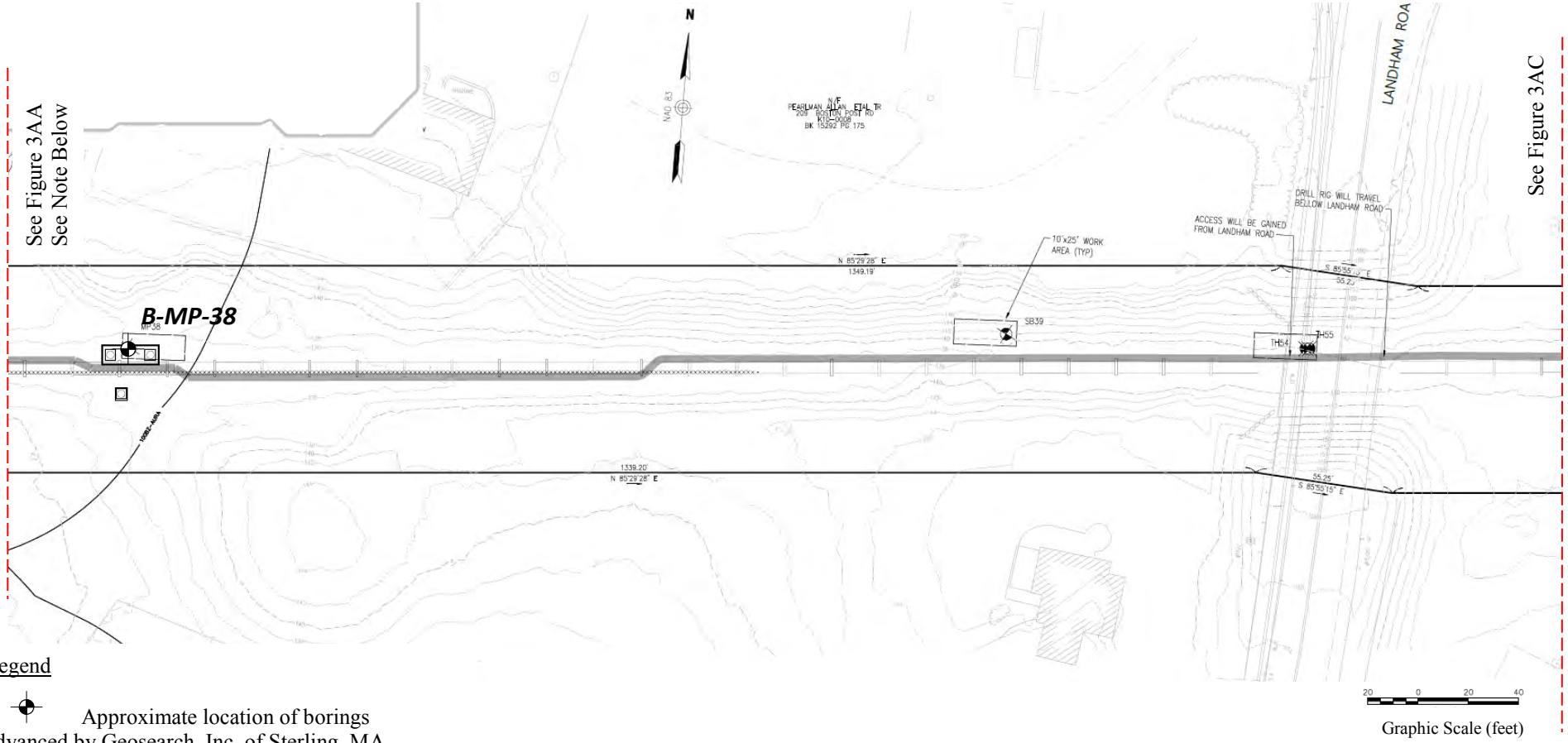
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The subsequent sheet (Sheet 24) was skipped because no geotechnical borings are located within the area shown on Sheet 24.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3P – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



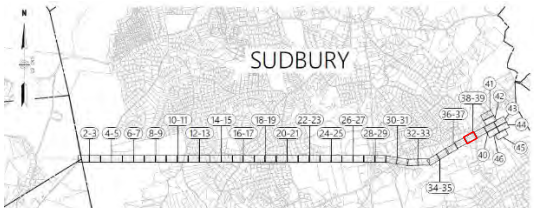
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

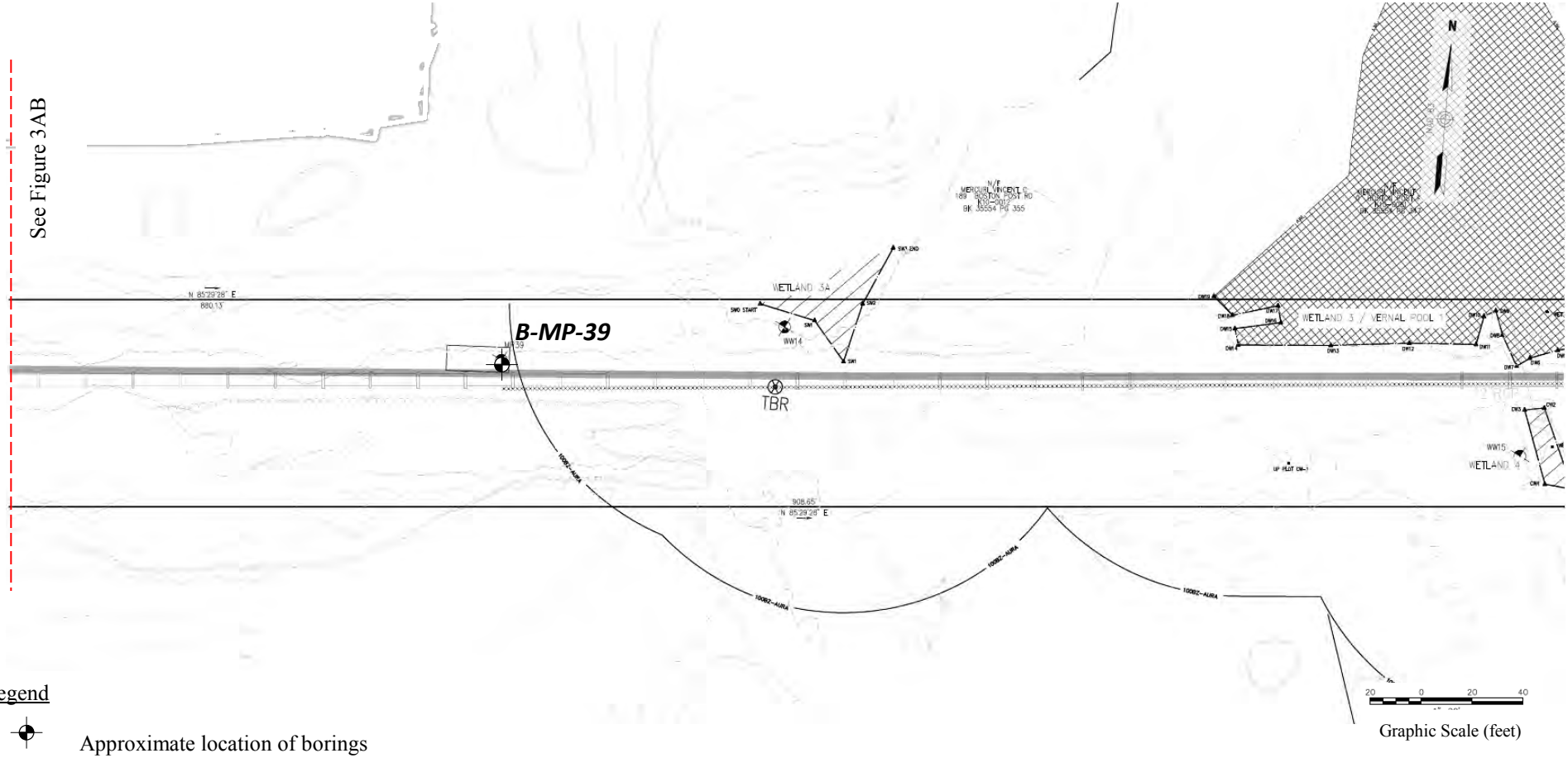
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The previous sheet (Sheet 37) were skipped because no geotechnical borings are located within the area shown on Sheet 37.

Key Plan



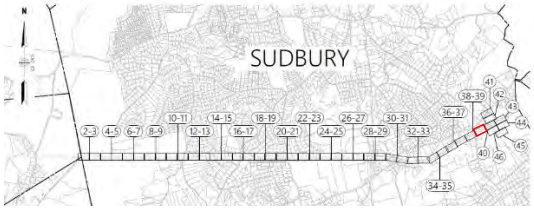
Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3AB – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

Key Plan



Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed line is not a match line.

Client:	Project:	Figure 3AC – Boring Location Plan	
Vanasse Hangen Brustlin, Inc.	Proposed Transmission Power Line Borings		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018

LGCI
Lahlaf Geotechnical Consulting, Inc.
100 Chelmsford Road, Suite 2
Billerica, MA 01862
Telephone: (978) 330-5912
Fax: (978) 330-5056

BORING LOG

B-28

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/13/18 **DATE COMPLETED:** 11/13/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 198 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 50s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 5.4 ft. / El. 192.6 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El. (ft.)	Material Description
		0	S1	3-2-7-2 (9)	24/17		Forest Mat	0.2 197.8	S1 - Encountered ~2 inches of forest mat material
							Fill		Top 8": Silty SAND (SM), fine, trace medium, 25-30% fines, trace fine gravel, trace organic fines, trace coal ash, dark brown, moist Bot. 7": Silty SAND (SM), fine, trace medium, ~20% fines, ~5% fine subangular gravel, trace organic fines, light brown, moist
		2						2.0 196.0	
	195.0		S2	19-33-62-59 (95)	24/20		Sand		S2 - Silty SAND (SM), fine, trace medium to coarse, ~20% fines, 0-5% fine gravel, light brown, moist
		4	S3	15-50-64-71 (114)	24/21				S3 - Similar to S2
5									
		6	S4	58-61-72	18/6				S4 - Silty SAND (SM), fine, trace medium to coarse, ~15% fines, ~5% fine gravel, light brown, moist
		7.5							
	190.0	8	S5	13-26-18-14 (44)	24/10				S5 - Well Graded SAND with Silt and Gravel (SW-SM), fine to medium, trace coarse, 10-15% fines, ~15% fine to coarse gravel, light brown, wet
10		10						10.0	Bottom of borehole at 10.0 feet. Backfilled borehole with drill cuttings.
	185.0								
15									
	180.0								
20									
	175.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

LGCI
Lahlaf Geotechnical Consulting, Inc.
100 Chelmsford Road, Suite 2
Billerica, MA 01862
Telephone: (978) 330-5912
Fax: (978) 330-5056

BORING LOG

B-32

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/14/18 **DATE COMPLETED:** 11/14/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 172 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 30s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-3-4-4 (7)	24/20		Topsoil	0.6 171.4	S1 - Top 8": Silty SAND (SM), fine to medium, ~25% fines, trace organic fines, trace roots, trace coal ash, dark brown, moist Bot. 12": Poorly Graded SAND (SP), fine, trace medium, ~5% fines, brown, moist
	170.0	2	S2	6-6-6-8 (12)	24/19		Sand		S2 - Similar to Bot. 12" of S1
5		4	S3	4-5-6-7 (11)	24/18				S3 - Similar to Bot. 12" of S1
	165.0	6	S4	8-7-7-9 (14)	24/19				S4 - Poorly Graded SAND (SP), fine, trace medium, ~5% fines, light brown, moist
10		8 / 10	S5	4-4-5-5 (9)	24/21			10.0	S5 - Similar to S4
	160.0								Bottom of borehole at 10.0 feet. Backfilled borehole with drill cuttings.
15									
	155.0								
20									
	150.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/08/18 **DATE COMPLETED:** 11/08/18
BORING LOCATION: MBTA ROW, West of Dutton Road
COORDINATES: NA
SURFACE El.: 170 ft. (see note 1) **TOTAL DEPTH:** 17 ft.
WEATHER: 50s / Sunny
GROUNDWATER LEVELS:
- **DURING DRILLING:** -
- **AT END OF DRILLING:** 12.5 ft. / El. 157.5 ft.
- **OTHER:** -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-10-42-28 (52)	24/15		Forest Mat / Topsoil	0.5 / 169.5	S1 - Encountered ~1 inches of forest mat material at ground surface Top 5": Silty SAND (SM), fine to medium, 25-30% fines, trace coal ash, trace organic fines, trace roots, dark brown, moist
		2	S2	16-14-10-11 (24)	24/12	1	Fill		Mid. 4": Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, ~15% fine to coarse subangular gravel, trace organic fines, trace roots, brown, moist Bot. 5": Angular stone fragments REMARK 1: Hevay auger chatter from 2 feet to 4 feet.
		4	S3	4-13-12-15 (25)	24/18	2		4.9 / 165.1	S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 15-20% fine to coarse subangular gravel, trace organic fines, brown, moist REMARK 2: Heavy auger chatter 4 feet to 8 feet.
5	165.0	6	S4	28-27-24-20 (51)	24/19				S3 - Top 5": Silty SAND (SM), fine to medium, 25-30% fines, 5-10% fine gravel, trace coal ash, trace organic fines, trace roots, dark brown, moist (Buried Topsoil) Mid. 6": Poorly Graded SAND with Silt and Gravel (SP-SM), fine, trace medium, 5-10% fines, 30-35% fine to coarse subangular gravel, trace organic fines, brown, moist
		8	S5	10-12-17-18 (29)	24/12				Bot. 7": Silty SAND (SM), fine, trace medium, 30-35% slightly plastic fines, trace fine subangular gravel, trace stone fragments, light brown, moist S4 - Silty SAND (SM), fine to medium, trace coarse, ~20% fines, 30-35% fine to coarse subangular gravel, brown, moist
10	160.0	10	S6	8-15-20-19 (35)	24/16	3	Sand		S5 - Silty GRAVEL with Sand (GM), fine to coarse, angular, ~25% fines, ~35% fine to coarse sand, light brown, wet REMARK 3: Heavy auger chatter from 10 feet to 15 feet. S6 - Silty SAND with Gravel (SM), fine to medium, ~25% fines, ~15% fine subangular gravel, light brown, wet
		12							
15	155.0	15	S7	11-21-15-17 (36)	24/16				S7 - Similar to S6, fine to coarse, 20-25% fines
		17						17.0	Bottom of borehole at 17.0 feet. Backfilled borehole with drill cuttings.
20	150.0								
25	145.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-35

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 09/06/18 **DATE COMPLETED:** 09/06/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 182 ft. (see note 1) **TOTAL DEPTH:** 8 ft.
WEATHER: 90s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TS **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	6-5-17-42 (22)	24/24		Fill	1.3	S1 - Top 15": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, ~5% fine subrounded gravel, trace organic fines, trace roots, trace coal, brown to orange, moist
	180.0	2	S2	33-43-26-22 (69)	24/16		Sand	180.7	Bot. 9": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, ~10% fines, ~25% fine to coarse subrounded to subangular gravel, light brown, moist S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 15-20% fine to coarse subangular gravel, light brown to orange, moist
		4	S3	6-16-38-78 (54)	24/12				S3 - Similar to S2, 10-15% fines
5		6	S4	36-84	12/8				S4 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, ~20% fine to coarse subangular gravel, angular stone fragments, gray, moist
	175.0	7				1			REMARK 1: Heavy drill chatter from 7 feet to 8 feet.
						2		8.0	REMARK 2: Encountered auger refusal at 8 feet.
									Bottom of borehole at 8.0 feet. Backfilled borehole with drill cuttings.
10	170.0								
15	165.0								
20	160.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 09/05/18 **DATE COMPLETED:** 09/05/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 180 ft. (see note 1) **TOTAL DEPTH:** 6 ft.
WEATHER: 90s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: Not encountered (NE)
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TS **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	5-5-20-31 (25)	24/15		Fill	0.8	S1 - Top 9": Silty SAND (SM), fine to coarse, ~25% fines, 10-15% fine to coarse subangular gravel, trace organic fines, trace roots, trace coal, dark brown, moist
		2	S2	40-46-47-48 (93)	24/19		Sand		Bot. 6": Silty SAND (SM), fine to medium, trace coarse, ~15% fines, 5-10% fine subangular gravel, light brown, moist S2 - Silty SAND (SM), fine to coarse, 15-20% fines, 10-15% fine subangular gravel, angular stone fragments, light brown, moist
		4	S3	26-52-60-53 (112)	24/11				S3 - Similar to S2
5	175.0	6						6.0	
									Bottom of borehole at 6.0 feet. Backfilled borehole with drill cuttings.
10	170.0								
15	165.0								
20	160.0								
25	155.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-2

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 09/05/18 **DATE COMPLETED:** 09/05/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 180 ft. (see note 1) **TOTAL DEPTH:** 3 ft.
WEATHER: 90s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: Not encountered (NE)
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TS **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	6-9-12-24 (21)	24/17		Fill	0.6 179.4	S1 - Top 7": Silty SAND with Gravel (SM), fine, trace medium to coarse, ~30% fines, ~15% fine to coarse subangular gravel, trace organic fines, trace roots, dark brown, moist
		2 2.3	S2	120/4"	4/1	1	Sand	3.0	Bot. 10": Silty SAND (SM), fine to coarse, ~20% fines, ~10% fine subrounded gravel, brown, moist S2 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, ~25% fine to coarse subangular gravel, light brown to gray, moist REMARK 1: Encountered auger refusal at 3 feet. Bottom of borehole at 3.0 feet. Backfilled borehole with drill cuttings.
5	175.0								
10	170.0								
15	165.0								
20	160.0								
25	155.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/09/18 **DATE COMPLETED:** 11/09/18
BORING LOCATION: MBTA ROW, East of Pakham Road
COORDINATES: NA
SURFACE El.: 158 ft. (see note 1) **TOTAL DEPTH:** 15 ft.
WEATHER: 40s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 9.5 ft. / El. 148.5 ft.
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Drive and wash with 3-inch casing
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-4-6-6 (10)	24/24		Forest Mat / Topsoil	0.2 / 0.8 / 157.2	S1 - Encountered ~2 inches of forest mat material at ground surface; Top 7": Silty SAND (SM), fine to medium, ~25% fines, trace coal ash, trace organic fines, trace roots, dark brown, moist
	155.0	2	S2	3-3-5-5 (8)	24/19		Fill		Bot. 15": Poorly Graded SAND with Silt (SP-SM), fine, trace medium, ~10% fines, trace organic fines, orange, moist; S2 - Silty SAND (SM), fine, trace medium, ~25% fines, trace organic fines, trace roots, brown, moist
5		4	S3	3-3-4-5 (7)	24/21			6.0	S3 - Similar to S2, no roots
	150.0	6	S4	7-9-10-11 (19)	24/20		Sand	152.0	S4 - Poorly Graded SAND (SP), fine, trace medium, ~5% fines, light brown, moist
10		8	S5	5-7-10-11 (17)	24/15				S5 - Similar to S4, wet
	145.0	10							
15		13	S6	8-7-6-11 (13)				15.0	S6 - Similar to S4
		15							Bottom of borehole at 15.0 feet. Backfilled borehole with drill cuttings.
	140.0								
20									
	135.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/17/18 **DATE COMPLETED:** 10/17/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 128 ft. (see note 1) **TOTAL DEPTH:** 20 ft.
WEATHER: 60s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 6.8 ft. / El. 121.2 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.1	S1	3-3-2-1 (5)	24/13		Forest Mat	0.3 / 127.7	Encountered ~4 inches of forest mat material. S1 - Top 5": Silty SAND (SM), fine to medium, trace coarse, ~30% fines, 5-10% coal ash, trace fine subangular gravel, trace organic fines, trace roots, trace wood, dark brown, moist
		2.1							Bot. 8": Silty SAND (SM), fine to medium, trace coarse, ~15% fines, trace organic fines, trace roots, trace coal ash, brown, moist
	125.0	2	S2	2-1-3-5 (4)	24/21		Fill		S2 - Silty SAND (SM), fine, 25-30% fines, 5-10% fine subangular gravel, trace organic fines, trace roots, light brown, moist
		4	S3	2-3-5-7 (8)	24/17				S3 - Silty SAND (SM), fine, ~25% fines, 5-10% fine subangular gravel, trace organic fines, trace roots, light brown to orange, moist
5		6	S4	2-36-27-26 (63)	24/13			6.4 / 121.6	S4 - Top 5": Silty SAND (SM), fine to coarse, ~25% fines, ~5% fine subangular gravel, trace organic fines, trace roots, trace peat fibers, trace wood, dark brown, moist
	120.0	8	S5	3-6-8-6 (14)	24/20		Sand		Bot. 8": Silty SAND with Gravel (SM), fine to coarse, ~20% fines, 15-20% fine to coarse subangular gravel, brown to orange, wet S5 - Silty SAND (SM), fine, trace medium, 25-30% fines, trace fine subangular gravel, light brown with orange mottles, wet
10		10							
	115.0	13	S6	3-4-10-8 (14)	24/24				S6 - Top 18": SILT with Sand (ML), nonplastic, ~15% fine sand, light brown, wet
15		15							Bot. 6": Silty SAND (SM), fine, trace medium to coarse, ~35% fines, trace fine subangular gravel, light brown, wet
	110.0	18	S7	4-3-5-6 (8)	24/22				S7 - Top 10": Silty SAND (SM), fine to coarse, 35-40% fines, trace fine subangular gravel, light brown, wet Bot. 12": SILT with Sand (ML), nonplastic, ~15% fine sand, light brown, wet
20		20						20.0	Bottom of borehole at 20.0 feet. Backfilled borehole with drill cuttings.
	105.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-18

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/18/18 **DATE COMPLETED:** 10/18/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 126 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 40s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 6.0 ft. / El. 120.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	125.0	0	S1	8-18-21-18 (39)	24/9		Forest Mat	0.3 / 125.8	S1 - Silty SAND (SM), fine to coarse, ~15% fines, 5-10% coal ash, trace organic fines, trace roots, trace wood, dark brown, moist
		2	S2	18-14-8-9 (22)	24/14		Fill		S2 - Top 4": Similar to S1, ~5% coal ash, trace leaves Bot. 10": Poorly Graded SAND with Silt (SP-SM), fine, trace medium to coarse, 5-10% fines, trace organic fines, trace roots, light brown, moist
5		4	S3	4-11-16-9 (27)	24/9				S3 - Top 5": Silty SAND (SM), fine, trace medium to coarse, 25-30% fines, roots, trace organic fines, trace wood, brown, moist Bot. 4": Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, ~15% fine to coarse subangular gravel, trace organic fines, trace roots, brown, moist
	120.0	6	S4	5-3-7-4 (10)	24/18				S4 - Silty SAND with Gravel (SM), fine to coarse, ~25% fines, 15-20% fine to coarse subangular gravel, trace organic fines, trace roots, brown, wet
		8	S5	2-3-5-5 (8)	24/23		Buried Organic Soil	8.0 / 118.0	S5 - Top 14": Organic SILT (OL), nonplastic, ~30% fine sand, trace medium to coarse sand, trace organic fines, trace roots, trace peat fibers, dark brown, wet Bot. 9": Silty SAND (SM), fine, ~20% fines, trace fine subangular gravel, trace organic fines, trace roots, gray, wet
10		10	S6	0-0-4-5 (4)	24/24				S6 - Top 13": Organic SILT (OL), nonplastic, ~30% fine sand, trace medium to coarse sand, trace organic fines, trace roots, trace peat fibers, dark brown, wet
	115.0	12	S7	10-9-11-9 (20)	24/15		Sand	11.1 / 114.9	Bot. 11": Silty SAND (SM), fine, trace medium, ~20% fines, gray, wet S7 - Similar to Bot. 11" of S6
15		14	S8	7-7-8-9 (15)	24/15				S8 - Silty SAND (SM), fine, trace medium, ~35% fines, light brown with orange mottles, wet
	110.0	16							
20		19	S9	3-4-4-4 (8)	24/15				S9 - Silty SAND (SM), fine, 40-45% fines, light brown, wet
	105.0	21						21.0	Bottom of borehole at 21.0 feet. Backfilled borehole with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-19

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/18/18 **DATE COMPLETED:** 10/19/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 126 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 40s / Sunny
GROUNDWATER LEVELS:
- ▽ **DURING DRILLING:** 2.5 ft. / El. 123.5 ft.
- ▼ **AT END OF DRILLING:** 3.6 ft. / El. 122.4 ft.
- ▼ **OTHER:** -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	125.0	0	S1	4-6-9-10 (15)	24/15		Forest Mat	0.0 / 125.9	S1 - Top 7": Coal Ash, trace organic fines, trace roots, dark brown, moist Bot. 8": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 10-15% fine subangular gravel, trace organic fines, trace roots, dark brown, moist
		2	S2	7-10-12-9 (22)	24/11		Fill		▽ S2 - Top 5": Silty SAND (SM), fine, trace medium, 20-25% fines, trace organic fines, trace roots, light brown, moist ▼ Bot. 6": Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 25-30% fine to coarse subangular gravel, trace organic fines, trace roots, brown to orange, moist
5		4	S3	7-5-7-12 (12)	24/13				S3 - Top 8": Silty SAND (SM), fine to medium, trace coarse, ~25% fines, trace fine subangular gravel, trace organic fines, trace roots, light brown, wet Bot. 5": Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 15 to 20% fine to coarse rounded to subangular gravel, trace organic fines, trace roots, brown, wet
	120.0	6	S4	26-40-19-21 (59)	24/24				S4 - Similar to Bot. 5" of S3, 15-20% fine to coarse subangular gravel
		8	S5	4-21-44-30 (65)	24/15				S5 - Silty SAND with Gravel (SM), fine to coarse, ~20% fines, ~20% fine to coarse subangular gravel, trace organic fines, trace roots, brown, wet
10		10	S6	9-5-5-12 (10)	24/9				S6 - Silty SAND (SM), fine to medium, trace coarse, ~20% fines, trace fine subangular gravel, trace organic fines, trace roots, brown, wet
	115.0	12	S7	12-14-15-10 (29)	24/10			12.0 / 114.0	S7 - Silty SAND (SM), fine to medium, trace coarse, ~15% fines, trace fine subangular gravel, brown, wet
		14	S8	7-17-16-13 (33)	24/12		Sand		S8 - Similar to S7, 5-10% fine to coarse subangular gravel
15	110.0	16							
		19	S9	8-13-28-39 (41)	24/20				S9 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, ~15% fine to coarse subangular gravel, brown, wet
20	105.0	21						21.0	Bottom of borehole at 21.0 feet. Backfilled borehole with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-20

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/19/18 **DATE COMPLETED:** 10/23/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 131 ft. (see note 1) **TOTAL DEPTH:** 23 ft.
WEATHER: 50s / Partly Cloudy
GROUNDWATER LEVELS:
- **DURING DRILLING:** 5.3 ft. / El. 125.7 ft. at end of 10/19/18
- **AT END OF DRILLING:** 5.0 ft. / El. 126.0 ft. before coring on 10/22/18
- **OTHER:** 4.3 ft. / El. 126.7 ft. at end of coring

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.3					Forest Mat	0.3 / 130.7	Encountered ~3 inches of forest mat material.
	130.0	2.3	S1	3-6-9-11 (15)	24/18		Fill		S1 - Top 5": Coal ash, trace slag, trace organic fines, trace roots, dark brown, moist Bot. 10": Silty SAND (SM), fine, trace medium, ~20% fines, trace fine subangular gravel, trace organic fines, trace roots, brown, moist
		2	S2	12-27-30-24 (57)	24/15				S2 - Top 7": Silty SAND (SM), fine, 30-35% fines, trace organic fines, trace roots, light brown, moist Bot. 8": Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular gravel, trace organic fines, trace roots, brown, wet
		4	S3	14-23-23-18 (46)	24/15				S3 - Similar to Bot. 8" of S2, ~20% fine to coarse subangular gravel
5	125.0	6	S4	7-12-14-19 (26)	24/15				S4 - Silty SAND (SM), fine to coarse, 15-20% fines, trace organic fines, brown, wet
		8	S5	1-3-6-5 (9)	24/14		Swamp Deposits	8.0 / 123.0	S5 - Top 4": Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, ~15% fine subangular gravel, trace organic fines, trace roots, dark brown, wet Bot. 10": Silty SAND (SM), fine to coarse, ~15% fines, 5-10% fine subangular gravel, trace organic fines, trace roots, brown, wet
10		10					Sand	10.0 / 121.0	
	120.0		S6	3-5-8-12 (13)	24/10				S6 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 15-20% fine to coarse subangular gravel, trace organic fines, brown, wet
		12	S7	2-4-120/0"	12/12				S7 - Similar to S6, ~15% fine subangular gravel
		13							
		14				1			REMARK 1: Auger refusal at ~14 feet. Advanced roller bit to ~14.5 feet. Encountered spoon refusal at ~14.8 feet. Offset borehole ~5 feet west from original boring location. Encountered spoon refusal at ~14.9 feet. Advanced roller bit to 16 feet.
		14.5	S9	14-120/5"	11/11				S9 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, ~25% fine to coarse subangular gravel, brown, wet
15		14.8	S8	120/3"	3/3				S8 - Silty GRAVEL with Sand (GM), fine to coarse, subrounded to angular, ~20% fines, ~20% fine to medium sand, light gray, wet
	115.0	16	S10	120/0"	0/0	2			REMARK 2: Encountered spoon refusal at ~16 feet. S10 - No recovery
		18					Bedrock	18.0 / 113.0	C1 - min/ft: 7.25, 3.9, 5.2, 5.0, 4.75 HARD, slightly weathered, slightly fractured, fine-grained, gray with white and green mottles, GRANITE Rec = 100%, RQD = 85%
20	110.0		C1		60/60				
		23						23.0	Bottom of borehole at 23.0 feet. Backfilled borehole with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-21

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/23/18 **DATE COMPLETED:** 10/24/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 132 ft. (see note 1) **TOTAL DEPTH:** 20 ft.
WEATHER: 50s / Rainy
GROUNDWATER LEVELS:
- ▽ **DURING DRILLING:** 4.2 ft. / El. 127.8 ft. at end of drilling on 10/23/18
- ▼ **AT END OF DRILLING:** 3.0 ft. / El. 129.0 ft. before drilling on 10/24/18
- ▼ **OTHER:** -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.3					Forest Mat	0.3 / 131.7	Encountered ~3 inches of forest mat material.
	130.0	2.3	S1	6-10-14-17 (24)	24/19		Fill		S1 - Top 9": Coal ash, trace organic fines, trace roots, dark brown, moist Bot. 10": Silty SAND (SM), fine, trace medium to coarse, 15-20% fines, trace fine subangular gravel, trace organic fines, trace roots, brown, moist
		2	S2	17-21-22-9 (43)	24/18				S2 - Top 13": Silty SAND (SM), fine to medium, ~20% fines, 5-10% fine angular gravel, trace organic fines, brown, moist ▼ Bot. 5": Silty SAND with Gravel (SM), fine, 25-30% fines, 35-40% fine to coarse subangular gravel, trace organic fines, trace roots, brown, moist
5		4	S3	9-6-7-11 (13)	24/19				▽ S3 - Top 4": Silty SAND (SM), fine to coarse, ~15% fines, trace fine subangular gravel, trace coal ash, dark brown, moist Bot. 15": Silty SAND (SM), fine, 30-35% fines, trace organic fines, brown, wet
	125.0	6	S4	5-77-29-13 (106)	24/20				S4 - Top 11": SILT with Sand (ML), slightly plastic, ~20% fine sand, trace organic fines, trace roots, orange to brown, wet Bot. 9": Silty SAND with Gravel (SM), fine to coarse, ~20% fines, ~15% fine subangular gravel, angular stone fragments, trace organic fines, brown, wet
		8	S5	60-29-29-47 (58)	24/9				S5 - Silty SAND with Gravel (SM), fine to coarse, ~20% fines, 25-30% fine to coarse subangular gravel, angular stone fragments, trace organic fines, brown, wet
10		10	S6	29-28-25-18 (53)	24/8		Sand	10.0 / 122.0	S6 - Silty SAND with Gravel (SM), fine to medium, trace coarse, ~20% fines, ~25% fine to coarse subangular gravel, brown, wet
	120.0	12	S7	55-48-30-11 (78)	24/16				S7 - Similar to S6, 30-35% fine to coarse subangular gravel
15		14	S8	22-15-37-43 (52)	24/9				S8 - Similar to S6, fine to coarse sand
	115.0	16	S9	25-25-25-17 (50)	24/8				S9 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 35-40% fine to coarse subangular gravel, angular stone fragments, brown, wet
		18	S10	27-110-72-80 (182)	24/15	1			REMARK 1: Casing broke at 18 feet. Offset borehole ~5 feet west form original boring location. Advanced augers to 16 feet and encountered rock. Offset borehole ~7 feet east of original boring location and advanced augers to 18 feet.
20		20				2		20.0	S10 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 30-35% fine to coarse subangular gravel, trace organic fines, trace roots, brown, wet REMARK 2: Encountered spoon bouncing on hardcobstruction at ~ 20 feet, terminated boring.
	110.0								Bottom of borehole at 20.0 feet. Backfilled borehole with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-MP-27

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/05/18 **DATE COMPLETED:** 11/05/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 162 ft. (see note 1) **TOTAL DEPTH:** 15 ft.
WEATHER: 50s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 10.5 ft. / El. 151.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	3-3-5-6 (8)	24/24		Forest Mat / Topsoil	0.6 / 161.4	S1 - Encountered ~2 inches of forest mat material at ground surface Top 6": Silty SAND (SM), fine, trace medium, 25-30% fines, ~5% fine gravel, trace coal ash, trace organic fines, trace roots, dark brown, moist
	160.0	2	S2	7-7-7-7 (14)	24/20		Sand		Bot. 16": Poorly Graded SAND with Silt (SP-SM), fine, trace medium to coarse, ~5% fines, light brown to orange, moist S2 - Poorly Graded SAND (SP), fine, trace medium, ~5% fines, light brown to orange, moist
		4	S3	3-5-6-5 (11)	24/16				S3 - Similar to S2, trace fine gravel, orange, moist
5		6	S4	4-5-5-5 (10)	24/20				S4 - Similar to S2, light brown, wet
	155.0	8							
10									
	150.0	13	S5	3-4-7-3 (11)	24/18				S5 - Poorly Graded SAND with Silt (SP-SM), fine, trace medium, 5-10% fines, light brown, wet
15		15						15.0	Bottom of borehole at 15.0 feet. Backfilled borehole with drill cuttings.
	145.0								
20									
	140.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-MP-38

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/26/18 **DATE COMPLETED:** 10/26/18
BORING LOCATION: MBTA ROW, western side of Landham Road
COORDINATES: NA
SURFACE El.: 136 ft. (see note 1) **TOTAL DEPTH:** 16.5 ft.
WEATHER: 40s / Partly Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 5.0 ft. / El. 131.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.1					Forest Mat	0.1 / 135.9	Encountered ~1 inch of forest mat material.
	135.0		S1	4-6-10-8 (16)	24/16		Fill		S1 - Top 5": Silty SAND (SM), fine to medium, trace coarse, 20-25% fines, coal ash, trace organic fines, trace roots, dark brown, moist Bot. 10": Poorly Graded SAND with Silt (SP-SM), fine, trace medium, ~10% fines, trace fine subangular gravel, trace organic fines, light brown, moist
		2.1 / 2	S2	6-5-10-7 (15)	24/5				S2 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 25-30% fines, ~30% fine to coarse subangular gravel, trace organic fines, trace roots, dark brown, moist
		4							
5			S3	6-15-14-15 (29)	24/24				S3 - Silty SAND (SM), fine to medium, trace coarse, ~20% fines, 10-15% fine angular gravel, trace organic fines, trace roots, brown, moist
	130.0	6							
			S4	17-20-21-21 (41)	24/20			6.4 / 129.6	S4 - Top 5": Similar to S3
							Sand		Bot. 15": Silty SAND with Gravel (SM), fine to medium, 20-25% fines, ~15% fine subangular gravel, angular stone fragments, light brown to gray, moist
		8	S5	9-12-20-15 (32)	24/18				S5 - Similar to Bot. 15" of S4, ~20% fine subangular gravel
10		10	S6	26-20-11-18 (31)	24/10				S6 - Silty SAND with Gravel (SM), fine to medium, ~20% fines, ~20% fine subangular gravel, light brown, wet
	125.0	12							
15		15	S7	25-29-14-120/0" (43)	18/10				S7 - Similar to S6, ~25% fines, 25-30% fine to coarse subangular gravel
	120.0	16.5				1		16.5	REMARK 1: Encountered spoon refusal at 16.5 feet. Bottom of borehole at 16.5 feet. Backfilled borehole with drill cuttings.
20									
	115.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-MP-39

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/26/18 **DATE COMPLETED:** 10/26/18
BORING LOCATION: MBTA ROW, Eastern side of Landham Road
COORDINATES: NA
SURFACE El.: 140 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 40s / Partly Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 4.3 ft. / El. 135.7 ft.
OTHER: -

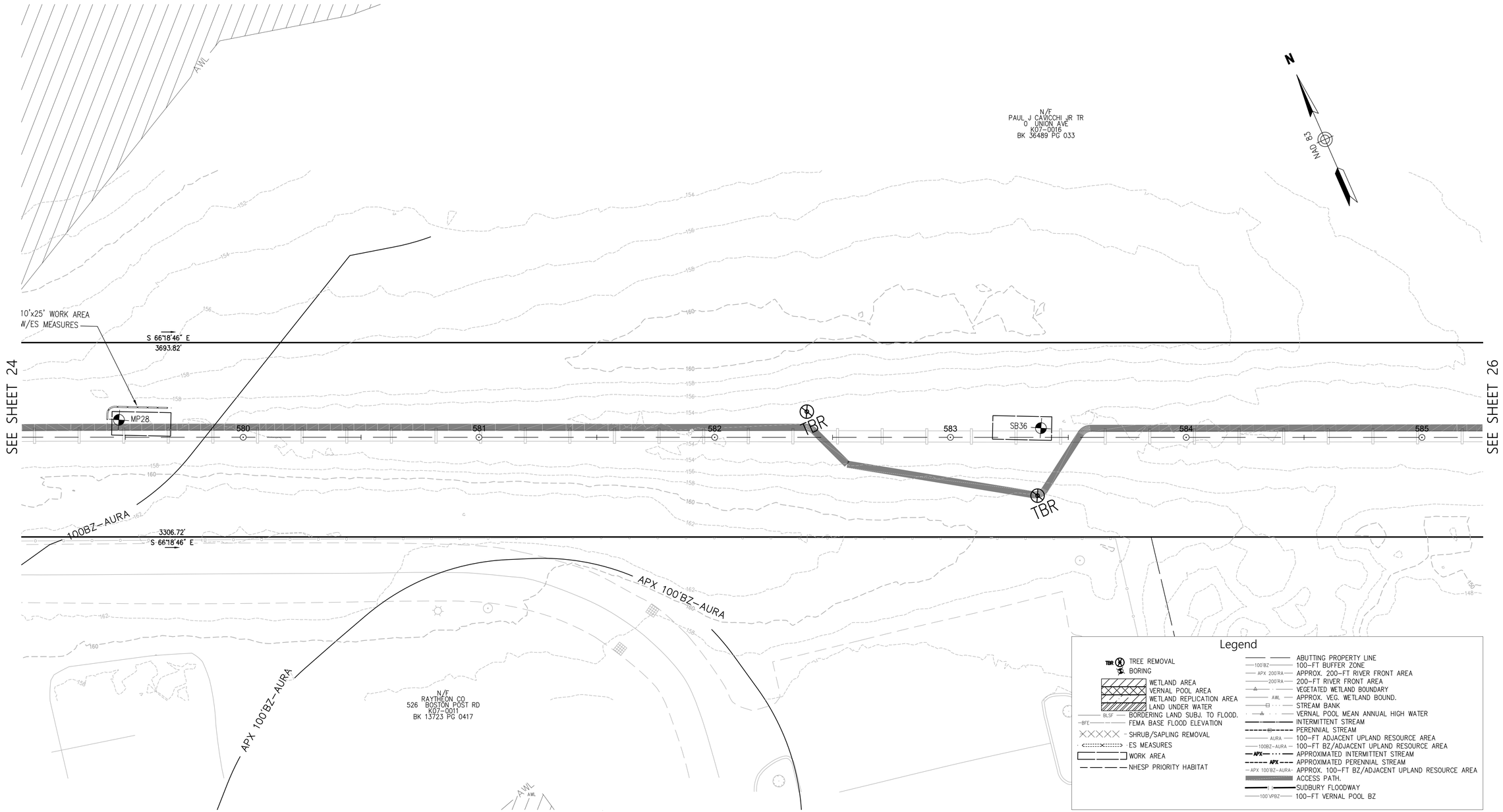
DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	4-9-61-41 (70)	24/16		Forest Mat	0.0 / 139.9	S1 - Encountered ~1 inch of forest mat material at ground surface Top 10": Silty SAND (SM), fine to coarse, ~25% fines, trace coal ash, trace organic fines, trace roots, trace wood, dark brown, moist Bot. 5": Silty SAND (SM), fine, trace medium to coarse, ~20% fines, 5-10% fine to coarse subangular gravel, trace organic fines, brown, moist
		2	S2	33-26-22-17 (48)	24/18		Fill		S2 - Similar to Bot. 5" of S1, ~25% fines, wet
5	135.0	4	S3	14-13-16-17 (29)	24/13				S3 - Top 5": Silty SAND (SM), fine to coarse, ~25% fines, trace coal ash, trace coal, trace organic fines, trace roots, dark brown, moist Bot. 8": Silty SAND (SM), fine, trace medium to coarse, ~20% fines, 5-10% fine subangular gravel, trace organic fines, brown
		6	S4	15-14-13-13 (27)	24/20				S4 - Silty SAND with Gravel (SM), fine to coarse, ~25% fines, ~15% fine to coarse subangular gravel, stone fragments, brown, wet
		8	S5	14-18-18-14 (36)	24/15		Sand	8.4 / 131.6	S5 - Top 5": Silty SAND with Gravel (SM), fine, 25-30% fines, ~15% fine to coarse subangular gravel, trace organic fines, trace roots, brown to dark brown, wet
10	130.0	10						10.0	Bot. 10": Silty SAND with Gravel (SM), fine, trace medium, ~30% fines, 15-20% fine to coarse angular gravel, light brown, wet Bottom of borehole at 10.0 feet. Backfilled borehole with drill cuttings.
15	125.0								
20	120.0								
25	115.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

SUDBURY



20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JUSTIN DUFRESNE
CIVIL
No. 51506
REGISTERED PROFESSIONAL ENGINEER
9.10.18

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
Vanasse Hangen Brustlin, Inc.
vhb
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box9151
Watertown, Massachusetts 02471-9151
617.924.1770 • FAX 617.924.2286

REVISIONS

NO.	COMMENTS	DATE
1.	LAST REVISED	MARCH 30, 2018
2.	LAST REVISED	MAY 9, 2018
3.	LAST REVISED	JULY 16, 2018
4.	BLSF BOUNDARY UPDATES	AUGUST 1, 2018

Issued For
EVERSOURCE ENERGY

SCALE: 20 FEET TO THE INCH

DRAWING NAME: 12970.02-ANRAD-Sudbury.dwg
FIELD BOOK. NO:

Project Title
Sudbury-Hudson Transmission Reliability Project
Sudbury, Massachusetts
Drawing Title
Proposed Conditions Plans
For Notice of Intent Submittal

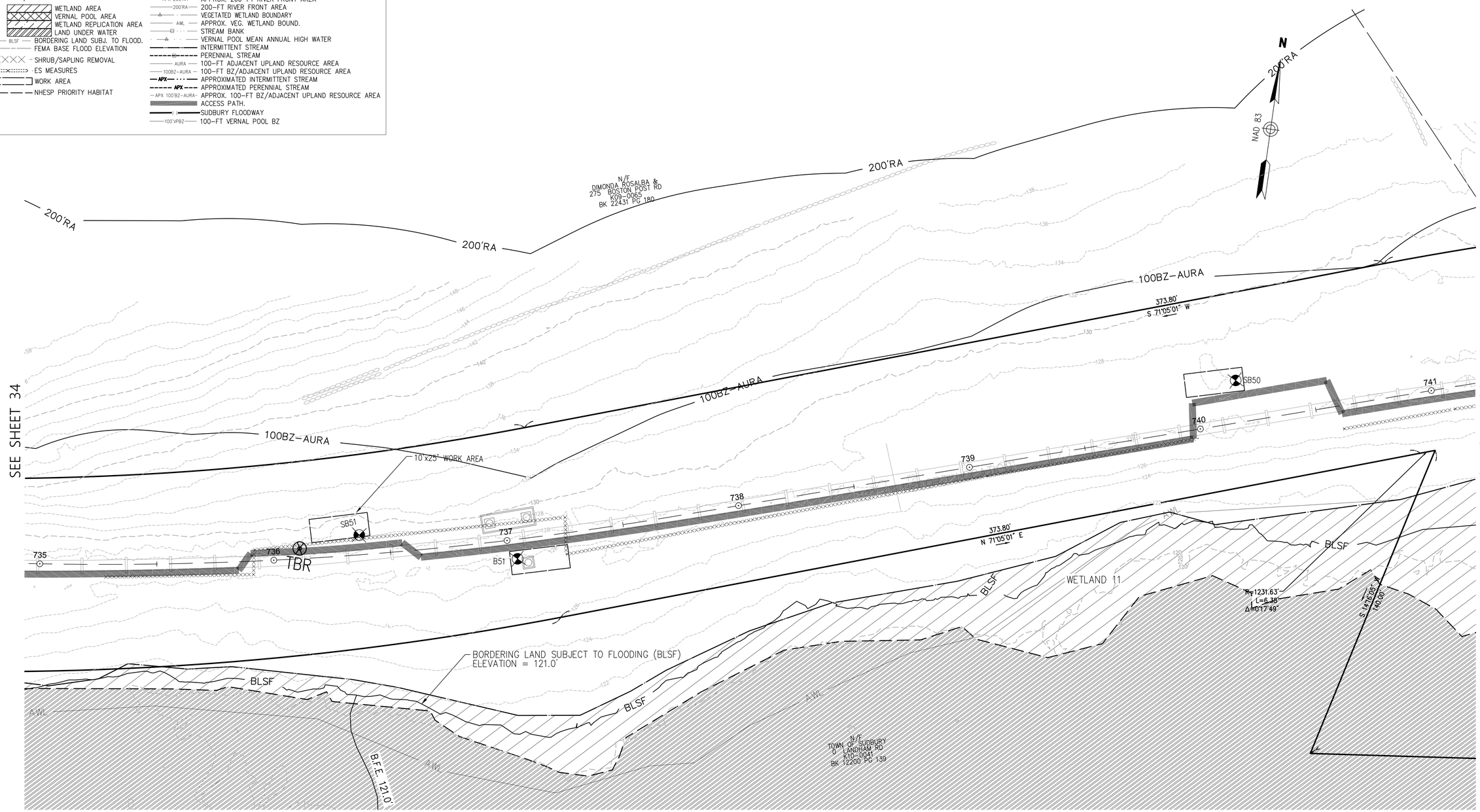
DATE: FEBRUARY 5, 2018
SHEET 25 OF 44

Saved Wednesday, August 8, 2018 11:50:47 AM OCASTRO Plotted Wednesday, August 8, 2018 11:50:50 AM Castro, Onix \\VHB\PROJ\WORCESTER\12970.02 NHESP-ANRAD APPS\CADD\PLANSET\NOI PLANS\12970.02-NOI_SUDBURY_OC

SUDBURY

Legend

- TBR TREE REMOVAL
- B BORING
- WETLAND AREA
- VERNAL POOL AREA
- WETLAND REPLICATION AREA
- LAND UNDER WATER
- BLSF BORDERING LAND SUBJ. TO FLOOD.
- BFE FEMA BASE FLOOD ELEVATION
- SHRUB/SAPLING REMOVAL
- ES MEASURES
- WORK AREA
- NHESP PRIORITY HABITAT
- ABUTTING PROPERTY LINE
- 100'BZ 100-FT BUFFER ZONE
- APX 200'RA APPROX. 200-FT RIVER FRONT AREA
- 200'RA 200-FT RIVER FRONT AREA
- VEGETATED WETLAND BOUNDARY
- AWL APPROX. VEG. WETLAND BOUND.
- STREAM BANK
- VERNAL POOL MEAN ANNUAL HIGH WATER
- INTERMITTENT STREAM
- PERENNIAL STREAM
- AURA 100-FT ADJACENT UPLAND RESOURCE AREA
- 100BZ-AURA 100-FT BZ/ADJACENT UPLAND RESOURCE AREA
- APX APPROXIMATED INTERMITTENT STREAM
- APX APPROXIMATED PERENNIAL STREAM
- APX 100'BZ-AURA APPROX. 100-FT BZ/ADJACENT UPLAND RESOURCE AREA
- ACCESS PATH.
- SUDBURY FLOODWAY
- 100'VPBZ 100-FT VERNAL POOL BZ



20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JUSTIN DUFRESNE
CIVIL
No. 51506
REGISTERED PROFESSIONAL ENGINEER
9.10.18

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
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Land Development
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REVISIONS

NO.	COMMENTS	DATE
1.	LAST REVISED	MARCH 30, 2018
2.	LAST REVISED	MAY 9, 2018
3.	LAST REVISED	JULY 16, 2018
4.	BLSF BOUNDARY UPDATES	AUGUST 1, 2018

Issued For
EVERSOURCE ENERGY

SCALE: 20 FEET TO THE INCH

DRAWING NAME: 12970.02-ANRAD-Sudbury.dwg
FIELD BOOK. NO:

Project Title
Sudbury-Hudson Transmission Reliability Project
Sudbury, Massachusetts
Drawing Title
Proposed Conditions Plans
For Notice of Intent Submittal

DATE: FEBRUARY 5, 2018
SHEET 35 OF 44

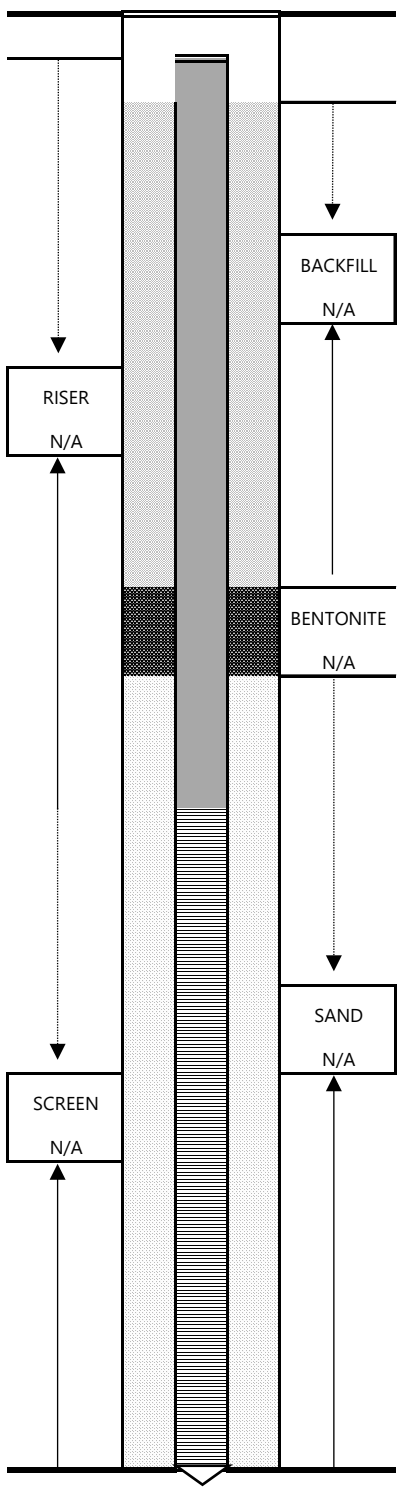
Saved: Wednesday, August 8, 2018 12:02:41 PM Castro, Onix \\VHB\PROJ\WORCESTER\12970.02 NHESP-ANRAD APPS\CADD\PLANSET\01 PLANSET\29.02-NOI_SUDBURY.DC
Saved: Wednesday, August 8, 2018 11:50:47 AM DCASTRO Plotted: Wednesday, August 8, 2018 12:02:41 PM Castro, Onix

CLIENT: EVERSOURCE	**LOCATION ID: MP28**
PROJECT: PROPOSED TRANSMISSION LINE	
PROJECT #: 12970.00	ESTIMATED DEPTH TO WATER (ft.):7-8
DIGSAFE: 20183510192	TOTAL BORING DEPTH (ft.): 10'
DRILLER: GEOSEARCH	SAMPLE COLLECTED?THERMAL X PROCTOR X OHM X
DRILLING DATE: 11/5/18	DEPTH OF SAMPLE COLLECTED: 5-6 (thermal) 0-8/6-8 (OHM)
DRILLING METHOD: Hollow Stem Auger	TIME OF SAMPLE COLLECTION:
SAMPLING METHOD: Continuos	SAMPLING PURPOSE (i.e. MANHOLE, INTERMEDIATE...) Intermediate
PRE-CLEAR DEPTH: N/A	FINISH DEPTH: 10'
LOGGED BY: FTB	REFUSAL ENCOUNTERED: NO

NOTES/SKETCH:

DEPTH (ft.)	LAB SAMPLE	BLOWS (per 6-in)	RECOVERY (in.)	PID (ppmV)	SOIL DESCRIPTION
0-2		2 / 2 / 4 / 6	24	0.0	8" black, fine-medium sand, light silt, coal ash, gravelly 16" Brown-tan, fine sand, light silt
2-4		6 / 8 / 7 / 8	20	0.0	20" Tan, fine sand, light silt
4-6		4 / 8 / 7 / 7	24	0.0	24" Same as above
6-8	VOC	7 / 7 / 7 / 7	22	0.0	12" same as above, moist 4" tan, silt, light fine sand 6" same as 12", wet

WELL CONSTRUCTION (ft.)



SOIL DESCRIPTIONS:

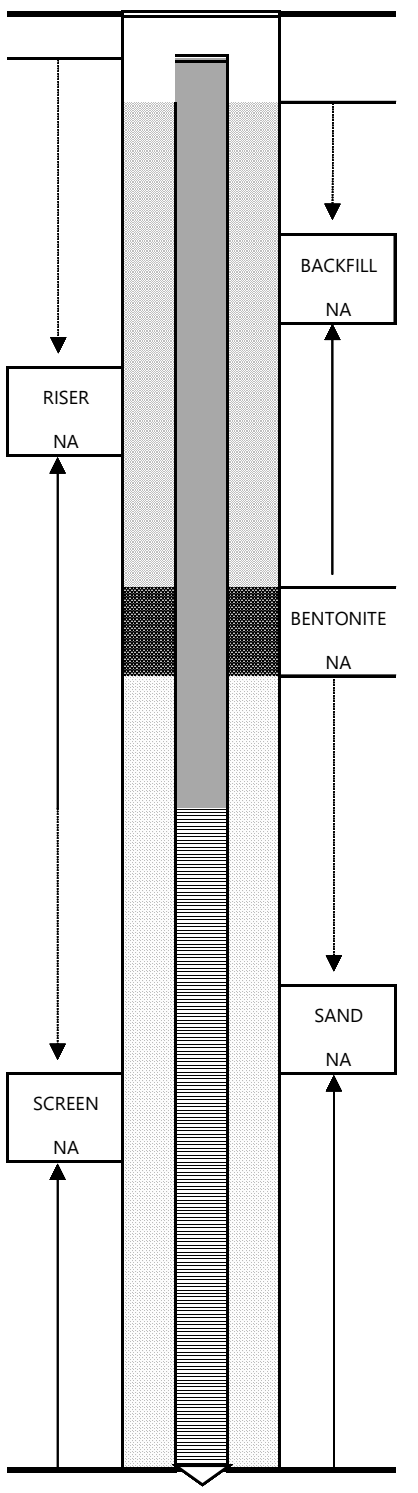
1) PRIMARY GRAIN SIZE
(BOULDERS, COBBLES,GRAVEL, SAND (COARSE, FINE) SILT, CLAY)
2) SECONDARY GRAIN SIZE
(TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%)
3) PLASTICITY (VERY HIGH, HIGH, MED., LOW, SLIGHT, NON-PLASTIC)
4) MOISTURE (WET, MOIST, DRY)
5) DENSITY (LOOSE, MEDIUM DENSE, HARD)
6) ANGULARITY
(V. ANGULAR, ANG, SUB ANG, SUB ROUNDED, ROUNDED, WELL ROUNDED)
7) COLOR (GREY, BROWN, etc.)
8) STRUCTURES, STAINING, ALTERATION
(LAMINATED, BEDDED, IRON STAINED, ETC.)
9) ODORS/ORGANIC CONTENT (PETROLEUM, SEPTIC)
10) GEOLOGICAL INTERPRETATION (I.E. FILL/TILL, GLACIAL CLAY,CHANNEL DEPOSIT, etc.)

CLIENT: EVERSOURCE	**LOCATION ID: SB51**
PROJECT: PROPOSED TRANSMISSION LINE	
PROJECT #: 12970.00	ESTIMATED DEPTH TO WATER (ft.): 2.5
DIGSAFE: 20183510192	TOTAL BORING DEPTH (ft.): 16'
DRILLER: GEOSEARCH	SAMPLE COLLECTED?THERMAL PROCTOR OHM X
DRILLING DATE: 10/24/18	DEPTH OF SAMPLE COLLECTED: 0-8' (o-2' grab voc)
DRILLING METHOD: Hollow Stem Auger	TIME OF SAMPLE COLLECTION: 10:57
SAMPLING METHOD: Continuos	SAMPLING PURPOSE (i.e. MANHOLE, INTERMEDIATE...) ENV
PRE-CLEAR DEPTH: N/A	FINISH DEPTH: 16'
LOGGED BY: FTB	REFUSAL ENCOUNTERED: Auger Refusal

NOTES/SKETCH:
Location ~6' east of SB-51 stake originally to accommodate for geotech for GB-21, move stake

DEPTH (ft.)	LAB SAMPLE	BLOWS (per 6-in)	RECOVERY (in.)	PID (ppmV)	SOIL DESCRIPTION
0-2	VOC grab	3 4 9 18	12	0.0	2" Brown silt and organic material 8" black, sand, little silt, gravel, some coal ash 2" brown sand little silt, gravel
2-4		13 10 75 35	18	0.0	18" brown/tan silt with little fine sand, moist, redox at bottom
4-6		7 18 36 22	12	0.0	4" same as above 4" Dark grey/ tan, medium coarse sand, little silt, gravel, moist 4" Tan, sand, some gravel, moist
6-8		12 19 31 21	16	0.0	16" light tan, medium-coarse sand and gravel, wet

WELL CONSTRUCTION (ft.)



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SOIL DESCRIPTIONS:

1) PRIMARY GRAIN SIZE
(BOULDERS, COBBLES,GRAVEL, SAND (COARSE, FINE) SILT, CLAY)
2) SECONDARY GRAIN SIZE
(TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%)
3) PLASTICITY (VERY HIGH, HIGH, MED., LOW, SLIGHT, NON-PLASTIC)
4) MOISTURE (WET, MOIST, DRY)
5) DENSITY (LOOSE, MEDIUM DENSE, HARD)
6) ANGULARITY
(V. ANGULAR, ANG, SUB ANG, SUB ROUNDED, ROUNDED, WELL ROUNDED)
7) COLOR (GREY, BROWN, etc.)
8) STRUCTURES, STAINING, ALTERATION
(LAMINATED, BEDDED, IRON STAINED, ETC.)
9) ODORS/ORGANIC CONTENT (PETROLEUM, SEPTIC)
10) GEOLOGICAL INTERPRETATION (I.E. FILL/TILL, GLACIAL CLAY,CHANNEL DEPOSIT, etc.)

Required and Provided Recharge Volumes

Recharge Calculations

Project Name:	Sudbury-Hudson	**Proj. No.:**	14009.00
		Date:	July 2020
Project Location:	Sudbury, MA	**Calculated by:**	AHF
		Checked by:	KSS
		Oct 2020 REV.:	AHF

Proposed Impervious Surface Summary

Net Proposed Impervious Areas by Hydrologic Soil Group (HSG) in square feet

Subcatchment	HSG A	HSG B	HSG C	HSG D	Total Area (SF)
All	177,551	0	2,657	54,189	234,396
TOTAL	**177,551**	**0**	**2,657**	**54,189**	**234,396**

Required Recharge Volume (Cubic Feet)

HSG	Area (SF)	Recharge Depth* (in.)	Volume (c.f.)
A	177,551	0.60	8,878
B	0	0.35	0
C	2,657	0.25	55
D	54,189	0.10	452
TOTAL			**9,384**

Assumptions:

* Massachusetts DEP Infiltration requirement: HSG A = 0.60 in; HSG B = 0.35 in; HSG C = 0.25 in; HSG D = 0.10 in.

Capture Area Adjustment

Required Recharge Volume	9,384	c.f.
Total Site Net Impervious Area	5.4	acres
Total Site Impervious Area Draining to Recharge Facilities	3.6	acres
Capture Area Adjustment Factor	1.51	-
Adjusted Required Recharge Volume:	**14,141**	**c.f.**

Provided Recharge Volume Summary

Basin	Volume
Area of Increased Infiltration P-5.8B	226 c.f.
Area of Increased Infiltration P-5.13	219 c.f.
Area of Increased Infiltration P-5.14B	191 c.f.
Area of Increased Infiltration P-5.18B	46 c.f.
Surface Basin Area of Increased Infiltration P-6.2	473 c.f.
Area of Increased Infiltration P-6.6A	413 c.f.
Surface Basin Area of Increased	104 c.f.
Area of Increased Infiltration P-8.2B	578 c.f.
Area of Increased Infiltration P-8.3B	1,262 c.f.
Area of Increased Infiltration P-8.4B	578 c.f.
Area of Increased Infiltration P-8.5A	816 c.f.
Area of Increased Infiltration P-10.6A	653 c.f.
Area of Increased Infiltration P-10.7A	198 c.f.
Area of Increased Infiltration P-10.12A	258 c.f.
Area of Increased Infiltration P-10.13A	320 c.f.
Area of Increased Infiltration P-10.14B	414 c.f.
Total Recharge Volume Provided:	**6,748 c.f.**

Required Recharge Volume: **14,141 c.f.**

Appendix D – Standard 4 Computations and Supporting Information

Water Quality Volume Calculations

Water Quality Volume Calculations

Project Name: Sudbury-Hudson **Proj. No.:** 14009.00

Project Location: Sudbury, MA **Date:** July 2020

Calculated by: AHF

Checked by: KSS

'Oct 2020 REV.: AHF

Total Proposed Impervious Area = 5.4 Acres

Required:

	Runoff Depth to be Treated (in.)	Required Volume (c.f.)
Water Quality Volume	1	19,533

Areas of Increased Infiltration P-5.8B

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	200.1	0	0
	200.6	902	226

Drawdown Calculation

Recharge Rate: 0.27 in/hr*

Drawdown Time: **22.2 hours**

* Rawls Rate per site specific soil samples

Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-5.13

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	172.6	0	0
	173.1	877	219

Drawdown Calculation

Recharge Rate: 2.41 in/hr*

Drawdown Time: **2.5 hours**

* Rawls Rate per site specific soil samples

Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-5.14B

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)

.	170.8	0	0
	171.3	765	191

Drawdown Calculation

Recharge Rate:	1.02 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**5.9 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-5.18B

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	172.4		0
	172.9	185	46

Drawdown Calculation

Recharge Rate:	0.17 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**17.6 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Surface Basin Area of Increased Infiltration P-6.2

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	181.5	431	0
	182.0	559	248
	182.3	946	473

Drawdown Calculation

Recharge Rate:	2.41 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**3.1 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-6.6A

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	178.9	0	0
	179.4	1,650	413

Drawdown Calculation

Recharge Rate:	0.27 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**22.2 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Surface Basin Area of Increased Infiltration P-7.1

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	159.5	162	0
	160.0	252	104

Drawdown Calculation

Recharge Rate:	0.17 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**45.1 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-8.2B

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	162.0	0	0

	162.5	2,312	578

Drawdown Calculation

Recharge Rate:	0.17 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**35.3 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-8.3B

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	158.5	0	0
	159.0	5,048	1,262

Drawdown Calculation

Recharge Rate:	0.17 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**35.3 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-8.4B

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	159.4	0	0
	159.9	2,313	578

Drawdown Calculation

Recharge Rate:	0.17 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**35.3 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-8.5A

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	147.7	0	0
	148.2	3,262	816

Drawdown Calculation

Recharge Rate:	0.17 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**35.3 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-10.6A

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	128.9	0	0

	129.4	2,611	653

Drawdown Calculation

Recharge Rate:	1.02 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**5.9 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-10.7A

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	127.2	0	0

	127.7	793	198

Drawdown Calculation

Recharge Rate:	0.17 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**35.3 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-10.12A

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	136.5	0	0
	137.0	1,030	258

Drawdown Calculation

Recharge Rate:	1.02 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**5.9 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-10.13A

Provided:

Areas of Increased Infiltration	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	136.6	0	0
	137.1	1,280	320

Drawdown Calculation

Recharge Rate:	1.02 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**5.9 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Areas of Increased Infiltration P-10.14B

Provided:

Infiltration Basin Cell A	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	141.0	103	0
	141.5	300	101
	141.9	490	259

Infiltration Basin Cell B	Elevation	Area (s.f.)	Volume (c.f.)
.	140.0	201	0
	140.5	420	155

Drawdown Calculation

Recharge Rate:	1.02 in/hr*	* Rawls Rate per site specific soil samples
Drawdown Time:	**19.4 hours**	Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of

Provided Water Quality Volume Summary

Areas of Increased Infiltration P-5.8B	226	CF

Areas of Increased Infiltration P-5.13	219	CF
Areas of Increased Infiltration P-5.14B	191	CF
Areas of Increased Infiltration P-5.18B	46	CF
Basin P-6.2	473	CF
Areas of Increased Infiltration P-6.6A	413	CF
Basin P-7.1	104	CF
Areas of Increased Infiltration P-8.2B	578	CF
Areas of Increased Infiltration P-8.3B	1,262	CF
Areas of Increased Infiltration P-8.4	578	CF
Areas of Increased Infiltration P-8.5A	816	CF
Areas of Increased Infiltration P-10.6A	653	CF
Areas of Increased Infiltration P-10.7A	198	CF
Areas of Increased Infiltration P-10.12A	258	CF
Areas of Increased Infiltration P-10.13A	320	CF
Areas of Increased Infiltration P-10.14B	414	CF
Total Water Quality Volume Provided:	**6,748**	CF
Total Water Quality Volume Required:	**19,533**	CF

TSS Removal Worksheet

TSS Removal Calculations

Proj. No.: 14009.00
Project Name: Sudbury Hudson Eversource
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: RPL
Checked by: AHF
Oct 2020 REV.: AHF

The Project is meeting Standard 4 to the maximum extent practicable. In order to demonstrate compliance to the extent practicable the EPA's Massachusetts MS4 General Permit BMP Performance Tables are used to estimate the TSS Removal at each of the Areas of Increased Infiltration. Infiltration Trenches were used to determine runoff reduction for Areas of Increased Infiltration and Infiltration Basins were used for the two Surface Basins with Areas of Increased Infiltration. The percent volume reduction of a BMP is conservatively assumed to be equivalent to the percent of total suspended solids removed from the stormwater runoff. The percent runoff reduction is based on the depth of impervious area runoff treated by the BMP. See table below for calculations. Refer to Attachment 3 in Appendix F of the MA MS4 General Permit for the Performance Curves/Tables.

BMP ID:	Provided Water Quality Volume CF	Contributing Impervious Area* SF	Depth of Runoff Treated from Impervious Area inches	Infiltration Rate (IR) in/hr	Runoff Volume Reduction**/TSS Removal %
Areas of Increased Infiltration					
P-5.8B	226	2,004	1.4	0.27	93
P-5.13	219	27,443	0.1	2.41	33
P-5.14B	191	2,352	1.0	1.02	92
P-5.18B	46	653	0.8	0.17	75
P-6.6A	473	6,229	0.9	0.27	70
P-8.2B	578	4,312	1.6	0.17	95
P-8.3B	1262	8,668	1.7	0.17	95
P-8.4B	578	6,970	1.0	0.17	82
P-8.5A	816	8,973	1.1	0.17	84
P-10.6A	653	3,354	2.3	1.02	98
P-10.7A	198	3,049	0.8	0.17	75
P-10.12A	258	2,047	1.5	1.02	92
P-10.13A	320	25,526	0.2	1.02	15
Surface Basins Area of Increased Infiltration					
P-6.2	473	8,451	0.7	2.41	91
P-7.1	104	3,398	0.4	0.17	44
P-10.14B	414	42,123	0.1	1.02	27

* These calculations conservatively include all impervious area contributing to the BMP, including existing impervious area

**Runoff Volume Reduction is determined from the EPA's Massachusetts MS4 General Permit Appendix F, Attachment 2, BMP Performance Tables for Infiltration Trenches (Tables 3-4 through 3-8), and Infiltration Basins (Tables 3-10 and 3-14). TSS Removal rates were conservatively assumed to equal reported runoff volumes

Appendix E – Standard 8 Supporting Information (Draft SWPPPs Manual)

Sudbury-Hudson Transmission Reliability Project

Sudbury, Marlborough, Stow, Hudson

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CONSTRUCTION ACTIVITIES AT: Inactive MBTA ROW
Sudbury, Marlborough, Stow, and Hudson; and
Wilkins Street and Forest Avenue in Hudson

PREPARED ON BEHALF OF: NSTAR Electric d/b/a Eversource Energy
Eversource Energy
247 Station Drive
Westwood, MA 02090

PREPARED FOR: Denise Bartone
Senior Environmental Engineer
247 Station Drive
Westwood, MA 02090
(781) 441-8174
Denise.Bartone@eversource.com

PREPARED BY:
Vanasse Hangen Brustlin, Inc.
101 Walnut Street
PO Box 9151
Watertown, MA 02471
(617) 924-1770

SWPPP Preparation Date: May 2020
Estimated Project Start Date: XX
Estimated Project End Date: XX

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Attachment B: Certifications

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Attachment D: Project Plans

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Attachment H: Training Log and Attendance Forms

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Attachment K: Grading and Stabilization Log

Attachment L: Inspection Log and Template Forms

Attachment M: Corrective Action Log and Template Forms

Attachment N: Spill Log and Template Forms

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Attachment P: Chemical Information

Attachment Q: UIC Well Correspondence

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1

Introduction

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This Stormwater Pollution Prevention Plan (SWPPP) manual has been prepared to address the requirements of the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activity (2017, USEPA). A copy of the 2017 CGP is included in Attachment A.

The CGP gives **Project Operators** of construction activities that meet the eligibility requrements of Part 1.1 of the 2017 CGP, authorization to discharge:

- stormwater as defined in Part 1.2.1 of the 2017 CGP, and
- non-stormwater associated with some construction activities as defined in part 1.2.2 of the 2017 CGP provided that adequate measures are taken to prevent pollution to receiving waters.

This manual is specific to project sites in **Massachusetts**, where the EPA is the permitting authority for stormwater discharges from construction sites nationally.

How to Use this Manual

This manual does not become a CGP-compliant SWPPP until the Project Operators:

- finalize the SWPPP by completing the initial activities indicated on the following pages and
- by maintaining the SWPPP during the construction period in accordance with the 2017 CGP.

Before the project activities begin, the Project Operators must review this manual, fill out relevant information in the spaces provided (or attach additional pages as necessary) and update and/or revise as necessary.

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What is a Project Operator?

The 2017 CGP provides permit coverage for Project Operators (Operator) to discharge stormwater from construction sites. An Operator is any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project, which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Operators are responsible for maintaining compliance with the terms of the 2017 CGP.

All operators who wish to obtain coverage to discharge stormwater under the 2017 CGP must submit and certify their own NOI to the Environmental Protection Agency (EPA).

Eversource adopts the role of the Project Operator. Contractors and subcontractors certify that they have reviewed and will follow the provisions of the SWPPP. See Attachment B.

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Eligibility for Permit Coverage

To be covered under the 2017 CGP, a party must meet the eligibility conditions and follow the requirements for obtaining permit coverage. To be eligible for coverage:

- You must be an Operator of a construction site for which discharges will be covered under this permit.
- The project's construction activities:
  - will disturb one (1) or more acres of land, or less than one (1) acre of land if the project is part of a larger common plan that will ultimately disturb one (1) or more acres of land.
  - have been designated by EPA as needing permit coverage under 40 CFR 122.26(a)(1)(v) or 40 CFR 122.26(b)(15)(ii).
- Discharges from your site are not already covered by a different NPDES permit for the same discharge or in the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.
- The project meets the requirements relevant to the Endangered Species Act (ESA) (Section 9.1).
- The project meets the requirements relevant to preservation of Historic Properties (Section 9.2).
- The project meets the requirements relevant to water quality impacts to designated waters (Section 3.2. Refer to Part 1.1.8 and 1.1.9 of the 2017 CGP).

Project Operators must file and certify an NOI at least fourteen (14) days prior to the start of project activities. https://www.epa.gov/compliance/npdes-ereporting

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Compliance Requirements

Compliance with the 2017 CGP is achieved by:

- Developing a draft SWPPP (this document);
- Identifying project operators and responsible parties and obtaining authorization to perform permit compliance activities. (Section 2.1 and Attachment A);
- Submitting and certifying a Notice of Intent (NOI) to the Environmental Protection Agency (EPA) Construction General Permit Program;
- Installing a sign or other notice posted conspicuously at a safe, publicly accessible location, in close proximity to the project site. At a minimum, the notice shall include:
  - The NPDES Permit tracking number,
  - A contact name and phone number for obtaining additional project information,
  - The location where an EPA inspector or a member of the public may access a copy of the current SWPPP,
  - The statement: "If you observe indicators of stormwater pollutants in the discharge or in the receiving waterbodies, contact the EPA through the following website: https://www.epa.gov/enforcement/report-environmental-violations."
- Updating this SWPPP as necessary and maintaining compliance with the CGP and any and all Orders of Conditions during construction period activities; and
- Maintaining an updated copy of the SWPPP on the project site.

Document Control

A current copy of the following documents:

1. 2017 NPDES CGP,
2. the SWPPP and all attachments and insertions, and
3. EPA-issued authorizations must be kept **on site** at the Project field office so that they can be made available:
   - at the time of an on-site inspection by the EPA
   - upon request by EPA; a state; tribal; or local agency that approves stormwater management plans;
   - the operator of a storm sewer system receiving discharges from the site;
   - or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).

If an on-site location is unavailable for storing these documents, a notice of the plan's location must be posted near the main entrance of the construction site.

These documents may be made available to the general public by federal, state, or local agencies. These documents must be retained for at least 3 years from the date that the permit coverage expires or is terminated.

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The SWPPP is a dynamic document, and must be continually updated by the Operator(s) throughout construction. It is the responsibility of the Operator(s) to update and complete this manual by including the following information and performing ongoing project activity logging as described in the remainder of this document.

Task Completed	Task	See Sections
☐	Designate and Provide Contact Information for the Responsible Parties	Section 1 Attachment B Section 8.8 Attachment N
☐	Provide documentation confirming EPA authorization of the Project	Attachment C
☐	Provide a construction schedule including dates of major earthwork, stabilization and/or erosion control installations.	Table 24 Appendix J
☐	Review the Erosion and Sediment Controls described in this manual and add or update as needed. Document the installation and maintenance of Erosion and Sediment Controls.	Section 7 Attachment E Attachment J Attachment O Attachment S
☐	Identify any chemical treatments that may be applied to the site and describe dosage, application techniques, and training for personnel.	Section 7.12 Attachment P
☐	Identify potential sources of pollution.	Table 48 Section 8.1
☐	Provide documentation of correspondence congruent with the Endangered Species Act	Section 9.1 Attachment F
☐	Provide documentation of correspondence with Massachusetts Historical Commission. Submit the Project Notification Form (PNF) to Massachusetts Historic Commission	Section 9.2 Attachment G
☐	Provide documentation of compliance with DEP regulations 310 CMR 27.00 (Underground Injection Wells)	Section 9.3 Attachment Q

The SWPPP must be kept up to date throughout the construction period until a Notice of Termination (NOT) Form has been submitted to the EPA. From the date of submital of the NOT form, the SWPPP documents must be maintained by the Operator(s) for a period of three years.

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Contact Information and Responsible Parties

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2.1 Operators(s)

Individuals identified in this section are designated responsible parties for each of the project Operators. Project Operators may include, but not be limited to the site Owner, the project owner, and the general contractor. Amend this Section during the construction period if any ownership changes or any temporary or permanent staff changes occur.

Table 1 Project Role: Owner

Company or Organization:	Eversource
Name:	Michael Hager
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8206
Fax/Email:	Michael.Hager@eversource.com
Title:	Project Manager

Table 2 Project Role: Owner

Company or Organization:	Eversource
Name:	Denise Bartone
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8174
Fax/Email:	Denise.Bartone@eversource.com
Title:	Manager, Licensing & Permitting

Table 3 Project Role: General Contractor

Company or Organization:	[TBD]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

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Table 4 Project Role: [Optional 2]

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Insert additional sheets as necessary.

2.2 24-hour Emergency Contact Information

The individuals identified in this Section will be available to respond to emergency conditions on the site 24 hours a day, 7 days a week. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 5 24-hour Emergency Contact (Primary)

Company or Organization:	Eversource
Name:	TBD
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	[enter]
Fax/Email:	[enter]
Title:	Construction Supervisor

Table 6 24-hour Emergency Contact (Secondary)

Company or Organization:	Eversource
Name:	Michael Hager
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8206
Fax/Email:	Michael.Hager@eversource.com
Title:	Project Manager

Attach additional sheets as necessary.

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2.3 Delegation of Authority

The individual authorized to sign/certify the NOI is granted the authority to sign the

- SWPPP,
- Inspection Reports,
- Corrective Action Reports and
- other permit documents.

Alternatively, the individual may delegate this authority. A duly authorized representative may only sign the documents if:

- This authorization specifies either an individual or a position (e.g., Environmental Compliance Officer) who has the responsibility for the overall operation of the regulated area or who has overall responsibility for environmental matters.
- This SWPPP includes a signed, dated written authorization.

The duly authorized representative cannot be a subcontractor or a third party. A duly authorized third party may conduct inspections and corrective actions and may complete reports, but the NOI signer/certifier or duly authorized representative identified here must sign the reports.

Insert authorization signature pages into Attachment B. Amend this Section and add pages to Attachment B during the construction period if any temporary or permanent staff changes occur.

Table 7 Duly Authorized Representative or Position (Primary)

Company or Organization:	TBD
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 8 Duly Authorized Representative or Position (Secondary, optional)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

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Table 9 Duly Authorized Representative or Position (Tertiary, optional)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Attach additional sheets as necessary.

2.4 Stormwater Team

The duties of these personnel include one or more of the following:

1. Prepare the Draft SWPPP
2. Finalize the SWPPP
3. Implement the SWPPP
4. Oversee maintenance practices identified as BMPs in the SWPPP
5. Conduct or provide for inspection and monitoring activities
6. Identify other potential pollutant sources and make sure that they are added to the plan
7. Identify any amendments to the SWPPP necessitated by field conditions and make sure they are implemented
8. Ensure that any design changes during construction are addressed in the SWPPP

All Operators and/or Subcontractors that will use this SWPPP for compliance with the terms of their CGP must provide a certification agreement to do so. The certification agreements are located in Attachment B.

Table 10 Stormwater Team 1

Company or Organization:	TBD
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Continued on the next page

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Table 11 Stormwater Team 2

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 12 Stormwater Team 3

Company or Organization:	**Eversource**
Name:	Denise Bartone
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8174
Fax/Email:	Denise.Bartone@eversource.com
Title:	Manager, Licensing & Permitting

Table 13 Stormwater Team 4

Company or Organization:	**Eversource**
Name:	Michael Hager
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8206
Fax/Email:	Michael.Hager@eversource.com
Title:	Project Manager

Attach additional pages as necessary.

2.5 Personnel Responsible for Inspections

Inspections are to be performed by "qualified personnel" as defined in Part 4.1 of the 2017 CGP and shall include all areas of the site disturbed by construction activity and areas used for materials storage that are exposed to precipitation. The Inspector must look for evidence of, or the potential for, pollutants entering the storm water system, inspect the BMPs installed as part of the Plan, inspect the site drainage outfalls, inspect the site egress points for tracking, and inspect material, waste, borrow, or equipment storage and maintenance areas. If, in the course of the inspection, the inspector identifies an eroded area or an area

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impacted by sedimentation, additional erosion and sedimentation controls will be implemented, the discharge will be documented, and the SWPPP will be revised to include these changes.

Inspection forms are available in Attachment L. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 14 Personnel Authorized to Perform Inspections

Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	

Attach additional sheets as necessary.

2.6 Personnel Responsible for Completing Corrective Actions

The following personnel are responsible for completing corrective action forms.

Insert authorization signature pages into Appendix K. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 15 Personnel Responsible for Completing Corrective Actions (Primary)

Company or Organization:	
Name:	
Address:	
City, State, Zip	
Telephone:	
Fax/Email:	
Title:	

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Table 16 Personnel Responsible for Completing Corrective Actions (Secondary, optional)

Company or Organization:	
Name:	
Address:	
City, State, Zip	
Telephone:	
Fax/Email:	
Title:	

Attach additional sheets as necessary

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Site Evaluation Assessment and Planning

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3.1 Project/Site Information

Table 17 Project Name and Address

Project/Site Name:	Sudbury-Hudson Transmission Reliability Project
Project Street/Location:	Inactive MBTA ROW in Sudbury, Marlborough, Stow, and Hudson; and Wilkins St and Forest Ave in Hudson
City:	Sudbury, Marlborough, Stow, Hudson
State:	Massachusetts
Zip:	Various
County:	Middlesex

Table 18 Project Coordinates - Sudbury

Type	Latitude		Longitude	
Subdury Substation	42.359997	N	71.397021	W
Hudson Substation	42.387273	N	71.556489	W

Table 19 Source for coordinate information

	Source
☐	USGS topographic map
☐	EPA Website
☐	GPS
☒	Other: (Maps.google.com)

Table 20 Horizontal Reference Datum

	Reference
☐	NAD 27
☒	NAD 83 or WGS 84
☐	Unknown
☐	Other:

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3.1.1.1 Additional Information

Yes	No	
☐	☒	Is the project/site located on **Indian country lands,** or located on a property of religious or cultural significance to an Indian tribe? If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property: n/a If you are conducting earth-disturbing activities in **response to a public emergency,** document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions)*, information substantiating its occurrence *(e.g., state disaster declaration)*, and a description of the construction necessary to reestablish effective public services: n/a
☐	☒	Are you applying for permit coverage as a "**federal operator**" as defined in Appendix A of the 2017 CGP?

3.2 Discharge Information

Yes	No	
☒	☐	Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?
☒	☐	Are there any surface waters that are located within 50 feet of your construction disturbances?

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3.2.1 Receiving Waters

Name(s) of the first surface water(s) that receive stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)

Table 21 Receiving Waters

Number	Name
1	Assabet River
2	Fort Meadow Brook
3	Hop Brook
4	Unnamed Stream/Tributary
5	Dudley Brook
6	Hudson wetlands 1-21 (H1-H21)
7	Sudbury wetlands 1-45 (S1-S45)

3.2.2 Impaired Waters

Use the interactive map of the 2016 integrated list of waters to identify impaired waters in the vicinity of the project area. The interactive map is available online at: http://www.mass.gov/eea/agencies/massdep/water/watersheds/integrated-list-of-waters.html

Table 22 Impaired Receiving Waters

Is this surface water listed as impaired?			If you answered yes, then answer the following:				
				Has a TMDL been completed?			
	Yes	No	What pollutants are causing the impairment?	Yes	No	Title of the TMDL document	Pollutant(s) for which there is a TMDL
Assabet River	☒	☐	(Debris/Floatables/Trash); (Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Escherichia coli; Excess Algal Growth; Fecal Coliform; Nutrient/ Eutrophication Biological Indicators; Oxygen, Dissolved; Phosphorus (Total); Taste and Odor.	☒	☐	Assabet River Total Maximum Daily Load for Total Phosphorus *(CN 201.0)*	Phosphorus
Fort Meadow Brook	☐	☒		☐	☒		

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Is this surface water listed as impaired?			If you answered yes, then answer the following:				
Hop Brook	☒	☐	(Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Dissolved oxygen saturation; Escherichia coli; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Turbidity. Oxygen, Dissolved; Phosphorus (Total.	☒	☐		
Unnamed Tributary	☒	☐	Dissolved oxygen saturation; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Total Suspended Solids (TSS).	☒	☐		
Dudley Brook	☐	☒		☐	☐		

3.2.3 Tier 2, 2.5, or 3 Waters

In **Massachusetts**, Tier 2 waters are listed as "High Quality Waters." **All wetlands** that are not designated as an Outstanding Resource Water are considered a High Quality Water (Refer to antidegradation designations, link below).

In **Massachusetts,** Tier 2.5 waters are listed as Outstanding Resource Water, Public Water Supply, and/or Tributary to Public Water Supply, and all wetlands bordering Outstanding Resource Waters and all vernal pools.

In **Massachusetts,** Tier 3 waters are defined as Special Resource Waters. (As of February 2017, no waters are listed as Special Resource Waters).

Tier 2, Tier 2.5, and Tier 3 waters are identified and listed in the Massachusetts Water Quality Standards 314 CMR 4.00. See 314 CMR 4.06(1)(d)m for definitions. See the Tables and Figures associated with 314 CMR 4.06 available online at: https://www.mass.gov/regulations/314-CMR-4-the-massachusetts-surface-water-quality-standards

To determine applicability of specific antidegradation designations refer to: https://www.mass.gov/doc/antidegradation-implementation-procedures-0/download

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Table 23 Special Receiving Waters (Tier 2, Tier 2.5 or Tier 3)

	Is this surface water designated as a Tier 2, Tier 2.5 or Tier 3 water?		If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as.
	Yes	No	
Assabet River	☒	☐	Tier 2. High quality water.
Hop Brook	☒	☐	Tier 2. High quality water.
Wetland H3	☒	☐	Tier 2. High quality water.
Wetland H12	☒	☐	Tier 2. High quality water.
Wetland S4	☒	☐	Tier 2. High quality water.
Wetland S12	☒	☐	Tier 2. High quality water.
Wetland S13	☒	☐	Tier 2. High quality water.
Wetland S14	☒	☐	Tier 2. High quality water.
Wetland S15	☒	☐	Tier 2. High quality water.
Wetland S16	☒	☐	Tier 2. High quality water.

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3.3 Project Description

3.3.1 General Description

NSTAR Electric Company d/b/a Eversource Energy (Eversource) is proposing to construct, operate, and maintain an approximate 9-mile, 115-kilovolt (kV) underground transmission line extending from Eversource's Sudbury Substation on Boston Post Road (Route 20) in Sudbury, Massachusetts (Sudbury Substation) to Hudson Light & Power Department's (HLPD) substation at Forest Avenue in Hudson, Massachusetts (Hudson Substation). The new transmission line and related improvements at Sudbury Substation comprise the Sudbury-Hudson Transmission Reliability Project (the Project).

The Project will provide also base for and support construction of a portion of the Mass Central Rail Trail (MCRT). The Project will be installed primarily along an inactive railroad right-of-way (ROW) owned by the Massachusetts Bay Transportation Authority (MBTA). The Project originates at the Sudbury Substation and travels northwest along the MBTA ROW passing through short sections of Marlborough and Stow before entering Hudson, where it travels underground within public roadways for 1.3 miles after eciting the MBTA ROW, terminating at the Hudson Substation. The New Line will pass mostly through the Towns of Sudbury and Hudson and will cross short sections of the Town of Stow and the City of Marlborough.

The Project includes the following work activities:

- Installation of new equipment at Sudbury Substation
- Within MBTA ROW:
  - Vegetation removal within the limit of work (no stumping)
  - Installation of erosion and sediment controls with on-going monitoring and maintenance
  - Rail and tie removal
  - Grading to create construction platform
  - Installation of stormwater management features
  - Construction of wetland replication area
  - Construction of bridges and other crossings
  - Installation of manholes and duct bank
  - Installation of electrical and signal conduit for MCRT at road crossings
  - Final grading of the gravel base for MCRT
  - Cable pulling, splicing, testing, and commissioning
  - Loaming, seeding, and planting of disturbed areas
- Within Public Roadways:
  - Installation of sediment controls
  - Manhole installation
  - Roadway trench excavation, duct bank installation, and pavement restoration

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- Cable pulling, splicing, and testing
- Final pavement restoration

3.3.2 Site Maps

Attachment D contains the Project Plans for this project.

Attachment E contains Site Maps including the:

› Site Location Map
› FEMA Flood Insurance Rate Map
› Soil Map

3.3.3 Size/Footprint of the Project

The project activities will occupy the footprint identified below.

Table 24 Footprint of the Project Area

Area Description	Area (acres)
Total property size	
Total area of construction disturbance	
Maximum area to be disturbed at any one time	

3.3.4 Construction Activities Sequencing and Logging

Construction activities, phasing, and sequencing are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period. Project Operators are responsible for maintaining a construction log that address the following project activities.

3.3.4.1 Projected Construction Sequence

The projected construction sequence presented in this section is the best estimate of the construction sequence at the time that this SWPPP template was prepared. If the general sequence presented here changes during the course of the project, amend the SWPPP to include the revised project construction sequence.

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Table 25 Projected Construction Sequence (Phase 1)

Phase 1 –

Area of Disturbance _____ **acres**

Action	**Projected Date**
Installation of new equipment at Sudbury Substation	
Within MBTA ROW:	
Vegetation removal within the limit of work (no stumping)	
Installation of erosion and sediment controls with on-going monitoring and maintenance	
Rail and tie removal	
Grading to create construction platform	
Installation of stormwater management features	
Construction of wetland replication area	
Construction of bridges and other crossings	
Installation of manholes and duct bank	
Installation of electrical and signal conduit for MCRT at road crossings	
Final grading of the gravel base for MCRT	
Cable pulling, splicing, testing, and commissioning	
Loaming, seeding, and planting of disturbed areas	
Within Public Roadways:	
Installation of sediment controls	
Manhole installation	
Roadway trench excavation, duct bank installation, and pavement restoration	
Cable pulling, splicing, and testing	
Final pavement restoration	

Refer to the Construction Activities Log for actual construction sequence performance.

3.3.4.2 Construction Activity Logging Requirements

For each phase of construction, document the dates for the following activities:

- Installation of stormwater controls, and when they will be made operational;
- Commencement and duration of earth-disturbing activities, including clearing, grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;
- Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;
- Final or temporary stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines to which you are subject to in Part 2.2.1; and
- Removal of temporary stormwater control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

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Construction Activity logs are maintained in Attachment J.

3.3.5 Construction Support Activities

Construction support activities are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period. Support activities that are not addressed in the Project Description (Section 0) must be identified here:

3.3.6 Allowable Non-Stormwater Discharges

Congruent with Section 1.2.2 of the 2017 CGP, the following non-stormwater discharges associated with construction activities are authorized under this permit provided that, with the exception of water used to control dust and to irrigate vegetation in stabilized areas, these discharges are not routed to areas of exposed soil on the site and the discharges also meet the requirements of Part 2 of the 2017 CGP.

Table 26 Allowable non-stormwater discharges likely occur at the Project Site

	Likely to be Present at the Site?	
Types of Allowable Non-Stormwater Discharges Present at the Site	**Yes**	**No**
Discharges from emergency fire-fighting activities	☐	☒
Fire hydrant flushings	☐	☒
Landscape irrigation	☐	☒
Waters used to wash vehicles and equipment	☒	☐
Water used to control dust	☒	☐
Potable water including uncontaminated water line flushings	☐	☒
Routine external building wash down	☐	☒
Pavement wash waters	☒	☐
Uncontaminated air conditioning or compressor condensate	☐	☒
Uncontaminated, non-turbid discharges of ground water or spring water	☒	☐
Foundation or footing drains	☐	☒
Construction dewatering water	☒	☐

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Inspections, Corrective Actions, and Amendments

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4.1 Inspection Schedule

Section 4.2 and Section 4.3 of the 2017 CGP specify minimum inspection frequencies. Section 4.2 specifies the minimum inspection frequency for a typical site. Section 4.3 specifies the minimum inspection frequency for locations on the site that discharge to sensitive waters. Sensitive waters are defined as sediment or nutrient-impaired waters or waters that are identified by the State, tribe or EPA as Tier 2, Tier 2.5, or Tier 3.

Table 27 Project Inspection Schedule

Does the project area discharge to sensitive waters?		Inspection Frequency
☒ Yes		Once every 7 calendar days AND Within 24 hours of an event 0.25 inches or greater
☐ No		Choose one option below:
	☐	Once every 7 calendar days
	☐	Once every 14 calendar days AND Within 24 hours of an event 0.25 inches or greater

To determine if a storm event of 0.25 inch or greater has occurred on the site, data will be obtained from the weather station at:

Blueberry Hill – KMASUDBU29 in Sudbury, MA.

For any day of rainfall during normal business hours that measures 0.25 inches or greater, the date and rainfall amount must be recorded in the Construction Activities Log (Section 3.3.4).

The Site Inspection Log and Inspection Forms are maintained in Attachment L.

Record daily rainfall that exceeds 0.25 inches in the Construction Activities Log (Section 3.3.4).

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4.1.1 Reductions in Inspection Frequency

Inspection frequency may be reduced to once per month if:

- The stabilization of the contributing area was completed more than one month prior and the stabilization activities are documented in the Construction Activities and the Grading and Stabilization Logs.
- The project is experiencing frozen soil conditions.

Exceptions may also be made for drought-stricken areas, refer to Part 4.4.2 for additional information.

4.1.1.1 Suspension of Construction Activities due to Frozen Conditions

If the project will suspend construction activities due to frozen conditions, the project may temporarily suspend inspections on the site until thawing conditions begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;
- Land disturbances have been suspended; and
- All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

4.1.1.2 Continuation of Construction Activities Despite Frozen Conditions

If the project will continue construction activities despite frozen conditions, the project may temporarily reduce inspections to once per month until thawing conditions begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;
- Land disturbances have been suspended; and
- All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

Record changes in the inspection frequency in the Construction Activities Log (Section 3.3.4).

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4.2 Corrective Action Directives

Project Operators must take corrective action to address any of the following conditions if they appear at the project site:

- A stormwater control needs repair or replacement
- A stormwater control necessary to comply with the permit was not installed, or was installed incorrectly
- A discharge from the project site is causing an exceedance of water quality standards to receiving waters
- A prohibited discharge has occurred (refer to Part 1.3 of the 2017 CGP)

4.2.1 Corrective Action Timelines

For any required corrective action (refer to part 5.1 of the 2017 CGP), project operators must:

- **Immediately** take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.
- When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the **next business day.**
- When the problem requires a new or replacement control, or significant repair, install the new or modified control by **no later than 7 calendar days** from the time of discovery.
- If it is not possible to complete the action within 7 days, record the extenuating circumstances in detail on a Corrective Action Form (Attachment M).

4.2.2 Corrective Action Reports

For each corrective action taken, complete a corrective action report in accordance with the following (refer to Part 5.4 of the 2017 CGP):

- Within 24 hours of identifying the condition requiring corrective action, document the condition and the date/time it was identified.

  Within 24 hours of completing the corrective action, document the action taken and note whether any modifications to the SWPPP are required.

The Corrective Action Log and Corrective Action Report Forms are maintained in Attachment M.

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4.3 Amendments

This SWPPP must be amended and the amendments must be recorded in the amendment log if any of the following conditions apply:

- Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater controls, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.3.f change during the course of construction;
- To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
- If inspections or investigations by EPA or its authorized representatives determine that SWPPP modifications are necessary for compliance with this permit;
- Where EPA determines it is necessary to impose additional requirements on your discharge, the following must be included in your SWPPP:
  - A copy of any correspondence describing such requirements; and
  - A description of the controls that will be used to meet such requirements.
- To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls implemented at the site; and
- If applicable, if a change in chemical treatment systems or chemically enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

The Amendment Log is maintained in Attachment I.

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Staff Training

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5.1 Training

Each Operator or group of Operators must assemble a Stormwater Team to carry out compliance activities associated with the requirements of the 2017 CGP. Prior to the commencement of construction activities, the Operators must ensure that the personnel on the stormwater team understand the requirements of this permit and their specific responsibilities with respect to those requirements.

All of the personnel responsible for the following activities must be trained to understand the relevant requirements under the terms of the 2017 CGP including:

- The design, installation, maintenance, and/or repair of stormwater controls (and pollution prevention controls)
- Permits that include provisions for stormwater and erosion control management include:
  - Sudbury, Stow, and Hudson Orders of Conditions
  - Sudbury Stormwater Management Permit
  - USACE General Permits for Massachusetts authorization
- The application and storage of treatment chemicals (if applicable)
- Conducting and documenting inspections (Part 4 of the 2017 CGP)
- Performing and documenting corrective actions (Part 5 of the 2017 CGP)

Minimum training measures for the stormwater team must include:

- Permit deadlines associated with the installation, maintenance, and removal of stormwater controls and stabilization
- The location of all stormwater controls on the site required by this permit and how they must be maintained
- The proper procedures to follow with respect to the permit's pollution prevention requirements
- When and how to conduct inspections, record findings, and take corrective actions.

All members of the stormwater team must have easy access to an electronic or paper copy of the applicable portions of this permit, the most updated copy of the SWPPP, and other relevant documents associated with the SWPPP including logs and completed forms.

The Training Log and Attendance Records are maintained in Attachment H.

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Notifications

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6.1 Notice of Intent (NOI)

Following the completion of the draft SWPPP, project operators may submit their NOIs to the EPA.

Permit coverage does not begin until 14 calendar days from the date that the NOI is certified by a person authorized in accordance with Appendix I of the 2017 CGP.

Within 14 calendar days, the EPA may notify the Operator(s) that the authorization has been delayed or denied.

Project NOIs and authorizations are maintained in Attachment C.

6.2 Notice of Termination (NOT)

Operators are required to continue to comply with all conditions and requirements in the permit until coverage is terminated under this permit.

To terminate permit coverage, all Operators must submit a complete and accurate NOT to the EPA. The NOT certifies that an Operator has met the requirements for termination as listed in Part 8 of the CGP. Operators must use NPDES eReporting Tool (NeT) to electronically prepare and submit an NOT for the 2017 CGP.

https://www.epa.gov/npdes/stormwater-discharges-construction-activities#ereporting

Operators must submit the NOT within 30 calendar days after any of the triggering conditions listed in Part 8.2 of the CGP.

An Operator's authorization to discharge under the CGP terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website.

Project NOTs and authorizations are maintained in Attachment C.

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Erosion and Sediment Controls

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Stormwater controls have been designed, installed, and maintained in compliance with Part 2.1 of the 2017 CGP. If any stormwater controls must be designed (e.g., sediment basins or conveyance channels), the design documentation must be included in Attachment S.

Erosion and Sediment Controls must be implemented to address the requirements of Part 2.2 of the 2017 CGP.

This section of the SWPPP provides general guidance for compliance with the 2017 CGP. Ultimately the project Operators are responsible for making sure sufficient controls are implemented to effectively meet the conditions of the 2017 CGP.

The purpose of an erosion and sedimentation control program is to minimize the discharge of pollutants from earth-disturbing activities during the construction phase of the project. The program described in this SWPPP incorporates BMPs specified in guidelines developed by the DEP[1] and the U.S. Environmental Protection Agency[2] and complies with the requirements of the NPDES General Permit for Storm Water Discharges from Construction Activities.

Proper implementation of the erosion and sedimentation control program will:

- minimize exposed soil areas through temporary stabilization and construction sequencing;
- minimize sediment track-out from the site;
- minimize the generation of dust;
- minimize soil compaction;
- place structures to manage stormwater runoff and erosion; and
- establish permanent vegetative cover or other forms of stabilization in accordance with Part 2.2.14 of the Permit.

The Contractor will install stormwater controls prior to the commencement of each phase of earth-disturbing activities per Part 2.1.3 of the 2017 CGP. All manufactured control measures will be installed and maintained in accordance with the manufacturer's specifications. The site Contractor will inspect all erosion and sediment controls in accordance with the applicable requirements in Part 4, document findings in accordance with Part 4, and perform corrective actions in accordance with Part 5 of the 2017 CGP.

The following sections describe the erosion and sedimentation controls that may be used on this site. **The Contractor will implement, modify, and amend the stormwater controls identified in this section as necessary.** Please refer to the NSTAR BMP Manual located in Attachment N for specifications on installation and maintenance.

1 Massachusetts Department of Environmental Protection, 1993. *Massachusetts Nonpoint Source Management Manual, The Megamanual: A Guidance Document for Municipal Officials.*

2 United States Environmental Protection Agency, 1992. *Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.*

7.1 Natural Buffers or Equivalent Sediment Controls

The requirements for natural buffers are described in Part 2.2.1 and Appendix G of the 2017 CGP. This section of the SWPPP describes project compliance activities to maintain natural buffers in compliance with the 2017 CGP.

Documentation of compliance with buffer requirements is located in Attachment O.

7.1.1.1 Buffer Compliance Alternatives

Are there any surface waters within 50 feet of the project's earth disturbances?

☒ YES ☐ NO

(Note: If no, no further documentation is required under Section 7.1 of this SWPPP Manual.)

If there are surface waters within 50 feet of the project's earth disturbances, continue below:

☐ The project will provide and maintain a 50-foot undisturbed natural buffer.

Note (1): The project must show the 50-foot boundary line of the natural buffer on the Site Map.

Note (2): The project must show on the Site Map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ The project will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Note (1): The project must show the boundary line of the natural buffer on the site map.

Note (2): The project must show on the site map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore the project will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

☒ The project qualifies for one of the exceptions described in the 2017 CGP Appendix G, Part G.2. (If this box is checked, provide information on the applicable buffer exception that applies in Section 7.1.1.2.)

7.1.1.2 Buffer Exceptions

Indicate whether any of the following exceptions to the buffer requirements apply to the project site. Refer to Part 2.2.1 and Appendix G.2 of the 2017 CGP for more information.

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☐ There is no discharge of stormwater to the surface water that is located 50 feet from my construction disturbances.

Note: If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

☐ No natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for this project.

Note (1): If this exception applies, no further documentation is required to achieve compliance with Part 2.2.1.

Note (2): Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, the project must comply with Part 2.2.1 and Appendix G.2.2 of the 2017 CGP.

☒ For a "linear project" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible to implement one of the Part 2.2.1.a compliance alternatives provided that additional measures described in Appendix G.2.2 of the 2017 CGP are met.

☐ The project qualifies as "small residential lot" construction and meets the compliance alternatives described in Appendix G.3 of the 2017 CGP.

☐ Buffer disturbances are authorized under a CWA Section 404 permit.

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

Note (2): This exception only applies to the limits of disturbance authorized under the Section 404 permit, and does not apply to any upland portion of the construction project.

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

7.2 Perimeter Controls

Refer to Part 2.2.3 of the 2017 CGP for information on the requirements for perimeter controls. Some exceptions apply to linear projects.

7.2.1 General Perimeter Controls

Installation of perimeter controls must be completed prior to the commencement of earth-disturbance activities. This section of the SWPPP provides examples of perimeter controls that the General Contractor may use to effectively control stormwater on construction sites. The General Contractor may select and install perimeter controls at their discretion. The locations of perimeter controls should be clearly identified on the Site Map.

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The General Contractor will record activities associated with perimeter controls in the following project logs:

Table 28 Recording Requirements: Perimeter Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.2.2 Specific Perimeter Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.2.2.1 Compost Filter Tube

Compost Filter Tubes consist of a jute mesh or other approved biodegradable material filled with compost and placed at the limit of work held in place with stakes. They are appropriate for use as perimeter controls.

The General Contractor will prepare and install compost filter tubes in accordance with manufacturer recommendations.

Inspection and Maintenance Requirements

Inspection and maintenance activities for compost filter tubes will include:

Table 29 Maintenance Requirements: Compost Filter Tubes

Inspection Item	Condition	Maintenance Activity
Condition	Torn outer fabric	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly

7.2.2.1 Syncopated silt-fence

Staked silt-fence erosion control devices are commonly used to intercept, filter, and reduce the velocity of stormwater run-off. They are appropriate for use as perimeter controls. Syncopated silt fence includes offset section of fencing to intentionally create gaps every 200 feet adequate for small wildlife to pass.

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The General Contractor will place syncopated silt-fences at the downgradient edge of disturbed areas within 450 feet of a vernal pool, they are held in place by wooden stakes.

Inspection and Maintenance Requirements

Inspection and maintenance activities for syncopated silt fences will include:

Table 30 Maintenance Requirements: Syncopated Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Rotted or torn	Replace
Continuity	Break in continuous perimeter or insufficient overlap between silt fence sections	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Silt fence not dug in to the ground to prevent underflow	Reset, repair and/or re-install

7.2.2.1 Turbidity Curtain

Floating turbidity curtain may be used in open water areas to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls.

The General Contractor will place turbidity curtain at the downgradient edge of disturbed areas within open water. They are held in place by weighted toes and securing ropes to the shoreline. To be used in open water conditions where water depth is adequate to allow proper extension of the turbidly curtain skirt.

Inspection and Maintenance Requirements

Inspection and maintenance activities for turbidity curtains will include:

Table 29 Maintenance Requirements: Turbidity Curtains

Inspection Item	Condition	Maintenance Activity
Condition	Torn, loss of floatation at top	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

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7.2.2.1 Staked Tall Silt Fence

Staked tall silt fence erosion control devices are commonly used to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls. This is an alternative perimeter control to turbidity curtain in open water.

The General Contractor will place tall silt fence at the downgradient edge of disturbed areas within open water. They are held in place by driven stakes. To be used in open water conditions where water depth is adequate to allow installation of the silt fence proper but too shallow for installation of a turbidly curtain.

Inspection and Maintenance Requirements

Inspection and maintenance activities for staked tall silt fences will include:

Table 29 Maintenance Requirements: Staked Tall Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Torn, fallen down stake	Replace, or reinstall
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

7.3 Sediment Track-out

Refer to Part 2.2.4 of the 2017 CGP for information on the requirements for sediment track-out controls. Some exceptions apply to linear projects.

7.3.1 General Track-out Controls

Sediment track-out controls may be structural or non-structural.

Non-structural controls including:

- Restricting vehicle use to properly designated exit points.
- Sweeping, shoveling, or vacuuming to manually remove sediment from public rights-of-way (hosing or sweeping sediment directly into a stormwater conveyance, storm drain inlet, or surface water is prohibited).

In the event that sediment is tracked-out of the site onto the surface of off-site streets, other paved areas, and sidewalks, the contractor will remove the deposited sediment by the end of

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the same work day. If track-out occurs on a non-work day, the contractor will remove the sediment by the end of the next work day.

The General Contractor may select and install structural sediment track-out controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with sediment track-out controls in the following project logs:

Table 31 Recording Requirements: Sediment Track-out Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.3.2 Specific Track-out Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.3.2.1 Stabilized Construction Entrance/Exit

The General Contractor will establish a stabilized construction entrance consisting of a stone pad at each access point off public roads. The construction entrance may include a cross-slope to direct runoff to a protected receiving area. If track-out is observed after construction begins, the General Contractor will take additional measures to address sediment track out.

Following completion of earth-disturbing activities, the General Contractor will remove the stabilized construction entrance/exit and installing final finishing materials.

Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment track-out controls will include:

Table 32 Maintenance Requirements: Construction Entrance

Inspection Item	Condition	Maintenance Activity
Construction access routes adjacent to the disturbance area	Sediment present on vehicle travel surfaces	Sweep, shovel, or vacuum sediment from the surface, dispose of properly
Construction Entrance Condition	Muddy or sediment-laden	Add a top-dressing of stone or gravel

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7.4 Stockpiled Sediment or Soil

Refer to Part 2.2.5 of the 2017 CGP for information on the requirements for stockpile controls.

The Contractor will provide cover or appropriate temporary stabilization to stockpiles that will remain inactive/unused for more than 14 days. Temporary stabilization may be performed using vegetative or non-vegetative stabilization practices. Refer to Section 7.13 for more information on stabilization practices.

7.4.1 General Stockpile Controls

In accordance with Part 2.2.5 of the 2017 CGP, the contractor must comply with the following requirements for any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil:

- Locate the piles outside of any natural buffers established under Part 2.2.1 and physically separated from other stormwater conveyances, drain inlets, and areas where stormwater flows are concentrated.
- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;
- Provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or wind;
- Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance storm drain inlet, or water of the U.S.

Record activities associated with sediment stockpile controls in the following project logs:

Table 34 Recording Requirements: Stockpile Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.4.2 Specific Stockpile Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.4.2.1 Vegetative Stabilization

Vegetative stabilization practices may include seeding exposed surfaces with a seed mix containing a blend of rapid germinating grasses that are indigenous to the appropriate

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region of Massachusetts. Once seeded, areas will be covered with a layer of straw mulch according to the recommendations provided by the manufacturer. Refer to Section 7.13.2.1 for more information.

7.4.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may include applying straw mulch or an erosion control blanket. Refer to Section 7.13.2.2 for more information.

7.5 Minimize Dust

Refer to Part 2.2.6 of the 2017 CGP for information on the requirements for minimizing dust.

The General Contractor will record activities associated with dust controls in the following project logs:

Table 34 Recording Requirements: Dust Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

Wetting the soil and/or spreading calcium chloride will be performed, as necessary, to minimize the movement of dust and fine-grained sediment. Fugitive dust created by movement of equipment or trucks along the project corridor or dust generated by wind warrant application of dust control measures. If water is used for dust control, it shall be applied as a fine spray to wet the upper 0.5 inch of soil.

7.6 Minimize the Disturbance of Steep Slopes

Refer to Part 2.2.7 of the 2017 CGP for information on the requirements for controls on steep slopes.

Where a state, tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a “steep slope”, the 2017 CGP automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

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The General Contractor will record activities associated with steep-slope controls in the following project logs:

Table 35 Recording Requirements: Steep Slope Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.6.1 General Steep Slope Controls

During the design phase of the project, the design engineers minimized construction impacts to steep slopes to the maximum extent practicable.

Where disturbances to steep slopes are still required, the General Contractor will minimize disturbances through the implementation of erosion and sediment control practices designed for use on steep slopes.

Stabilization practices on steep slopes will occur within 14 days after grading or construction activities have temporarily or permanently ceased.

7.6.2 Specific Steep Slope Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.6.2.1 Vegetative controls

Vegetative slope stabilization practices will be used to minimize erosion on slopes of 3:1 or flatter. Temporary, rapid stabilization will be completed using annual grasses, such as annual rye. Permanent stabilization will be completed with the planting of perennial grasses or legumes.

A suitable topsoil, good seedbed preparation, soil amendments, and water will be provided for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques. Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

Refer to Section 7.13.2.1 for inspection and maintenance activities for vegetative stabilization controls.

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7.6.2.2 Erosion Control Blanket

Erosion control blankets may be combined with vegetative controls to minimize erosion on slopes 3:1 or steeper. Erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. The erosion control blanket will be installed in the direction of potential flow. Edges of the blankets must be stapled with approximately 4 inches overlap where 2 or more strip widths are required.

Refer to Section 7.13.2.2 for inspection and maintenance activities for non-vegetative stabilization controls.

7.7 Topsoil

Refer to Part 2.2.8 of the 2017 CGP for information on the requirements for the preservation of topsoil.

The General Contractor will record activities associated with topsoil controls in the following project logs:

Table 36 Recording Requirements: Topsoil Controls

Action	Recorded in
Stockpiling	Construction Activities Log Grading and Stabilization Log
Disposal	Construction Activities Log Grading and Stabilization Log

Topsoil will be preserved to the maximum extent practicable. Where it is infeasible to preserve topsoil in place, it will be repurposed throughout the site or stockpiled and disposed of in accordance with local, state and federal regulations, as necessary.

7.8 Soil Compaction

Refer to Part 2.2.9 of the 2017 CGP for information on the requirements for the reduction of soil compaction.

To avoid soil compaction, the General Contractor will limit vehicle and equipment use in areas where final vegetative stabilization will occur or where infiltration practices will be installed.

Prior to seeding or planting of areas where final vegetative stabilization will occur or where infiltration practices will be installed the soil will be inspected to determine if compaction will hinder vegetative growth.

If compaction has occurred, techniques that condition soil to support vegetative growth will be implemented. Soil conditioning techniques shall be specified, as needed by the General Contractor.

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7.9 Storm Drain Inlets

Refer to Part 2.2.10 of the 2017 CGP for information on the requirements for the protection of storm drain inlets.

The General Contractor will record activities associated with storm drain inlet protection in the following project logs:

Table 37 Recording Requirements: Stormdrain Inlet Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.9.1 General Storm Drain Inlet Controls

Prior to any earth-disturbing activities inlet protection measures will be installed. Storm drain inlet controls are required at all storm drain inlets that carry stormwater flow from the project site to a water of the U.S., even if they are located downgradient from a construction period stormwater BMP.

7.9.2 Specific Storm Drain Inlet Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.9.2.1 Siltsack Sediment Traps

The General Contractor may choose to use Siltsack sediment traps at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where silt sacks are used, the catch basin grates will be placed over the siltsack to secure it into place.

7.9.2.2 Straw Bale and Non-Woven Filter Fabric

The General Contractor may choose to use Straw bale barriers at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where straw bales are used, a layer of non-woven filter fabric will be placed beneath the grate of each catch basin to secure it into place.

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7.9.2.3 Inspection and Maintenance Requirements

Inspection and maintenance activities for storm drain inlet controls includes:

Table 38 Maintenance Requirements: Storm Drain Inlet Controls

Inspection Item	Condition	Maintenance Activity
Sediment accumulation	Sediment buildup at filter layer	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly.
Continuity	Breaks in continuous barrier	Install new or re-install original barrier structure.
Clogging	Standing water	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly. Install new or re-install restored filter layer.

7.10 Constructed Stormwater Conveyance Channels

Refer to Part 2.2.11 of the 2017 CGP for information on the requirements for the constructed stormwater conveyance channels.

The General Contractor will record activities associated with constructed stormwater conveyance channels in the following project logs:

Table 39 Recording Requirements: Conveyance Channel Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.10.1 General Conveyance Controls

The General Contractor may select and install constructed stormwater conveyance channels at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

Constructed Stormwater Conveyance Channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets. The contractor may use erosion controls and velocity dissipation devices within and along the length of any stormwater conveyance channel and at any outlet to slow runoff down and to minimize erosion. Permanent infiltration BMPs shall not be used as temporary construction sedimentation basins without prior approval of the project engineer.

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7.10.2 Specific Conveyance Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.10.2.1 Diversion Channels

Diversion channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets.

Inspection and Maintenance Requirement

Diversion channels will be inspected in accordance with the inspection schedule. If breakout or erosion is observed, the diversion channel shall be reinforced or protected by an erosion control blanket.

Inspection and maintenance activities for conveyance channel controls will include:

Table 40 Maintenance Requirements: Conveyance Channels

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment Accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

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7.11 Sediment Basins

Refer to Part 2.2.12 of the 2017 CGP for information on the requirements for construction period sediment basins.

If the General Contractor elects to use sediment basin controls, the General Contractor will update the Site Map to show their location on the project site.

The General Contractor will record activities associated with sediment basins in the following project logs:

Table 41 Recording Requirements: Sediment Basin Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.11.1 General Sediment Basin Controls

Constructed sediment basins may be used to collect runoff from construction areas to allow for suspended sediments to settle out of stormwater prior to discharge to points downstream. The following design criteria shall apply:

- Sediment basins must be placed outside any water of the U.S. and any natural buffer established under Part 2.2.1 of the 2017 CGP.
- Sediment basins must be designed and constructed to avoid collecting water from wetlands and waterbodies.
- Sediment basins must be designed and constructed to provide storage for either:
  - The volume of runoff generated from a 2-year, 24-hour design storm, or
  - 3,600 cubic feet per acre of contributing area.
- Outlet structures must be designed to withdraw water from the surface of the basin (not the invert), if feasible, see note below.
- Inlets and outlets must be constructed to dissipate velocity and prevent erosion.

Note: If the outlet structure must be designed to withdraw water from a place within the water column other than the surface, the basin must be designed to allow suspended soil particles to settle out of the water column prior to withdrawal.

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Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment basins will include:

Table 42 Maintenance Requirements: Sediment Basins

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

7.12 Chemical Treatment

Refer to Part 2.2.13 of the 2017 CGP for information on the requirements for chemical treatment.

Record activities associated with chemical treatment in the following project logs:

Table 43 Recording Requirements: Chemical Treatment Controls

Action	Recorded in
Training	Training Log
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.12.1 General Chemical Treatment Controls

In general, chemical treatment may only be applied in the following situations:

- Chemicals may only be applied where the treated stormwater is directed to a sediment control (e.g., a sediment basin, perimeter control) prior to discharge.
- Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated.

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- If chemicals will be stored on the project site, chemicals must be stored in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures.
- Use of chemicals must comply with applicable state and local requirements affecting the use of the selected treatment chemicals.
- Use of the chemicals must be in accordance with good engineering practices and specifications of the chemical provider/supplier.
  - NOTE: Departures from provider/supplier specifications must be documented in this SWPPP.
- All personnel who handle and/or use treatment chemicals must be undergo appropriate, product-specific training
- There are additional restrictions for the use of cationic chemicals. Prior authorization is required (Part 1.1.9 of the 2017 CG) and authorization is conditioned on compliance with additional measures to ensure that the use of the chemicals will not cause and exceedance of the water quality standards.

7.12.2 Specific Chemical Treatment Controls

The General Contractor will list all treatment chemicals in the table below. If any of the chemicals are cationic, the General Contractor will indicate whether the authorization has been obtained from the Regional Office (EPA). Include correspondence and indicate whether a record of the authorization is included in this SWPPP in Attachment P.

Table 44 List of Treatment Chemicals and Dosage/Use to be used on Site

Chemical	Dosage and Application Details	Cationic Authorization in Attachment P
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

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Table 45 Departures from Provider/Supplier Specifications

Chemical	Dosage and Application Notes

7.13 Site Stabilization

Refer to Part 2.2.14 of the 2017 CGP for information on the requirements for site stabilization.

The General Contractor will record activities associated with site stabilization in the following project logs:

Table 46 Recording Requirements: Site Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

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7.13.1 General Site Stabilization Controls

The contractor will implement and maintain stabilization measures that minimize erosion from exposed portions of the site in accordance with Parts 2.2.14a and 2.2.14b of the 2017 CGP.

- **Timeline**: Initiate stabilization measures **immediately** in any areas of exposed soil where construction activities have ceased and will not resume for 14 or more calendar days. The EPA may propose an accelerated schedule if site conditions warrant additional protection measures. Some exceptions for unforeseen circumstances apply, refer to Parts 2.2.14(a)(iii) of the 2017 CGP. Document any departures from the standard timeline in the construction activities log.
- **Timeline**: for discharges to sediment- or nutrient-impaired waters or to a water that is identified by Massachusetts or the EPA as a **Tier 2, Tier 2.5, or Tier 3** water, complete stabilization as soon as practicable but no later than 7 calendar days after stabilization has been initiated.

Site stabilization practices may be temporary or permanent, vegetative or non-vegetative.

7.13.2 Specific Site Stabilization Controls

This section of the SWPPP describes site stabilization practices that the contractor may use during the course of the work.

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.13.2.1 Vegetative Stabilization

Temporary, rapid vegetative stabilization will be completed using annual grasses, such as annual rye. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Permanent vegetative stabilization will provide uniform perennial cover with a density of 70 percent or more of the natural background cover.

The Contractor will provide a suitable topsoil, good seedbed preparation, soil amendments, and water for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques.

Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

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7.13.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may consist of the application of mulch or erosion control blankets.

Mulch Application

If application of mulch is necessary, mulch will be applied at a rate of 90 pounds per 1,000 square feet. The mulch will be anchored with a tacking coat (non tar) applied by a hydroseeder. Steeper slopes (greater than 10 percent) will be covered with a bonded fiber matrix.

Erosion Control Blanket

Erosion control blankets will consist of bio-degradable materials such as mats of woven jute and/or coconut fiber.

Erosion control blankets may be combined with vegetative controls. For permanent stabilization applications, erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch-deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. Edges of the blankets must be stapled with approximately 4 inches overlap where two or more strip widths are required.

Erosion control blankets are applied to the soil surface as a continuous sheet and are used to protect disturbed areas from erosion and to enhance seed growth, typically where moving water is likely to wash out new vegetative plantings and mulches are ineffective.

Inspection and Maintenance Requirements

Inspection and maintenance activities for site stabilization will include:

Table 47 Maintenance Requirements: Site Stabilization

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
SWPPP		Maintain the SWPPP throughout the construction period in accordance with the terms of the 2017 CGP.

7.14 Dewatering Practices

Refer to Part 2.4 of the 2017 CGP for information on the requirements for dewatering.

7.14.1 General Dewatering Practices

If project activities require dewatering, the General Contractor will implement dewatering practices to comply with the following requirements. The General Contractor:

› Will treat dewatering discharges with controls to minimize discharges of pollutants

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- Will not discharge visible floating solids or foam
- Will use an oil-water separator or suitable filtration device that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials.
- Will discharge water to vegetated, upland areas of the site to promote infiltration.
- Will comply with velocity dissipation requirements of Part 2.2.11
- Will handle backwash water by either hauling it away or returning it to the beginning of the treatment process
- Will replace and clean the filter media used in the dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

The General Contractor may select and install dewatering controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with dewatering controls in the following project logs:

Table 48 Recording Requirements: Dewatering Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.14.2 Specific Dewatering Practices

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.14.2.1 Dewatering Filter Bag

The dewatering filter bag consists of a non-woven geotextile filter fabric placed at the outlet of one (maximum diameter) six-inch discharge hose. If the dewatering filter bag will be used as a construction period dewatering control device, any bags will be placed on relatively flat terrain, free of brush and stumps. If rough ground conditions make punctures likely, a geotextile fabric will be placed beneath the filter bag. Unattended filter bags will be encircled with a straw bale and silt fence barrier.

Inspection and Maintenance Requirements

All dewatering structures will be placed as far away from wetland resources as practicable. Filter bags used during construction will be bundled and removed for proper disposal. Filter media shall be cleaned and replaced in all dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

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Pollution Prevention

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8.1 Potential Sources of Pollution

The following list identifies pollutant generating activities that are likely to occur on the project site in accordance with Part 7.2.3.g of the 2017 CGP.

Table 49 Pollutant Generating Activities and Pollutants Located on Site

Pollutant-generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)	Location on Site (or reference SWPPP site map where this is shown)
Vehicle Maintenance	Petroleum-based products	
Cleared & Graded Areas	Soil erosion	
Portable Toilets	Sewage	
Fuel Tanks	Fuel oil, gasoline, other fuels	
Storage Areas	Soil erosion, fuel oil, gasoline, concrete, vehicle fluids, paints, solvents, adhesives	

8.2 Fueling and Maintenance of Equipment or Vehicles

When fueling or maintaining equipment or vehicles, the contractor will adhere to the following requirements specified in Part 2.3.1 of the 2017 CGP:

- Provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities.
- If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;
- Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;
- Use drip pans and absorbents under or around leaky vehicles;
- Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;
- Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge. **Do not clean surfaces by hosing the area down.**
- Whenever possible refueling shall take place at least 100 feet away from any vegetated wetland or open water areas.

8.3 Washing of Equipment and Vehicles

When washing equipment and/or vehicles, the contractor will adhere to the following requirements specified in part 2.3.2 of the 2017 CGP.

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- Provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of washing.
- Ensure that there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water.
- For storage of soaps, detergents, or solvents, the contractor must provide either cover (e.g., plastic sheeting or temporary roofs) to prevent these detergents from coming into contact with rainwater, or a similarly effective means designed to prevent the discharge of pollutants from these areas.

Effective controls may include, but are not restricted to, locating activities away from surface waters and stormwater inlets or conveyances and directing wash waters to a sediment basin or sediments trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

Refer to Part 2.3.4 of the 2017 CGP for additional requirements for handling wash water associated with concrete, paint, or stucco.

8.4 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

When storing, handling, and disposing of construction products, materials, and wastes, the contractor will adhere to the following good-housekeeping practices specified in part 2.3.3 of the 2017 CGP.

- An effort will be made to store only enough product required to do the job;
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers, and (if possible) under a roof or other enclosure;
- Products will be kept in their original containers with the original manufacturer's label;
- Substances will not be mixed with one another unless recommended by the manufacturer;
- Whenever possible, all of a product will be used before disposing of the container;
- Manufacturer's recommendations for proper use and disposal will be followed; and
- The site superintendent will inspect the storage area daily to ensure proper use and disposal of materials on-site.

The following practices will reduce the risks associated with hazardous materials (e.g., petroleum products, solvents):

- A copy of all Material Safety Data Sheets (MSDS) for materials or products used during construction will be kept in the office trailer;
- Products will be kept in original containers unless they are not re-sealable;
- Original labels and material safety data (MSD sheets) will be retained; they contain important product information; and
- If surplus product must be disposed, manufacturer's or local- and state-recommended methods for proper disposal will be followed.

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8.4.1 Building Products

In accordance with CGP Part 2.3.3.b, all containers will be tightly sealed and covered with plastic sheeting or a temporary roof when not required for use. Excess materials will be properly disposed according to manufacturer's instructions or state and local regulations and shall not be discharged to the storm sewer system. No storage will occur within 100 feet of a wetland or waterway.

8.4.2 Pesticides, Herbicides, Insecticides

Pesticides, herbicides, and insecticides will not be used at the Project Site.

8.4.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

In accordance with CGP Part 2.3.3.c products stored on site will be contained in water-tight containers with either

- a cover to minimize the exposure of the container to precipitation and to stormwater or
- or a similarly effective means detained to minimize the discharge of pollutants from these areas such as secondary containment

All on-site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. Spills will be cleaned up immediately, using dry clean-up methods where possible. The source of the spill will be eliminated to prevent continuation of an on-going discharge.

No vehicle maintenance or handling of petroleum products will occur within 100 feet of a wetland or waterway.

Any asphalt substances used on-site will be applied according to manufacturer's recommendations. No petroleum-based or asphalt substances will be stored within 100 feet of a wetland or waterway.

8.4.4 Hazardous or Toxic Waste

In accordance with CGP Part 2.3.3.d, the contractor will:

- Separate hazardous or toxic waste from construction and domestic waste;
- Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;
- Store all containers that will be stored outside within appropriately sized secondary containment (e.g., spill berms, decks, spill containment pallets) to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., storing chemicals in covered area or having a spill kit available on site); and

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- Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.
- Hosing will not be utilized as a method to clean surfaces or spills.
- Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

All hazardous waste materials (e.g., petroleum products, solvents) will be disposed in the manner specified by local and state regulation, or by the manufacturer. Site personnel will be instructed in these practices, and the site construction supervisor will be responsible for seeing that these procedures are followed.

8.4.5 Construction and Domestic Waste

In accordance with CGP Part 2.3.3.e, the contractor will provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes. Waste containers will be covered to prevent precipitation from entering the container and becoming a source of pollution. Alternatively, the waste container will be kept in secondary containment to prevent discharges of contaminated stormwater.

Daily loose trash removal will prevent litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for stormwater discharges. All loose trash will be placed in appropriate storage containers and will be disposed of properly.

The General Contractor will identify the areas to be used for storing dumpsters, compactors or other raw or waste materials on the Site Map.

8.4.6 Large Structures Built or Renovated prior to January 1980

In accordance with CGP Part 2.3.3.f, the contractor will implement controls to minimize the exposure of PCB-containing building materials including paint, caulk, and pre-1980s fluorescent light fixtures to precipitation and stormwater and ensure that disposal of such materials is performed in compliance with applicable state, federal and local laws.

8.4.7 Sanitary Waste

Portable toilets will be placed away from waters of the U.S., stormwater inlets and/or conveyances and will be secured in place so that they will tip or be knocked over. All sanitary waste will be collected from the portable units by a licensed contractor as required, and disposed in compliance with state and local regulations.

8.5 Washing of Applicators and Containers used for Paint, Concrete or Other Materials

In compliance with the prohibition in CGP Parts 2.3.4, the contractor must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, the contractor must:

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- Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;
- Handle washout or cleanout wastes as follows:
  - Do not dump liquid wastes in storm sewers;
  - Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3; and
  - Remove and dispose of hardened concrete waste consistent with handling of other construction wastes in Part 2.3.3.
- Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

8.6 Pavement Sweeping

Pavement sweeping may be performed daily or as needed, when track-out has occurred. The sweeping program will remove sediments and contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater.

8.7 Spill Prevention and Response

The following practices will be followed for spill control, notification, and cleanup:

The General Contractor is responsible for the daily operations and is also responsible for coordinating spill prevention and cleanup coordination. The General Contractor will designate at least three other site personnel to receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the on-site office trailer.

- Spills of toxic or hazardous material in excess of reportable quantities, as established in the under 40 CFR 110, 40 CFR 117, or 40 CFR 302, will be reported to the following agencies as soon as the General Contractor has knowledge of the release:

Massachusetts Department of Environmental Protection Division of Hazardous Waste	(617) 292-5851 or (978) 661-7679
National Response Center	(800) 424-8802

- All spills will be cleaned up immediately after discovery;
- The spill area will be kept well ventilated and personnel will wear protective clothing to prevent injury from contact with a hazardous substance; and
- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be informed of the procedures and the location of the information and cleanup supplies;

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- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but will not be limited to the emergency response equipment listed herein;

A comprehensive Spill Prevention Control and Countermeasure (SPCC) plan will be developed and implemented by the General Contractor and other Operators. At a minimum the SPCC, will discuss:

- Spill prevention equipment;
- Spill prevention supplies provided on-site; and
- Spill prevention training to be provided by the Owner and/or Tenant to designated employees.

8.7.1 Initial Notification

In the event of a spill the notify the 24-hour Emergency Contact (Section 0) immediately.

The 24-hour Emergency Contact or their chosen delegate will immediately notify emergency response services and notify the local boards and commissions at the first possible opportunity:

- Fire Department (immediately)
- the Police Department, (immediately)
- the Board of Health (at first opportunity)
- and the Conservation Commission (at first opportunity)

8.7.2 Further Notification

Based on the assessment from the Fire Chief, additional notification to a cleanup contractor may be made. The Massachusetts Department of Environmental Protection (DEP) and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

8.7.3 Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following pages.

8.7.4 Reporting

A copy of the Spill Report Template is included in Attachment N.

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Table 50 Emergency Notification Phone Numbers

1A	24-hour Contact	Eversource	T: (###) ###-###
1B	Alternate Contact		T: (###) ###-###
2	Fire and Police		911
3	Cleanup Contractor		T: (###) ###-###
4	MassDEP		T: (800) 340-1133
5A	National Response Center		T: (800) 424-8802
5B	USEPA		T: (800) 424-8802 T: (800) 424-8802
6A	Sudbury Board of Health		T: (978) 440-5479
6B	Marlborough Board of Health		T: (508) 460-3751
6C	Hudson Board of Health		T: (978) 562-2020
6D	Stow Board of Health		T: (978) 897-4592
7A	Sudbury Conservation Commission	Coordinator Lori Capone	T: (978) 440-5471
7B	Hudson Conservation Commission	Agent/Planner Pam Helinek	T: (978) 568-9641
7C	Stow Conservation Commission	Coordinator Kathy Sferra	T: (978) 897-8615

Post this list of emergency contact numbers in the main construction/facility office in a location that is readily accessible to all employees.

Emergency Response Equipment

The following is an example of an equipment and materials list that must be prepared by the Owner and Tenant. Equipment and Supplies on this list shall be maintained at all times and stored in a secure area for long-term emergency response need.

Table 51 Emergency Response Equipment

Supply	Quantity	Supplier
Sorbent Pillows (Pigs)	2	http://www.newpig.com
Sorbent Boom/Sock	25 feet	Item # KIT276 — mobile container with two pigs, 26 feet of sock
Sorbent Pads	50	50 pads, and five pounds of absorbent (or equivalent)
Lite-Dri® Absorbent	5 pounds	http://www.forestry-suppliers.com
Shovel	1	Item # 33934 — Shovel (or equivalent)
Pry Bar	1	Item # 43210 — Manhole cover pick (or equivalent)
Goggles	1 pair	Item # 23334 — Goggles (or equivalent)
Heavy Gloves	1 pair	Item # 90926 — Gloves (or equivalent)

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Compliance with Other Regulations

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9.1 Endangered Species

Appendix D of the 2017 CGP describes eligibility requirements with regard to the protection of threatened and endangered species and designated critical habitat.

9.1.1 Eligibility Criterion

Under which criterion listed in Appendix D of the 2017 CGP are you eligible for coverage under this permit?

☐ A ☐ B ☐ C ☐ D ☒ E

- **Criterion A.** No federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of the 2017 CGP.
- **Criterion B.** The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.
- **Criterion C.** Federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.
- **Criterion D.** Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- **Criterion E.** Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under Section 7 of the ESA has been concluded.

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The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

- a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or
- written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally designated habitat.

› You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

› **Criterion F.** Your construction activities are authorized through the issuance of a permit under Section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

› For reference purposes, the eligibility criteria listed in Appendix D of the 2017 CGP are as follows:

9.1.2 Supporting Documentation

Provide documentation for the applicable eligibility criterion you select in Appendix D of the 2017 CGP, as follows:

For criterion A, indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the 2017 CGP). Check the applicable source of information you relied upon:

☐ Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service.

☐ Publicly available species list.

☒ Other source: IPaC

For criterion B, provide the Tracking Number from the other operator's notification of permit authorization:

Provide a brief summary of the basis used by the other operator for selecting criterion A, B, C, D, E, or F:

For criterion C, provide the following information:

› Any federally listed species and/or designated habitat located in your "action area"

› The distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site with you NOI.

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For criterion D, E, or F, attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation or coordination activities.

Supporting documentation related to project compliance with the Endangered Species Act is provided in Attachment F.

9.2 Historic Preservation

Appendix E of the 2017 CGP describes eligibility requirements with regard to the protection of historic properties, including tribal lands.

The Operator responsible for finalizing this SWPPP must:

- Fill out the answers to the questions below for
  - Appendix E, Step 2
  - Appendix E, Step 3
  - Appendix E, Step 4
- Insert copies of any correspondence with the Massachusetts Historical Commission into Attachment G.

9.2.1 Appendix E, Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

- ☐ Dike
- ☐ Berm
- ☐ Catch Basin
- ☐ Pond (Bioretention Basin)
- ☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- ☒ Culvert
- ☐ Other type of ground-disturbing stormwater control: Subsurface infiltration structures

(Note: If you will not be installing any ground-disturbing stormwater controls, no further documentation is required for this section of the SWPPP template.)

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9.2.2 Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties?

☐ YES ☒ NO

If yes, no further documentation is required for this section of the SWPPP template. If no, proceed to Appendix E, Step 3.

9.2.3 Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties?

☐ YES ☒ NO

If yes, provide documentation of the basis for your determination. If no, proceed to Appendix E, Step 4.

9.2.4 Appendix E, Step 4

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other tribal representative (whichever applies) respond to you within 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties?

☒ YES ☐ NO

If no, no further documentation is required for this section of the SWPPP template.

If yes, describe the nature of their response:

☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☒ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☐ Other: *Response from MHC indicating determination that the proposed project will have no adverse effect on significant historic or archaeological properties is included in Attachment G.*

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Supporting documentation related to project compliance with the Historic Preservation is provided in Attachment G.

9.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

- ☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)
- ☐ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow
- ☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

All stormwater structures meeting the definition of Underground Injection Wells shall be registered in accordance with DEP regulations 310 CMR 27.00. Copies of correspondence with the MassDEP or the EPA Regional Office should be included in the SWPPP.

Supporting documentation related to project compliance with the Safe Drinking Water Act is provided in Attachment Q.

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Attachment A
2017 Construction General Permit

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Attachment B
Certifications

Refer to Section 1 of this SWPPP Manual for more information.

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Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

Name of person/position: _____

Company: _____

Address: _____

City, State, zip: _____

Phone: _____

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

OWNER	**CONTRACTOR**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

SUBCONTRACTOR (Operator status)	**SUBCONTRACTOR (Operator status)**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Subcontractor Certification (Non-Operator Status)

Stormwater Pollution Prevention Plan

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

"I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP."

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

Signature: _____

Title: _____

Date: _____

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Attachment C
EPA NOIs and EPA NOTs

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Attachment D
Project Plans

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Attachment E
Site Map

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Site Map Requirements (Part 7.2.4 of the 2017 CGP):

1. Boundaries of the area of disturbance
2. 50-foot buffer around the area of disturbance
3. Identify areas of steep slope
4. Locations of stockpiles
5. Locations of construction vehicle access
6. All stormwater discharge points from the area of disturbance (to waterbodies AND to storm drain inlets)
7. All surface waters that the area of disturbance discharges to
8. The location and nature of all erosion and sediment controls
   - Perimeter controls
   - Storm drain inlet controls
   - A note that indicates that the contractor will provide information for any other types of controls required.
9. Location of proposed, post-construction impervious surfaces and structures
10. Location of on-site and off-site construction support activity areas covered by this permit
11. Locations of all waters of the US within and one mile downstream of the site. Also identify if any are listed as impaired, or are identified as Tier 2, Tier 2.5, or Tier 3.
12. Areas of federally listed critical habitat within the site and/or at discharge locations
13. Type and extent of pre-construction cover on the site
14. Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities.
15. Locations of all potential pollutant generating activities.

Locations where any chemicals will be used and stored.

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Attachment F
Endangered Species Act

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Attachment G
Historic Preservation

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Attachment H
Training Log and Attendance Forms

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Training Log

This log provides a table of contents for the training forms. Insert training attendance lists into the field binder.

Date of Inspection	Notes:	Initials

Attach additional sheets as necessary

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Stormwater Pollution Prevention Training Attendance Form

Date/Time of Training:	
Instructor (name/title):	
Training Location:	
Training Duration:	

Topics addressed in this training

- ☐ Sediment and Erosion Controls
- ☐ Stabilization Controls
- ☐ Pollution Prevention Measures
- ☐ Emergency Procedures
- ☐ Inspections/Corrective Actions
- ☐ Other: _____

Print Name of Attendee:	**Initials**

Attach additional sheets as necessary

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Attachment I
SWPPP Amendment Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Amendment Log

This log provides a table of contents for the amendments to the SWPPP. Insert supplemental materials (if applicable) into the field binder and note their location.

No.	Date of Amendment	Summarize the changes to the SWPPP and indicate any supplemental materials that have been added	Authorization[3] (Name and Signature)	All Other Operators Notified of the Change
1				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐

Attach additional sheets as necessary.

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3 Amendments must be authorized by an individual who meets the requirements of Appendix I, Part 1.11b of the 2017 CGP.

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Attachment J
Construction Activities Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Record the following activities in the Construction Activities log.

Type of Action:	Information to include in the Construction Activity Log
Site-mobilization activities commence	› Record the date
Install construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is installed. Record the date each control becomes operational.
Earth-disturbance activities commence	› Record the date, the location on the site, and the type of activity. Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. Record the activity in the Grading and Stabilization Log.
Earth-disturbance activities cease	› Record the date, the location on the site, and the type of activity. › Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. › Record the activity in the Grading and Stabilization Log.
Site stabilization measures commence (P/T)	› Record the date, the location on the site, and the type of site stabilization measure commenced. Indicate if the stabilization measure is temporary or permanent. Record the activity in the Grading and Stabilization Log.
Site stabilization measures cease (P/T)	› Record the date, the location on the site, and the type of site stabilization measure that has ceased. Record the date that the stabilization measure becomes operational.Record the activity in the Grading and Stabilization Log.
Removal of construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is removed.
Removal of construction equipment and vehicles	› Record the date that all equipment and vehicles vacate the site.
Cessation of pollutant-generating activities	› Record the date that all pollution generating activities on the site cease.
Construction activities cease	› Record the date.

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Attachment K
Grading and Stabilization Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Date	Type of Action	Notes:	Supplemental Log Entry Created[4]
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Attach additional sheets as necessary.

4 If the activity type is an earth disturbance activity or a site stabilization measure, then also record the activity in the separate Grading and Stabilization Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Grading and Stabilization Log

Date Grading Activity Initiated	Date Grading Activity Ceased	Description of Grading Activity	Date Stabilization Measure Initiated	Date Stabilization Achieved	P/T	Description of Stabilization Measure

P = Permanent, T = Temporary

Attach additional sheets as necessary

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Attachment L
Inspection Log and Template Forms

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Stormwater Pollution Prevention Plan (SWPPP) Construction Site Inspection Report

General Information					
Name of Project	[Insert project name]	**NPDES ID No.**	[Insert NPDES ID number]	**Inspection Date**	[Insert date of inspection]
Weather conditions during inspection	[Enter the weather conditions occurring during the inspection]	**Inspection start time**	[Enter the time you started the inspection.]	**Inspection end time**	[Enter the time you ended the inspection.]
Weather conditions since last inspection; identify any storms and amount of rainfall	[Enter the weather conditions occurring during the inspection]				
Inspector Name, Title & Contact Information	[Enter the inspector's name, title, and contact information (company name, address, email, and phone).]				
Present Phase of Construction	[Specify the current phase of the project.]				
Inspection Location	[If multiple inspections are required for this project, specify location where this inspection is being conducted. If necessary, complete additional forms for each location.]				

Inspection Frequency *(Note: you may be subject to different inspection frequencies in different areas of the site. Check all that apply)*

Standard Frequency:

☐ Every 7 days

☐ Every 14 days and within 24 hours of a 0.25" rain or the occurrence of runoff from snowmelt sufficient to cause a discharge

Increased Frequency:

☐ Every 7 days and within 24 hours of a 0.25" rain (for areas of sites discharging to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3)

Reduced Frequency:

☐ Twice during first month, no more than 14 calendar days apart; then once per month after first month; (for stabilized areas)

☐ Twice during first month, no more than 14 calendar days apart; then once more within 24 hours of a 0.25" rain (for stabilized areas on "linear construction sites")

☐ Once per month and within 24 hours of a 0.25" rain (for arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought)

☐ Once per month (for frozen conditions where earth-disturbing activities are being conducted)

Was this inspection triggered by a 0.25" storm event? ☐ Yes ☐ No

If yes, how did you determined whether a 0.25" storm event has occurred?

☐ Rain gauge on site ☐ Weather station representative of site. Specify weather station source: [Enter the source for your weather station data.]

Total rainfall amount that triggered the inspection: [Specify rainfall amount (in inches)]

Was this inspection triggered by the occurrence of runoff from snowmelt sufficient to cause a discharge? ☐ Yes ☐ No

Stormwater Pollution Prevention Plan (SWPPP) Construction Site Inspection Report

Unsafe Conditions for Inspection

Did you determine that any portion of your site was unsafe for inspection per CGP Part 4.1.5? ☐ Yes ☐ No

If "yes", complete the following:

- Describe the conditions that prevented you from conducting the inspection in this location: [Provide short description of the conditions preventing the inspection.]
- Location where conditions were found: [Specify location(s) on the site where unsafe conditions were found.]

Condition and Effectiveness of Erosion and Sediment (E&S) Controls (CGP Part 2.2)				
Type/Location of E&S Control [insert additional rows if applicable]	**Maintenance Needed?***	**Corrective Action Required?***	**Date on Which Maintenance or Corrective Action First Identified?**	**Notes**
1. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
2. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
3. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
4. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
5. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
6. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
7. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
8. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
9. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
10. [E&S control] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]

*** Note:** The permit differentiates between conditions requiring routine maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition. Corrective actions are triggered only for specific conditions, which include: 1) A stormwater control needs repair or

replacement (beyond routine maintenance) if it is not operating as intended; 2) A stormwater control necessary to comply with the permit was never installed or was installed incorrectly; 3) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1; 4) One of the prohibited discharges in Part 1.3 is occurring or has occurred; or 5) EPA requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.8. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at https://www.epa.gov/npdes/stormwater-discharges-construction-activities#resources. See Part 5 of the permit for more information.

Condition and Effectiveness of Pollution Prevention (P2) Practices (CGP Part 2.3)				
Type/Location of P2 Practices [insert additional rows if applicable]	**Maintenance Needed?***	**Corrective Action Required?***	**Date on Which Maintenance or Corrective Action First Identified?**	**Notes**
1. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
2. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
3. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
4. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
5. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
6. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
7. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
8. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
9. [P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]
10.[P2 practice] [Location]	☐Yes ☐No	☐Yes ☐No	[Enter date]	[Enter notes here]

Stormwater Pollution Prevention Plan (SWPPP) Construction Site Inspection Report

*** Note:** The permit differentiates between conditions requiring routine maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition. Corrective actions are triggered only for specific conditions, which include: 1) A stormwater control needs repair or replacement (beyond routine maintenance) if it is not operating as intended; 2) A stormwater control necessary to comply with the permit was never installed or was installed incorrectly; 3) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1; 4) One of the prohibited discharges in Part 1.3 is occurring or has occurred; or 5) EPA requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.8. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at https://www.epa.gov/npdes/stormwater-discharges-construction-activities#resources. See Part 5 of the permit for more information.

Stabilization of Exposed Soil (CGP Part 2.2.14)			
Stabilization Area **[insert additional rows if applicable]**	**Stabilization Method**	**Have You Initiated Stabilization?**	**Notes**
1. [Specific location that has been stabilized or to be stabilized]	[Specify type of stabilization]	☐Yes [Enter date] ☐No	[Enter notes here]
2. [Specific location that has been stabilized or to be stabilized]	[Specify type of stabilization]	☐Yes [Enter date] ☐No	[Enter notes here]
3. [Specific location that has been stabilized or to be stabilized]	[Specify type of stabilization]	☐Yes [Enter date] ☐No	[Enter notes here]
4. [Specific location that has been stabilized or to be stabilized]	[Specify type of stabilization]	☐Yes [Enter date] ☐No	[Enter notes here]
5. [Specific location that has been stabilized or to be stabilized]	[Specify type of stabilization]	☐Yes [Enter date] ☐No	[Enter notes here]

Description of Discharges (CGP Part 4.6.6)	
Was a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection? ☐Yes ☐No **If "yes", provide the following information for each point of discharge:**	
Discharge Location **[insert additional discharge locations if applicable]**	**Observations**
1. [Specify locations on the site where a discharge is occurring.]	Describe the discharge: [Enter text here.] At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐Yes ☐No

	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue: [Enter text here.]
1. [Specify locations on the site where a discharge is occurring.]	Describe the discharge: [Enter text here.] At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐Yes ☐No If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue: [Enter text here.]

Operator Signature and Certification
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." **Signature of Operator or "Duly Authorized Representative":** _____ **Date:** **Printed Name and Affiliation:** _____

Attachment M
Corrective Action Log and Template Forms

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Log

This log provides a table of contents for the completed corrective action log forms. Insert completed corrective action reports into the field binder.

Date of Action	Notes:	Initials

Attach additional sheets as necessary.

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Form

	BMP/Activity	Date Observed	Date Corrected	Corrective Action Needed and Notes
1				
2				
3				
4				

Corrective Action

Describe how any incidents of non-compliance have been addressed:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Authorization: _____ Date: _____

Authorization must be made by personnel identified in the Delegation of Authority and authorized to complete this task.

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Attachment N
Spill Log and Template Forms

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Hazardous Waste & Oil Spill Report

Date: _____ **Time:** _____ **AM / PM**

Exact location (Transformer #): _____

Type of equipment: _____ **Make:** _____ **Size:** _____

S / N: _____ **Weather Conditions:** _____

On or near water? ☐ Yes ☐ No **If yes, name of body of water:** _____

Type of chemical / oil spilled: _____

Amount of chemical / oil spilled: _____

Cause of spill: _____

Measures taken to contain or clean up spill: _____

Amount of chemical / oil recovered: _____ **Method:** _____

Material collected as a result of cleanup:

_____ drums containing _____

_____ drums containing _____

_____ drums containing _____

Location and method of debris disposal: _____

Name and address of any person, firm, or corporation suffering charges: _____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring: _____

Spill reported by General Office by: _____ **Time:** _____ **AM / PM**

Spill reported to DEP / National Response Center by: _____

DEP Date: _____ **Time:** _____ **AM / PM** **Inspector:** _____

NRC Date: _____ **Time:** _____ **AM / PM** **Inspector:** _____

Additional comments: _____

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Attachment O
Buffer Documentation

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Attachment P
Chemical Information

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Attachment Q
UIC Well Correspondence

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Attachment R
Local Orders of Condition

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Attachment S
Design Calculations for Stormwater Erosion Controls

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MassCentral Rail Trail - Wayside

Sudbury, Marlborough, Stow, Hudson

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CONSTRUCTION ACTIVITIES AT: Inactive MBTA ROW
Sudbury, Marlborough, Stow, and Hudson

PREPARED ON BEHALF OF: Massachusetts Department of Conservation and Recreation
251 Causeway Street
Boston, MA 02114

PREPARED FOR: Paul Jahnige, Project Manager
Massachusetts Department of Conservation and Recreation
136 Damon Road
Northampton, MA 01060
(413) 586-8706
Paul.jahnige@state.ma.us

PREPARED BY: vhb
Vanasse Hangen Brustlin, Inc.
101 Walnut Street
PO Box 9151
Watertown, MA 02471
(617) 924-1770

SWPPP Preparation Date: May 2020
Estimated Project Start Date: XX
Estimated Project End Date: XX

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1

Introduction

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This Stormwater Pollution Prevention Plan (SWPPP) manual has been prepared to address the requirements of the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activity (2017, USEPA). A copy of the 2017 CGP is included in Attachment A.

The CGP gives **Project Operators** of construction activities that meet the eligibility requirements of Part 1.1 of the 2017 CGP, authorization to discharge:

- stormwater as defined in Part 1.2.1 of the 2017 CGP, and
- non-stormwater associated with some construction activities as defined in part 1.2.2 of the 2017 CGP provided that adequate measures are taken to prevent pollution to receiving waters.

This manual is specific to project sites in **Massachusetts**, where the EPA is the permitting authority for stormwater discharges from construction sites nationally.

How to Use this Manual

This manual does not become a CGP-compliant SWPPP until the Project Operators:

- finalize the SWPPP by completing the initial activities indicated on the following pages and
- by maintaining the SWPPP during the construction period in accordance with the 2017 CGP.

Before the project activities begin, the Project Operators must review this manual, fill out relevant information in the spaces provided (or attach additional pages as necessary) and update and/or revise as necessary.

What is a Project Operator?

The 2017 CGP provides permit coverage for Project Operators (Operator) to discharge stormwater from construction sites. An Operator is any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project, which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Operators are responsible for maintaining compliance with the terms of the 2017 CGP.

All operators who wish to obtain coverage to discharge stormwater under the 2017 CGP must submit and certify their own NOI to the Environmental Protection Agency (EPA).

Department of Conservation and Recreation adopts the role of the Project Operator. Contractors and subcontractors certify that they have reviewed and will follow the provisions of the SWPPP. See Attachment B.

Eligibility for Permit Coverage

To be covered under the 2017 CGP, a party must meet the eligibility conditions and follow the requirements for obtaining permit coverage. To be eligible for coverage:

- You must be an Operator of a construction site for which discharges will be covered under this permit.
- The project's construction activities:
  - will disturb one (1) or more acres of land, or less than one (1) acre of land if the project is part of a larger common plan that will ultimately disturb one (1) or more acres of land.
  - have been designated by EPA as needing permit coverage under 40 CFR 122.26(a)(1)(v) or 40 CFR 122.26(b)(15)(ii).
- Discharges from your site are not already covered by a different NPDES permit for the same discharge or in the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.
- The project meets the requirements relevant to the Endangered Species Act (ESA) (Section 9.1).
- The project meets the requirements relevant to preservation of Historic Properties (Section 9.2).
- The project meets the requirements relevant to water quality impacts to designated waters (Section 3.2. Refer to Part 1.1.8 and 1.1.9 of the 2017 CGP).

Project Operators must file and certify an NOI at least fourteen (14) days prior to the start of project activities. https://www.epa.gov/compliance/npdes-ereporting

Compliance Requirements

Compliance with the 2017 CGP is achieved by:

- Developing a draft SWPPP (this document);
- Identifying project operators and responsible parties and obtaining authorization to perform permit compliance activities. (Section 2.1 and Attachment A);
- Submitting and certifying a Notice of Intent (NOI) to the Environmental Protection Agency (EPA) Construction General Permit Program;
- Installing a sign or other notice posted conspicuously at a safe, publicly accessible location, in close proximity to the project site. At a minimum, the notice shall include:
  - The NPDES Permit tracking number,
  - A contact name and phone number for obtaining additional project information,
  - The location where an EPA inspector or a member of the public may access a copy of the current SWPPP,
  - The statement: "If you observe indicators of stormwater pollutants in the discharge or in the receiving waterbodies, contact the EPA through the following website: https://www.epa.gov/enforcement/report-environmental-violations."
- Updating this SWPPP as necessary and maintaining compliance with the CGP and any and all Orders of Conditions during construction period activities; and
- Maintaining an updated copy of the SWPPP on the project site.

Document Control

A current copy of the following documents:

1. 2017 NPDES CGP,
2. the SWPPP and all attachments and insertions, and
3. EPA-issued authorizations must be kept **on site** at the Project field office so that they can be made available:
   - at the time of an on-site inspection by the EPA
   - upon request by EPA; a state; tribal; or local agency that approves stormwater management plans;
   - the operator of a storm sewer system receiving discharges from the site;
   - or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).

If an on-site location is unavailable for storing these documents, a notice of the plan's location must be posted near the main entrance of the construction site.

These documents may be made available to the general public by federal, state, or local agencies. These documents must be retained for at least 3 years from the date that the permit coverage expires or is terminated.

The SWPPP is a dynamic document and must be continually updated by the Operator(s) throughout construction. It is the responsibility of the Operator(s) to update and complete this manual by including the following information and performing ongoing project activity logging as described in the remainder of this document.

Task Completed	Task	See Sections
☐	Designate and Provide Contact Information for the Responsible Parties	Section 1 Attachment B Section 8.7 Attachment N
☐	Provide documentation confirming EPA authorization of the Project	Attachment C
☐	Provide a construction schedule including dates of major earthwork, stabilization and/or erosion control installations.	Table 24 Appendix J
☐	Review the Erosion and Sediment Controls described in this manual and add or update as needed. Document the installation and maintenance of Erosion and Sediment Controls.	Section 7 Attachment E Attachment J Attachment O Attachment S
☐	Identify any chemical treatments that may be applied to the site and describe dosage, application techniques, and training for personnel.	Section 7.12 Attachment P
☐	Identify potential sources of pollution.	Table 48 Section 8.1
☐	Provide documentation of correspondence congruent with the Endangered Species Act	Section 9.1 Attachment F
☐	Provide documentation of correspondence with Massachusetts Historical Commission. Submit the Project Notification Form (PNF) to Massachusetts Historic Commission	Section 9.2 Attachment G
☐	Provide documentation of compliance with DEP regulations 310 CMR 27.00 (Underground Injection Wells)	Section 9.3 Attachment Q

The SWPPP must be kept up to date throughout the construction period until a Notice of Termination (NOT) Form has been submitted to the EPA. From the date of submital of the NOT form, the SWPPP documents must be maintained by the Operator(s) for a period of three years.

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2

Contact Information and Responsible Parties

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2.1 Operators(s)

Individuals identified in this section are designated responsible parties for each of the project Operators. Project Operators may include, but not be limited to the site Owner, the project owner, and the general contractor. Amend this Section during the construction period if any ownership changes or any temporary or permanent staff changes occur.

Table 1 Project Role: Owner

Company or Organization:	Department of Conservation and Recreation
Name:	
Address:	251 Causeway Street
City, State, Zip	Boston, Ma 02114
Telephone:	(617) 626-1250
Fax/Email:	
Title:	

Table 2 Project Role: General Contractor

Company or Organization:	TBD
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 3 Project Role: Project Manager

Company or Organization:	Department of Conservation and Recreation
Name:	Paul Jahnige
Address:	136 Damon Road
City, State, Zip	Northampton, MA 01060
Telephone:	(413) 586-8706 ext. 20
Fax/Email:	Paul.Jahnige@state.ma.us
Title:	Project Manager

Table 4 Project Role: [Optional 2]

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Insert additional sheets as necessary.

2.2 24-hour Emergency Contact Information

The individuals identified in this Section will be available to respond to emergency conditions on the site 24 hours a day, 7 days a week. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 5 24-hour Emergency Contact (Primary)

Company or Organization:	Department of Conservation and Recreation
Name:	Paul Jahnige
Address:	136 Damon Road
City, State, Zip	Northampton, MA 01060
Telephone:	(413) 586-8706 ext. 20
Fax/Email:	Paul.Jahnige@state.ma.us
Title:	Project Manager

Table 6 24-hour Emergency Contact (Secondary)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Attach additional sheets as necessary.

2.3 Delegation of Authority

The individual authorized to sign/certify the NOI is granted the authority to sign the

- SWPPP,
- Inspection Reports,
- Corrective Action Reports and
- other permit documents.

Alternatively, the individual may delegate this authority. A duly authorized representative may only sign the documents if:

- This authorization specifies either an individual or a position (e.g., Environmental Compliance Officer) who has the responsibility for the overall operation of the regulated area or who has overall responsibility for environmental matters.
- This SWPPP includes a signed, dated written authorization.

The duly authorized representative cannot be a subcontractor or a third party. A duly authorized third party may conduct inspections and corrective actions and may complete reports, but the NOI signer/certifier or duly authorized representative identified here must sign the reports.

Insert authorization signature pages into Attachment B. Amend this Section and add pages to Attachment B during the construction period if any temporary or permanent staff changes occur.

Table 7 Duly Authorized Representative or Position (Primary)

Company or Organization:	VHB
Name:	Tracie Lenhardt
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-2961
Fax/Email:	tlenhardt@vhb.com
Title:	Project Manager

Table 8 Duly Authorized Representative or Position (Secondary, optional)

Company or Organization:	VHB
Name:	Josh Cone-Roddy
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-2797
Fax/Email:	Jcone-roddy@vhb.com
Title:	Project Engineer

Table 9 Duly Authorized Representative or Position (Tertiary, optional)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Attach additional sheets as necessary.

2.4 Stormwater Team

The duties of these personnel include one or more of the following:

1. Prepare the Draft SWPPP
2. Finalize the SWPPP
3. Implement the SWPPP
4. Oversee maintenance practices identified as BMPs in the SWPPP
5. Conduct or provide for inspection and monitoring activities
6. Identify other potential pollutant sources and make sure that they are added to the plan
7. Identify any amendments to the SWPPP necessitated by field conditions and make sure they are implemented
8. Ensure that any design changes during construction are addressed in the SWPPP

All Operators and/or Subcontractors that will use this SWPPP for compliance with the terms of their CGP must provide a certification agreement to do so. The certification agreements are located in Attachment B.

Table 10 Stormwater Team 1

Company or Organization:	VHB
Name:	Kelan Koncewicz
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-6156
Fax/Email:	KKoncewicz@vhb.com
Title:	Environmental Scientist

Continued on the next page

Table 11 Stormwater Team 2

Company or Organization:	**VHB**
Name:	Jay Quattrocchi
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-1708
Fax/Email:	VKimball@vhb.com
Title:	Environmental Scientist

Table 12 Stormwater Team 3

Company or Organization:	**Department of Conservation and Recreation**
Name:	Paul Jahnige
Address:	136 Damon Road
City, State, Zip	Northampton, MA 01060
Telephone:	(413) 586-8706 ext. 20
Fax/Email:	Paul.Jahnige@state.ma.us
Title:	Project Manager

Attach additional pages as necessary.

2.5 Personnel Responsible for Inspections

Inspections are to be performed by "qualified personnel" as defined in Part 4.1 of the 2017 CGP and shall include all areas of the site disturbed by construction activity and areas used for materials storage that are exposed to precipitation. The Inspector must look for evidence of, or the potential for, pollutants entering the storm water system, inspect the BMPs installed as part of the Plan, inspect the site drainage outfalls, inspect the site egress points for tracking, and inspect material, waste, borrow, or equipment storage and maintenance areas. If, in the course of the inspection, the inspector identifies an eroded area or an area impacted by sedimentation, additional erosion and sedimentation controls will be implemented, the discharge will be documented, and the SWPPP will be revised to include these changes.

Inspection forms are available in Attachment L. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 13 Personnel Authorized to Perform Inspections

Name: Title:	Kelan Koncewicz Environmental Scientist
Name: Title:	Jay Quattrocchi Environmental Scientist
Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	

Attach additional sheets as necessary.

2.6 Personnel Responsible for Completing Corrective Actions

The following personnel are responsible for completing corrective action forms.

Insert authorization signature pages into Appendix K. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 14 Personnel Responsible for Completing Corrective Actions (Primary)

Company or Organization:	VHB
Name:	Tracie Lenhardt
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-2961
Fax/Email:	tlenhardt@vhb.com
Title:	Project Manager

Table 15 Personnel Responsible for Completing Corrective Actions (Secondary, optional) Contractor?

Company or Organization:	
Name:	
Address:	
City, State, Zip	
Telephone:	
Fax/Email:	
Title:	

Attach additional sheets as necessary

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3

Site Evaluation Assessment and Planning

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3.1 Project/Site Information

Table 16 Project Name and Address

Project/Site Name:	MassCentral Rail Trail - Wayside
Project Street/Location:	Inactive MBTA ROW in Sudbury, Marlborough, Stow
City:	Sudbury, Marlborough, Stow, Hudson
State:	Massachusetts
Zip:	Various
County:	Middlesex

Table 17 Project Coordinates - Sudbury to Hudson

Type	Latitude		Longitude	
Eastern End (Sudbury Substation Access Road)	42.360624	N	71.398341	W
Western End (Assabet River Rail Trail Interconnection)	42.396255	N	71.535196	W

Table 18 Source for coordinate information

	Source
☐	USGS topographic map
☐	EPA Website
☐	GPS
☒	Other: (Maps.google.com)

Table 19 Horizontal Reference Datum

	Reference
☐	NAD 27
☒	NAD 83 or WGS 84
☐	Unknown
☐	Other:

3.1.1.1 Additional Information

Yes	No	
☐	☒	Is the project/site located on **Indian country lands,** or located on a property of religious or cultural significance to an Indian tribe? If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property: n/a If you are conducting earth-disturbing activities in **response to a public emergency,** document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions)*, information substantiating its occurrence *(e.g., state disaster declaration)*, and a description of the construction necessary to reestablish effective public services: n/a
☐	☒	Are you applying for permit coverage as a "**federal operator**" as defined in Appendix A of the 2017 CGP?

3.2 Discharge Information

Yes	No	
☒	☐	Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?
☒	☐	Are there any surface waters that are located within 50 feet of your construction disturbances?

3.2.1 Receiving Waters

Name(s) of the first surface water(s) that receive stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)

Table 20 Receiving Waters

Number	Name
1	Assabet River
2	Fort Meadow Brook
3	Hop Brook
4	Unnamed Stream/Tributary
5	Dudley Brook
6	Hudson wetlands 1-21 (H1-H21)
7	Sudbury wetlands 1-45 (S1-S45)

3.2.2 Impaired Waters

Use the interactive map of the 2016 integrated list of waters to identify impaired waters in the vicinity of the project area. The interactive map is available online at: http://www.mass.gov/eea/agencies/massdep/water/watersheds/integrated-list-of-waters.html

Table 21 Impaired Receiving Waters

Is this surface water listed as impaired?			If you answered yes, then answer the following:				
	Yes	No	What pollutants are causing the impairment?	Has a TMDL been completed? Yes	Has a TMDL been completed? No	Title of the TMDL document	Pollutant(s) for which there is a TMDL
Assabet River	☒	☐	(Debris/Floatables/Trash); (Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Escherichia coli; Excess Algal Growth; Fecal Coliform; Nutrient/ Eutrophication Biological Indicators; Oxygen, Dissolved; Phosphorus (Total); Taste and Odor.	☒	☐	Assabet River Total Maximum Daily Load for Total Phosphorus *(CN 201.0)*	Phosphorus
Fort Meadow Brook	☐	☒		☐	☒		
Hop Brook	☒	☐	(Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Dissolved	☒	☐		

			oxygen saturation; Escherichia coli; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Turbidity. Oxygen, Dissolved; Phosphorus (Total.				
Unnamed Tributary	☒	☐	Dissolved oxygen saturation; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Total Suspended Solids (TSS).	☒	☐		
Dudley Brook	☐	☒		☐	☐		

3.2.3 Tier 2, 2.5, or 3 Waters

In **Massachusetts**, Tier 2 waters are listed as "High Quality Waters." **All wetlands** that are not designated as an Outstanding Resource Water are considered a High Quality Water (Refer to antidegradation designations, link below).

In **Massachusetts,** Tier 2.5 waters are listed as Outstanding Resource Water, Public Water Supply, and/or Tributary to Public Water Supply, and all wetlands bordering Outstanding Resource Waters and all vernal pools.

In **Massachusetts,** Tier 3 waters are defined as Special Resource Waters. (As of February 2017, no waters are listed as Special Resource Waters).

Tier 2, Tier 2.5, and Tier 3 waters are identified and listed in the Massachusetts Water Quality Standards 314 CMR 4.00. See 314 CMR 4.06(1)(d)m for definitions. See the Tables and Figures associated with 314 CMR 4.06 available online at: https://www.mass.gov/regulations/314-CMR-4-the-massachusetts-surface-water-quality-standards

To determine applicability of specific antidegradation designations refer to: https://www.mass.gov/doc/antidegradation-implementation-procedures-0/download

Table 22 Special Receiving Waters (Tier 2, Tier 2.5 or Tier 3)

	Is this surface water designated as a Tier 2, Tier 2.5 or Tier 3 water?		If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as.
	Yes	No	
Assabet River	☒	☐	Tier 2. High quality water.
Hop Brook	☒	☐	Tier 2. High quality water.

Wetland H3	☒	☐	Tier 2. High quality water.
Wetland H12	☒	☐	Tier 2. High quality water.
Wetland S4	☒	☐	Tier 2. High quality water.
Wetland S12	☒	☐	Tier 2. High quality water.
Wetland S13	☒	☐	Tier 2. High quality water.
Wetland S14	☒	☐	Tier 2. High quality water.
Wetland S15	☒	☐	Tier 2. High quality water.
Wetland S16	☒	☐	Tier 2. High quality water.

3.3 Project Description

3.3.1 General Description

The Department of Conservation and Recreation (DCR) is proposing to construct, operate, and maintain an approximate 7.653-mile, 10-foot wide paved MassCentral Rail Trail (MCRT) extending along an inactive MBTA railroad corridor from the driveway to Eversource's Sudbury Substation on Boston Post Road (Route 20) in Sudbury, MA (Sudbury Substation) to the existing Assabet River Rail Trail off Wilkins Street in Hudson, MA. The MCRT will be constructed as the second phase of a two-phase Project. The first phase of the project includes a new Eversource underground transmission power line within the same rail corridor. Phase 2 of the Project will be constructed after completion of Phase 1.

Construction of the Project will serve the public with the development of a portion of the planned regional Mass Central Rail Trail (MCRT), a multi-use trail that will be managed by the Massachusetts Department of Conservation and Recreation. The proposed MCRT, traversing the state from west to east, will bring a number of advantages to its users, surrounding communities, and the Commonwealth as a whole.

The Project will be installed primarily along an inactive railroad right-of-way (ROW) owned by the Massachusetts Bay Transportation Authority (MBTA). The Project originates at the Sudbury Substation and travels northwest along the MBTA ROW passing through short sections of Marlborough and Stow before entering Hudson and ends connection with the existing Assabet River Rail Trail off Wilkins Street.

The width of the existing MBTA ROW varies some, but is approximately 80 feet wide. The ROW is the former Massachusetts Central Railroad corridor used for passenger and/or freight service form approximately 1880 to 1970. The MBTA ROW has not been used for rail service for over forty years and currently contains remnants of the single track railroad (ballast, tracks, and ties) in some portions. Vegetation within the MBTA ROW has not been maintained since rail service was disconnected and consists mainly of shrubby growth and forested areas. The largest undeveloped areas are associated with protected open space areas that include lands held and/or managed by the Town of Sudbury, the City of Marlborough, the Sudbury Valley Trustees (SVT), and the U.S. Fish and Wildlife Service (USFWS). In some portions of the ROW, there are existing pathways and/or trails currently used by local residents for passive recreation. Evidence of off-road vehicle use is evident in some location as well.

Proposed Project components:

1. Phase 1 - Eversource Underground Transmission Power Line

Construction of Phase 1, the new underground transmission line, will complete installation of erosion controls, the removal of rails and ties, vegetation clearing, grading, installation of the duct bank and manholes, grading of stormwater management features and placement of a 14-foot wide gravel base in preparation of Phase 2, the MCRT.

2. Phase 2 - MCRT

For Phase 2 of the Project, Eversource will turn over the construction site to DCR following installation of the 14-foot wide gravel base. DCR will fine grade and compact the surface, and then pave a 10 foot path. After paving, the shoulders will be loamed and seeded, and woody plantings will be installed. Installation of railings will complete the Project within the MBTA ROW.

Erosion and sediment controls will remain in place from Phase 1 and DCR will assume responsibility to maintain the controls for the duration of Phase 2 of the Project. Once the Project is complete and disturbed areas are stable with final vegetation, DCR will remove the erosion controls upon approval of the environmental monitor.

At roadway crossings, RRFBs will be installed that are activated by people using the MCRT to stop traffic and allow safe crossing of roadways. Construction within public roadway during Phase 2 will be limited to installation of signal equipment, pole foundations, signal poles, gateway details and pavement markings. Conduit for the crossing signals will be installed during Phase 1; during Phase 2, the signal equipment and crossing buttons will be installed.

All disturbed areas outside of the 10-foot-wide paved MCRT will be restored by loaming and seeding with only species native to New England. In addition, woody plantings proposed in Priority Habitat and at both Hop Brook crossings will be installed under the direction of a qualified environmental monitor or qualified biologist.

3.3.2 Site Maps

Attachment D contains the Project Plans for this project.

Attachment E contains Site Maps including the:

- Site Location Map
- FEMA Flood Insurance Rate Map
- Soil Map

3.3.3 Size/Footprint of the Project

The project activities will occupy the footprint identified below.

Table 23 Footprint of the Project Area

Area Description	Area (acres)
Total property size	87.3
Total area of construction disturbance	12.99
Maximum area to be disturbed at any one time	XX

3.3.4 Construction Activities Sequencing and Logging

Construction activities, phasing, and sequencing are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period.

Project Operators are responsible for maintaining a construction log that address the following project activities.

3.3.4.1 Projected Construction Sequence

The projected construction sequence presented in this section is the best estimate of the construction sequence at the time that this SWPPP template was prepared. If the general sequence presented here changes during the course of the project, amend the SWPPP to include the revised project construction sequence.

Phase 1 of this Project will be the underground electric transmission line constructed by Eversource and is subject to a separate SWPPP.

Table 24 Projected Construction Sequence (Phase 2)

Phase 2 –

Area of Disturbance 12.99 **acres**

Action	Projected Date
Fine grading and compaction of 14-foot wide gravel base	
Paving the MCRT	
Loaming and seeding disturbed areas	
Installing pole foundations, installing poles, wiring, signal lights and controllers at road crossings	
Pavement markings, gateway details,	
Remove erosion controls once site is fully stabilized	

Refer to the Construction Activities Log for actual construction sequence performance.

3.3.4.2 Construction Activity Logging Requirements

For each phase of construction, document the dates for the following activities:

- Maintain stormwater controls;
- Commencement and duration of earth-disturbing activities, including final grading, paving, loaming, and seeding final;
- Excavations for pole foundations at road crossings;
- Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;
- Final stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines subject to in Part 2.2.1; and
- Removal of temporary erosion control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

Construction Activity logs are maintained in Attachment J.

3.3.5 Construction Support Activities

Construction support activities are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period. Support activities that are not addressed in the Project Description (Section 0) must be identified here:

3.3.6 Allowable Non-Stormwater Discharges

Congruent with Section 1.2.2 of the 2017 CGP, the following non-stormwater discharges associated with construction activities are authorized under this permit provided that, with the exception of water used to control dust and to irrigate vegetation in stabilized areas, these discharges are not routed to areas of exposed soil on the site and the discharges also meet the requirements of Part 2 of the 2017 CGP.

Table 25 Allowable non-stormwater discharges likely occur at the Project Site

	Likely to be Present at the Site?	
Types of Allowable Non-Stormwater Discharges Present at the Site	**Yes**	**No**
Discharges from emergency fire-fighting activities	☐	☒
Fire hydrant flushing	☐	☒
Landscape irrigation	☐	☒
Waters used to wash vehicles and equipment	☐	☒
Water used to control dust	☒	☐
Potable water including uncontaminated water line flushing	☐	☒
Routine external building wash down	☐	☒
Pavement wash waters	☐	☒
Uncontaminated air conditioning or compressor condensate	☐	☒
Uncontaminated, non-turbid discharges of ground water or spring water	☒	☐
Foundation or footing drains	☐	☒
Construction dewatering water	☒	☐

4

Inspections, Corrective Actions, and Amendments

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4.1 Inspection Schedule

Section 4.2 and Section 4.3 of the 2017 CGP specify minimum inspection frequencies. Section 4.2 specifies the minimum inspection frequency for a typical site. Section 4.3 specifies the minimum inspection frequency for locations on the site that discharge to sensitive waters. Sensitive waters are defined as sediment or nutrient-impaired waters or waters that are identified by the State, tribe or EPA as Tier 2, Tier 2.5, or Tier 3.

Table 26 Project Inspection Schedule

Does the project area discharge to sensitive waters?		Inspection Frequency
☒ Yes		Once every 7 calendar days AND Within 24 hours of an event 0.25 inches or greater
☐ No		Choose one option below:
	☐	Once every 7 calendar days
	☐	Once every 14 calendar days AND Within 24 hours of an event 0.25 inches or greater

To determine if a storm event of 0.25 inch or greater has occurred on the site, data will be obtained from the weather station at:

Blueberry Hill – KMASUDBU29 in Sudbury, MA.

For any day of rainfall during normal business hours that measures 0.25 inches or greater, the date and rainfall amount must be recorded in the Construction Activities Log (Section 3.3.4).

The Site Inspection Log and Inspection Forms are maintained in Attachment L.

Record daily rainfall that exceeds 0.25 inches in the Construction Activities Log (Section 3.3.4).

4.1.1 Reductions in Inspection Frequency

Inspection frequency may be reduced to once per month if:

- The stabilization of the contributing area was completed more than one month prior and the stabilization activities are documented in the Construction Activities and the Grading and Stabilization Logs.
- The project is experiencing frozen soil conditions.

Exceptions may also be made for drought-stricken areas, refer to Part 4.4.2 for additional information.

4.1.1.1 Suspension of Construction Activities due to Frozen Conditions

If the project will suspend construction activities due to frozen conditions, the project may temporarily suspend inspections on the site until thawing conditions begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;
- Land disturbances have been suspended; and
- All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

4.1.1.2 Continuation of Construction Activities Despite Frozen Conditions

If the project will continue construction activities despite frozen conditions, the project may temporarily reduce inspections to once per month until thawing conditions begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;
- Land disturbances have been suspended; and
- All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

Record changes in the inspection frequency in the Construction Activities Log (Section 3.3.4).

4.2 Corrective Action Directives

Project Operators must take corrective action to address any of the following conditions if they appear at the project site:

- A stormwater control needs repair or replacement
- A stormwater control necessary to comply with the permit was not installed, or was installed incorrectly
- A discharge from the project site is causing an exceedance of water quality standards to receiving waters
- A prohibited discharge has occurred (refer to Part 1.3 of the 2017 CGP)

4.2.1 Corrective Action Timelines

For any required corrective action (refer to part 5.1 of the 2017 CGP), project operators must:

- **Immediately** take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.
- When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the **next business day.**
- When the problem requires a new or replacement control, or significant repair, install the new or modified control by **no later than 7 calendar days** from the time of discovery.
- If it is not possible to complete the action within 7 days, record the extenuating circumstances in detail on a Corrective Action Form (Attachment M).

4.2.2 Corrective Action Reports

For each corrective action taken, complete a corrective action report in accordance with the following (refer to Part 5.4 of the 2017 CGP):

- Within 24 hours of identifying the condition requiring corrective action, document the condition and the date/time it was identified.

  Within 24 hours of completing the corrective action, document the action taken and note whether any modifications to the SWPPP are required.

The Corrective Action Log and Corrective Action Report Forms are maintained in Attachment M.

4.3 Amendments

This SWPPP must be amended and the amendments must be recorded in the amendment log if any of the following conditions apply:

- Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater controls, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.3.f change during the course of construction;
- To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
- If inspections or investigations by EPA or its authorized representatives determine that SWPPP modifications are necessary for compliance with this permit;
- Where EPA determines it is necessary to impose additional requirements on your discharge, the following must be included in your SWPPP:
- A copy of any correspondence describing such requirements; and
- A description of the controls that will be used to meet such requirements.
- To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls implemented at the site; and
- If applicable, if a change in chemical treatment systems or chemically-enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

The Amendment Log is maintained in Attachment I.

5

Staff Training

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5.1 Training

Each Operator or group of Operators must assemble a Stormwater Team to carry out compliance activities associated with the requirements of the 2017 CGP. Prior to the commencement of construction activities, the Operators must ensure that the personnel on the stormwater team understand the requirements of this permit and their specific responsibilities with respect to those requirements.

All of the personnel responsible for the following activities must be trained to understand the relevant requirements under the terms of the 2017 CGP including:

- The design, installation, maintenance, and/or repair of stormwater controls (and pollution prevention controls)
- Permits that include provisions for stormwater and erosion control management include:
    - Sudbury, Stow and Hudson Orders of Conditions;
    - Sudbury Stormwater Management Permit; and
    - USACE General Permits for Massachusetts authorization
- The application and storage of treatment chemicals (if applicable)
- Conducting and documenting inspections (Part 4 of the 2017 CGP)
- Performing and documenting corrective actions (Part 5 of the 2017 CGP)

Minimum training measures for the stormwater team must include:

- Permit deadlines associated with the installation, maintenance, and removal of stormwater controls and stabilization
- The location of all stormwater controls on the site required by this permit and how they must be maintained
- The proper procedures to follow with respect to the permit's pollution prevention requirements
- When and how to conduct inspections, record findings, and take corrective actions.

All members of the stormwater team must have easy access to an electronic or paper copy of the applicable portions of this permit, the most updated copy of the SWPPP, and other relevant documents associated with the SWPPP including logs and completed forms.

The Training Log and Attendance Records are maintained in Attachment H.

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6

Notifications

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6.1 Notice of Intent (NOI)

Following the completion of the draft SWPPP, project operators may submit their NOIs to the EPA.

Permit coverage does not begin until 14 calendar days from the date that the NOI is certified by a person authorized in accordance with Appendix I of the 2017 CGP.

Within 14 calendar days, the EPA may notify the Operator(s) that the authorization has been delayed or denied.

Project NOIs and authorizations are maintained in Attachment C.

6.2 Notice of Termination (NOT)

Operators are required to continue to comply with all conditions and requirements in the permit until coverage is terminated under this permit.

To terminate permit coverage, all Operators must submit a complete and accurate NOT to the EPA. The NOT certifies that an Operator has met the requirements for termination as listed in Part 8 of the CGP. Operators must use NPDES eReporting Tool (NeT) to electronically prepare and submit an NOT for the 2017 CGP.

https://www.epa.gov/npdes/stormwater-discharges-construction-activities#ereporting

Operators must submit the NOT within 30 calendar days after any of the triggering conditions listed in Part 8.2 of the CGP.

An Operator's authorization to discharge under the CGP terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website.

Project NOTs and authorizations are maintained in Attachment C.

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7

Erosion and Sediment Controls

Stormwater controls have been designed, installed, and maintained in compliance with Part 2.1 of the 2017 CGP. If any stormwater controls must be designed (e.g., sediment basins or conveyance channels), the design documentation must be included in Attachment S.

Erosion and Sediment Controls must be implemented to address the requirements of Part 2.2 of the 2017 CGP.

This section of the SWPPP provides general guidance for compliance with the 2017 CGP. Ultimately the project Operators are responsible for making sure sufficient controls are implemented to effectively meet the conditions of the 2017 CGP.

The purpose of an erosion and sedimentation control program is to minimize the discharge of pollutants from earth-disturbing activities during the construction phase of the project. The program described in this SWPPP incorporates BMPs specified in guidelines developed by the DEP[1] and the U.S. Environmental Protection Agency[2] and complies with the requirements of the NPDES General Permit for Storm Water Discharges from Construction Activities.

Proper implementation of the erosion and sedimentation control program will:

- minimize exposed soil areas through temporary stabilization and construction sequencing;
- minimize sediment track-out from the site;
- minimize the generation of dust;
- minimize soil compaction;
- place structures to manage stormwater runoff and erosion; and
- establish permanent vegetative cover or other forms of stabilization in accordance with Part 2.2.14 of the Permit.

The Contractor will install of stormwater controls prior to the commencement of each phase of earth-disturbing activities per Part 2.1.3 of the 2017 CGP. All manufactured control measures will be installed and maintained in accordance with the manufacturer's specifications. The site Contractor will inspect all erosion and sediment controls in accordance with the applicable requirements in Part 4, document findings in accordance with Part 4, and perform corrective actions in accordance with Part 5 of the 2017 CGP.

The following sections describe the erosion and sedimentation controls that may be used on this site. **The Contractor will implement, modify, and amend the stormwater controls identified in this section as necessary.**

1 Massachusetts Department of Environmental Protection, 1993. *Massachusetts Nonpoint Source Management Manual, The Megamanual: A Guidance Document for Municipal Officials.*

2 United States Environmental Protection Agency, 1992. *Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.*

7.1 Natural Buffers or Equivalent Sediment Controls

The requirements for natural buffers are described in Part 2.2.1 and Appendix G of the 2017 CGP. This section of the SWPPP describes project compliance activities to maintain natural buffers in compliance with the 2017 CGP.

Documentation of compliance with buffer requirements is located in Attachment O.

7.1.1.1 Buffer Compliance Alternatives

Are there any surface waters within 50 feet of the project's earth disturbances?

☒ YES ☐ NO

(Note: If no, no further documentation is required under Section 7.1 of this SWPPP Manual.)

If there are surface waters within 50 feet of the project's earth disturbances, continue below:

☐ The project will provide and maintain a 50-foot undisturbed natural buffer.

Note (1): The project must show the 50-foot boundary line of the natural buffer on the Site Map.

Note (2): The project must show on the Site Map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ The project will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Note (1): The project must show the boundary line of the natural buffer on the site map.

Note (2): The project must show on the site map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore the project will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

☒ The project qualifies for one of the exceptions described in the 2017 CGP Appendix G, Part G.2. (If this box is checked, provide information on the applicable buffer exception that applies in Section 7.1.1.2.)

7.1.1.2 Buffer Exceptions

Indicate whether any of the following exceptions to the buffer requirements apply to the project site. Refer to Part 2.2.1 and Appendix G.2 of the 2017 CGP for more information.

☐ There is no discharge of stormwater to the surface water that is located 50 feet from my construction disturbances.

Note: If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

☐ No natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for this project.

Note (1): If this exception applies, no further documentation is required to achieve compliance with Part 2.2.1.

Note (2): Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, the project must comply with Part 2.2.1 and Appendix G.2.2 of the 2017 CGP.

☒ For a "linear project" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible to implement one of the Part 2.2.1.a compliance alternatives provided that additional measures described in Appendix G.2.2 of the 2017 CGP are met.

☐ The project qualifies as "small residential lot" construction and meets the compliance alternatives described in Appendix G.3 of the 2017 CGP.

☐ Buffer disturbances are authorized under a CWA Section 404 permit.

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

Note (2): This exception only applies to the limits of disturbance authorized under the Section 404 permit and does not apply to any upland portion of the construction project.

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

7.2 Perimeter Controls

Refer to Part 2.2.3 of the 2017 CGP for information on the requirements for perimeter controls. Some exceptions apply to linear projects.

7.2.1 General Perimeter Controls

Installation of perimeter controls must be completed prior to the commencement of earth-disturbance activities. This section of the SWPPP provides examples of perimeter controls that the General Contractor may use to effectively control stormwater on construction sites. The General Contractor may select and install perimeter controls at their discretion. The locations of perimeter controls should be clearly identified on the Site Map.

The General Contractor will record activities associated with perimeter controls in the following project logs:

Table 27 Recording Requirements: Perimeter Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.2.2 Specific Perimeter Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.2.2.1 Compost Filter Tube

Compost Filter Tubes consist of a biodegradable jute mesh filled with compost and placed at the limit of work held in place with stakes. They are appropriate for use as perimeter controls.

The General Contractor will prepare and install compost filter tubes in accordance with manufacturer recommendations.

Inspection and Maintenance Requirements

Inspection and maintenance activities for compost filter tubes will include:

Table 28 Maintenance Requirements: Compost Filter Tubes

Inspection Item	Condition	Maintenance Activity
Condition	Torn outer fabric	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly

7.2.2.2 Syncopated silt-fence

Staked silt-fence erosion control devices are commonly used to intercept, filter, and reduce the velocity of stormwater run-off. They are appropriate for use as perimeter controls. Syncopated silt fence includes offset section of fencing to intentionally create gaps every 200 feet adequate for small wildlife to pass.

The General Contractor will place syncopated silt-fences at the downgradient edge of disturbed areas within 450 feet of a vernal pool, they are held in place by wooden stakes.

Inspection and Maintenance Requirements

Inspection and maintenance activities for syncopated silt fences will include:

Table 29 Maintenance Requirements: Syncopated Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Rotted or torn	Replace
Continuity	Break in continuous perimeter or insufficient overlap between silt fence sections	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Silt fence not dug in to the ground surface to prevent underflow	Reset, repair and/or re-install

7.2.2.3 Turbidity Curtain

Floating turbidity curtain may be used in open water areas to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls.

The General Contractor will place turbidity curtain at the downgradient edge of disturbed areas within open water. They are held in place by weighted toes and securing ropes to the shoreline. To be used in open water conditions where water depth is adequate to allow proper extension of the turbidly curtain skirt.

Inspection and Maintenance Requirements

Inspection and maintenance activities for turbidity curtains will include:

Table 29 Maintenance Requirements: Turbidity Curtains

Inspection Item	Condition	Maintenance Activity
Condition	Torn, loss of floatation at top	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly

Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

7.2.2.4 Staked tall silt-fence

Staked tall silt-fence erosion control devices are commonly used to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls. This is an alternative perimeter control to turbidity curtain in open water.

The General Contractor will place tall silt fence at the downgradient edge of disturbed areas within open water. They are held in place by driven stakes. To be used in open water conditions where water depth is adequate to allow installation of the silt fence proper but too shallow for installation of a turbidly curtain.

Inspection and Maintenance Requirements

Inspection and maintenance activities for straw bale and silt fences will include:

Table 29 Maintenance Requirements: Straw Bale and Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Torn, fallen down stake	Replace, or reinstall
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

7.3 Sediment Track-out

Refer to Part 2.2.4 of the 2017 CGP for information on the requirements for sediment track-out controls. Some exceptions apply to linear projects.

7.3.1 General Track-out Controls

Sediment track-out controls may be structural or non-structural.

Non-structural controls including:

› Restricting vehicle use to properly designated exit points.

› Sweeping, shoveling, or vacuuming to manually remove sediment from public rights-of-way (hosing or sweeping sediment directly into a stormwater conveyance, storm drain inlet, or surface water is prohibited).

In the event that sediment is tracked-out of the site onto the surface of off-site streets, other paved areas, and sidewalks, the contractor will remove the deposited sediment by the end of the same work day. If track-out occurs on a non-work day, the contractor will remove the sediment by the end of the next work day.

The General Contractor may select and install structural sediment track-out controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with sediment track-out controls in the following project logs:

Table 30 Recording Requirements: Sediment Track-out Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.3.2 Specific Track-out Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.3.2.1 Stabilized Construction Entrance/Exit

The General Contractor will establish a stabilized construction entrance consisting of a stone pad at each access point off public roads. The construction entrance may include cross-slope to direct runoff to a protected receiving area. If track-out is observed after construction begins, the General Contractor will take additional measures to address sediment track out.

Following completion of earth-disturbing activities, the General Contractor will remove the stabilized construction entrance/exit and installing final finishing materials.

Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment track-out controls will include:

Table 31 Maintenance Requirements: Construction Entrance

Inspection Item	Condition	Maintenance Activity
Construction access routes adjacent to the disturbance area	Sediment present on vehicle travel surfaces	Sweep, shovel, or vacuum sediment from the surface, dispose of properly
Construction Entrance Condition	Muddy or sediment-laden	Add a top-dressing of stone or gravel

7.4 Stockpiled Sediment or Soil

Refer to Part 2.2.5 of the 2017 CGP for information on the requirements for stockpile controls.

The Contractor will provide cover or appropriate temporary stabilization to stockpiles that will remain inactive/unused for more than 14 days. Temporary stabilization may be performed using vegetative or non-vegetative stabilization practices. Refer to Section 7.13 for more information on stabilization practices.

7.4.1 General Stockpile Controls

In accordance with Part 2.2.5 of the 2017 CGP, the contractor must comply with the following requirements for any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil:

- Locate the piles outside of any natural buffers established under Part 2.2.1 and physically separated from other stormwater conveyances, drain inlets, and areas where stormwater flows are concentrated.
- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;
- Provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or wind;
- Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance storm drain inlet, or water of the U.S.

Record activities associated with sediment stockpile controls in the following project logs:

Table 32 Recording Requirements: Stockpile Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.4.2 Specific Stockpile Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.4.2.1 Vegetative Stabilization

Vegetative stabilization practices may include seeding exposed surfaces with a seed mix containing a blend of rapid germinating grasses that are indigenous to the appropriate region of Massachusetts. Once seeded, areas will be covered with a layer of straw mulch according to the recommendations provided by the manufacturer. Refer to Section 7.13.2.1 for more information.

7.4.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may include applying straw mulch or an erosion control blanket. Refer to Section 7.13.2.2 for more information.

7.5 Minimize Dust

Refer to Part 2.2.6 of the 2017 CGP for information on the requirements for minimizing dust.

The General Contractor will record activities associated with dust controls in the following project logs:

Table 33 Recording Requirements: Dust Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

Wetting the soil and/or spreading calcium chloride will be performed, as necessary, to minimize the movement of dust and fine-grained sediment. Fugitive dust created by movement of equipment or trucks along the project corridor, or dust generated by wind warrant application of dust control measures. If water is used for dust control, it shall be applied as a fine spray to wet the upper 0.5 inch of soil.

7.6 Minimize the Disturbance of Steep Slopes

Refer to Part 2.2.7 of the 2017 CGP for information on the requirements for controls on steep slopes.

Where a state, tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a “steep slope”, the 2017 CGP automatically adopts

that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

The General Contractor will record activities associated with steep-slope controls in the following project logs:

Table 34 Recording Requirements: Steep Slope Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.6.1 General Steep Slope Controls

During the design phase of the project, the design engineers minimized construction impacts to steep slopes to the maximum extent practicable.

Where disturbances to steep slopes are still required, the General Contractor will minimize disturbances through the implementation of erosion and sediment control practices designed for use on steep slopes.

Stabilization practices on steep slopes will occur within 14 days after grading or construction activities have temporarily or permanently ceased.

7.6.2 Specific Steep Slope Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.6.2.1 Vegetative controls

Vegetative slope stabilization practices will be used to minimize erosion on slopes of 3:1 or flatter. Temporary, rapid stabilization will be completed using annual grasses, such as annual rye. Permanent stabilization will be completed with the planting of perennial grasses or legumes.

A suitable topsoil, good seedbed preparation, soil amendments, and water will be provided for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques. Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

Refer to Section 7.13.2.1 for inspection and maintenance activities for vegetative stabilization controls.

7.6.2.2 Erosion Control Blanket

Erosion control blankets may be combined with vegetative controls to minimize erosion on slopes 3:1 or steeper. Erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. The erosion control blanket will be installed in the direction of potential flow. Edges of the blankets must be stapled with approximately 4 inches overlap where 2 or more strip widths are required.

Refer to Section 7.13.2.2 for inspection and maintenance activities for non-vegetative stabilization controls.

7.7 Topsoil

Refer to Part 2.2.8 of the 2017 CGP for information on the requirements for the preservation of topsoil.

The General Contractor will record activities associated with topsoil controls in the following project logs:

Table 35 Recording Requirements: Topsoil Controls

Action	Recorded in
Stockpiling	Construction Activities Log Grading and Stabilization Log
Disposal	Construction Activities Log Grading and Stabilization Log

Topsoil will be preserved to the maximum extent practicable. Where it is infeasible to preserve topsoil in place, it will be repurposed throughout the site or stockpiled and disposed of in accordance with local, state and federal regulations, as necessary.

7.8 Soil Compaction

Refer to Part 2.2.9 of the 2017 CGP for information on the requirements for the reduction of soil compaction.

To avoid soil compaction, the General Contractor will limit vehicle and equipment use in areas where final vegetative stabilization will occur or where infiltration practices will be installed.

Prior to seeding or planting of areas where final vegetative stabilization will occur or where infiltration practices will be installed the soil will be inspected to determine if compaction will hinder vegetative growth.

If compaction has occurred, techniques that condition soil to support vegetative growth will be implemented. Soil conditioning techniques shall be specified, as needed by the General Contractor.

7.9 Storm Drain Inlets

Refer to Part 2.2.10 of the 2017 CGP for information on the requirements for the protection of storm drain inlets.

The General Contractor will record activities associated with storm drain inlet protection in the following project logs:

Table 36 Recording Requirements: Storm drain Inlet Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.9.1 General Storm Drain Inlet Controls

Prior to any earth-disturbing activities inlet protection measures will be installed. Storm drain inlet controls are required at all storm drain inlets that carry stormwater flow from the project site to a water of the U.S., even if they are located downgradient from a construction period stormwater BMP.

7.9.2 Specific Storm Drain Inlet Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.9.2.1 Siltsack Sediment Traps

The General Contractor may choose to use Siltsack sediment traps at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where silt sacks are used, the catch basin grates will be placed over the siltsack to secure it into place.

7.9.2.2 Straw Bale and Non-Woven Filter Fabric

The General Contractor may choose to use Straw bale barriers at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where straw bales are used, a layer of non-woven filter fabric will be placed beneath the grate of each catch basin to secure it into place.

7.9.2.3 Inspection and Maintenance Requirements

Inspection and maintenance activities for storm drain inlet controls includes:

Table 37 Maintenance Requirements: Storm Drain Inlet Controls

Inspection Item	Condition	Maintenance Activity
Sediment accumulation	Sediment buildup at filter layer	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly.
Continuity	Breaks in continuous barrier	Install new or re-install original barrier structure.
Clogging	Standing water	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly. Install new or re-install restored filter layer.

7.10 Constructed Stormwater Conveyance Channels

Refer to Part 2.2.11 of the 2017 CGP for information on the requirements for the constructed stormwater conveyance channels.

The General Contractor will record activities associated with constructed stormwater conveyance channels in the following project logs:

Table 38 Recording Requirements: Conveyance Channel Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.10.1 General Conveyance Controls

The General Contractor may select and install constructed stormwater conveyance channels at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

Constructed Stormwater Conveyance Channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets. The contractor may use erosion controls and velocity dissipation devices within and along the length of any stormwater conveyance channel and at any outlet to slow runoff down and to minimize erosion. Permanent infiltration BMPs shall not be used as temporary construction sedimentation basins without prior approval of the project engineer.

7.10.2 Specific Conveyance Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.10.2.1 Diversion Channels

Diversion channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets.

Inspection and Maintenance Requirement

Diversion channels will be inspected in accordance with the inspection schedule. If breakout or erosion is observed, the diversion channel shall be reinforced or protected by an erosion control blanket.

Inspection and maintenance activities for conveyance channel controls will include:

Table 39 Maintenance Requirements: Conveyance Channels

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment Accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

7.11 Sediment Basins

Refer to Part 2.2.12 of the 2017 CGP for information on the requirements for construction period sediment basins.

If the General Contractor elects to use sediment basin controls, the General Contractor will update the Site Map to show their location on the project site.

The General Contractor will record activities associated with sediment basins in the following project logs:

Table 40 Recording Requirements: Sediment Basin Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.11.1 General Sediment Basin Controls

Constructed sediment basins may be used to collect runoff from construction areas to allow for suspended sediments to settle out of stormwater prior to discharge to points downstream. The following design criteria shall apply:

- Sediment basins must be placed outside any water of the U.S. and any natural buffer established under Part 2.2.1 of the 2017 CGP.
- Sediment basins must be designed and constructed to avoid collecting water from wetlands and waterbodies.
- Sediment basins must be designed and constructed to provide storage for either:
  - The volume of runoff generated from a 2-year, 24-hour design storm, or
  - 3,600 cubic feet per acre of contributing area.
- Outlet structures must be designed to withdraw water from the surface of the basin (not the invert), if feasible, see note below.
- Inlets and outlets must be constructed to dissipate velocity and prevent erosion.

Note: If the outlet structure must be designed to withdraw water from a place within the water column other than the surface, the basin must be designed to allow suspended soil particles to settle out of the water column prior to withdrawal.

Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment basins will include:

Table 41 Maintenance Requirements: Sediment Basins

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

7.12 Chemical Treatment

Refer to Part 2.2.13 of the 2017 CGP for information on the requirements for chemical treatment.

Record activities associated with chemical treatment in the following project logs:

Table 42 Recording Requirements: Chemical Treatment Controls

Action	Recorded in
Training	Training Log
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.12.1 General Chemical Treatment Controls

In general, chemical treatment may only be applied in the following situations:

- Chemicals may only be applied where the treated stormwater is directed to a sediment control (e.g., a sediment basin, perimeter control) prior to discharge.
- Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated.

- If chemicals will be stored on the project site, chemicals must be stored in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures.
- Use of chemicals must comply with applicable state and local requirements affecting the use of the selected treatment chemicals.
- Use of the chemicals must be in accordance with good engineering practices and specifications of the chemical provider/supplier.
  - NOTE: Departures from provider/supplier specifications must be documented in this SWPPP.
- All personnel who handle and/or use treatment chemicals must be undergo appropriate, product-specific training
- There are additional restrictions for the use of cationic chemicals. Prior authorization is required (Part 1.1.9 of the 2017 CG) and authorization is conditioned on compliance with additional measures to ensure that the use of the chemicals will not cause and exceedance of the water quality standards.

7.12.2 Specific Chemical Treatment Controls

The General Contractor will list all treatment chemicals in the table below. If any of the chemicals are cationic, the General Contractor will indicate whether the authorization has been obtained from the Regional Office (EPA). Include correspondence and indicate whether a record of the authorization is included in this SWPPP in Attachment P.

Table 43 List of Treatment Chemicals and Dosage/Use to be used on Site

Chemical	Dosage and Application Details	Cationic Authorization in Attachment P
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

Table 44 Departures from Provider/Supplier Specifications

Chemical	Dosage and Application Notes

7.13 Site Stabilization

Refer to Part 2.2.14 of the 2017 CGP for information on the requirements for site stabilization.

The General Contractor will record activities associated with site stabilization in the following project logs:

Table 45 Recording Requirements: Site Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.13.1 General Site Stabilization Controls

The contractor will implement and maintain stabilization measures that minimize erosion from exposed portions of the site in accordance with Parts 2.2.14a and 2.2.14b of the 2017 CGP.

- Timeline: Initiate stabilization measures immediately in any areas of exposed soil where construction activities have ceased and will not resume for 14 or more calendar days. The EPA may propose an accelerated schedule if site conditions warrant additional protection measures. Some exceptions for unforeseen circumstances apply, refer to Parts 2.2.14(a)(iii) of the 2017 CGP. Document any departures from the standard timeline in the construction activities log.
- Timeline: for discharges to sediment- or nutrient-impaired waters or to a water that is identified by Massachusetts or the EPA as a Tier 2, Tier 2.5, or Tier 3 water, complete stabilization as soon as practicable but no later than 7 calendar days after stabilization has been initiated.

Site stabilization practices may be temporary or permanent, vegetative or non-vegetative.

7.13.2 Specific Site Stabilization Controls

This section of the SWPPP describes site stabilization practices that the contractor may use during the course of the work.

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.13.2.1 Vegetative Stabilization

Temporary, rapid vegetative stabilization will be completed using annual grasses, such as annual rye.

Permanent stabilization will be completed with the planting of perennial grasses or legumes. Permanent vegetative stabilization will provide uniform perennial cover with a density of 70 percent or more of the natural background cover.

The Contractor will provide a suitable topsoil, good seedbed preparation, soil amendments, and water for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques.

Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

7.13.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may consist of the application of mulch or erosion control blankets.

Mulch Application

If application of mulch is necessary, mulch will be applied at a rate of 90 pounds per 1,000 square feet. The mulch will be anchored with a tacking coat (non tar) applied by a hydroseeder. Steeper slopes (greater than 10 percent) will be covered with a bonded fiber matrix.

Erosion Control Blanket

Erosion control blankets will consist of bio-degradable materials such as mats of woven jute and/or coconut fiber.

Erosion control blankets may be combined with vegetative controls. For permanent stabilization applications, erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch-deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. Edges of the blankets must be stapled with approximately 4 inches overlap where two or more strip widths are required.

Erosion control blankets are applied to the soil surface as a continuous sheet and are used to protect disturbed areas from erosion and to enhance seed growth, typically where moving water is likely to wash out new vegetative plantings and mulches are ineffective.

Inspection and Maintenance Requirements

Inspection and maintenance activities for site stabilization will include:

Table 46 Maintenance Requirements: Site Stabilization

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
SWPPP		Maintain the SWPPP throughout the construction period in accordance with the terms of the 2017 CGP.

7.14 Dewatering Practices

Refer to Part 2.4 of the 2017 CGP for information on the requirements for dewatering.

7.14.1 General Dewatering Practices

If project activities require dewatering, the General Contractor will implement dewatering practices to comply with the following requirements. The General Contractor:

› Will treat dewatering discharges with controls to minimize discharges of pollutants

- Will not discharge visible floating solids or foam
- Will use an oil-water separator or suitable filtration device that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials.
- Will discharge water to vegetated, upland areas of the site to promote infiltration.
- Will comply with velocity dissipation requirements of Part 2.2.11
- Will handle backwash water by either hauling it away or returning it to the beginning of the treatment process
- Will replace and clean the filter media used in the dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

The General Contractor may select and install dewatering controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with dewatering controls in the following project logs:

Table 47 Recording Requirements: Dewatering Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.14.2 Specific Dewatering Practices

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.14.2.1 Dewatering Filter Bag

The dewatering filter bag consists of a non-woven geotextile filter fabric placed at the outlet of one (maximum diameter) six-inch discharge hose. If the dewatering filter bag will be used as a construction period dewatering control device, any bags will be placed on relatively flat terrain, free of brush and stumps. If rough ground conditions make punctures likely, a geotextile fabric will be placed beneath the filter bag. Unattended filter bags will be encircled with a straw bale and silt fence barrier.

Inspection and Maintenance Requirements

All dewatering structures will be placed as far away from wetland resources as practicable. Filter bags used during construction will be bundled and removed for proper disposal. Filter media shall be cleaned and replaced in all dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

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8

Pollution Prevention

8.1 Potential Sources of Pollution

The following list identifies pollutant generating activities that are likely to occur on the project site in accordance with Part 7.2.3.g of the 2017 CGP.

Table 48 Pollutant Generating Activities and Pollutants Located on Site

Pollutant-generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)	Location on Site (or reference SWPPP site map where this is shown)
Paving Operations	Asphalt constituents	
Vehicle Maintenance	Petroleum-based products	
Cleared & Graded Areas	Soil erosion	
Portable Toilets	Sewage	
Fuel Tanks	Fuel oil, gasoline, other fuels	
Storage Areas	Soil erosion, fuel oil, gasoline, asphalt, concrete, vehicle fluids, paints, solvents, adhesives	

8.2 Fueling and Maintenance of Equipment or Vehicles

When fueling or maintaining equipment or vehicles, the contractor will adhere to the following requirements specified in Part 2.3.1 of the 2017 CGP:

- Provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities.
- If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;
- Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;
- Use drip pans and absorbents under or around leaky vehicles;
- Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;
- Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge. **Do not clean surfaces by hosing the area down.**
- Whenever possible refueling shall take place at least 100 feet away from any vegetated wetland or open water areas.

8.3 Washing of Equipment and Vehicles

Washing equipment and/or vehicles at the Project site will be prohibited.,

8.4 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

When storing, handling, and disposing of construction products, materials, and wastes, the contractor will adhere to the following good-housekeeping practices specified in part 2.3.3 of the 2017 CGP.

- An effort will be made to store only enough product required to do the job;
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers, and (if possible) under a roof or other enclosure;
- Products will be kept in their original containers with the original manufacturer's label;
- Substances will not be mixed with one another unless recommended by the manufacturer;
- Whenever possible, all of a product will be used before disposing of the container;
- Manufacturer's recommendations for proper use and disposal will be followed; and
- The site superintendent will inspect the storage area daily to ensure proper use and disposal of materials on-site.

The following practices will reduce the risks associated with hazardous materials (e.g., petroleum products, solvents):

- A copy of all Material Safety Data Sheets (MSDS) for materials or products used during construction will be kept in the office trailer;
- Products will be kept in original containers unless they are not re-sealable;
- Original labels and material safety data (MSD sheets) will be retained; they contain important product information; and
- If surplus product must be disposed, manufacturer's or local- and state-recommended methods for proper disposal will be followed.

8.4.1 Building Products

In accordance with CGP Part 2.3.3.b, all containers will be tightly sealed and covered with plastic sheeting or a temporary roof when not required for use. Excess materials will be properly disposed according to manufacturer's instructions or state and local regulations and shall not be discharged to the storm sewer system. No storage will occur within 100 feet of a wetland or waterway.

8.4.2 Pesticides, Herbicides, Insecticides

Pesticides, herbicides, and insecticides will not be used at the Project Site.

8.4.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

In accordance with CGP Part 2.3.3.c products stored on site will be contained in water-tight containers with either

- a cover to minimize the exposure of the container to precipitation and to stormwater or

- or a similarly effective means detained to minimize the discharge of pollutants from these areas such as secondary containment

All on-site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. Spills will be cleaned up immediately, using dry clean-up methods where possible. The source of the spill will be eliminated to prevent continuation of an on-going discharge.

No vehicle maintenance or handling of petroleum products will occur within 100 feet of a wetland or waterway.

Any asphalt substances used on-site will be applied according to manufacturer's recommendations. No petroleum-based or asphalt substances will be stored within 100 feet of a wetland or waterway.

8.4.4 Hazardous or Toxic Waste

In accordance with CGP Part 2.3.3.d, the contractor will:

- Separate hazardous or toxic waste from construction and domestic waste;
- Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;
- Store all containers that will be stored outside within appropriately sized secondary containment (e.g., spill berms, decks, spill containment pallets) to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., storing chemicals in covered area or having a spill kit available on site); and
- Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.
- Hosing will not be utilized as a method to clean surfaces or spills.
- Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

All hazardous waste materials (e.g., petroleum products, solvents) will be disposed in the manner specified by local and state regulation, or by the manufacturer. Site personnel will be instructed in these practices, and the site construction supervisor will be responsible for seeing that these procedures are followed.

8.4.5 Construction and Domestic Waste

In accordance with CGP Part 2.3.3.e, the contractor will provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes. Waste containers will be covered to prevent precipitation from entering the container and becoming a source of pollution. Alternatively, the waste container will be kept in secondary containment to prevent discharges of contaminated stormwater.

Daily loose trash removal will prevent litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for stormwater discharges. All loose trash will be placed in appropriate storage containers and will be disposed of properly.

The General Contractor will identify the areas to be used for storing dumpsters, compactors or other raw or waste materials on the Site Map.

8.4.6 Large Structures Built or Renovated prior to January 1980

In accordance with CGP Part 2.3.3.f, the contractor will implement controls to minimize the exposure of PCB-containing building materials including paint, caulk, and pre-1980s fluorescent light fixtures to precipitation and stormwater and ensure that disposal of such materials is performed in compliance with applicable state, federal and local laws.

8.4.7 Sanitary Waste

Portable toilets will be placed away from waters of the U.S., stormwater inlets and/or conveyances and will be secured in place so that they will tip or be knocked over. All sanitary waste will be collected from the portable units by a licensed contractor as required and disposed in compliance with state and local regulations.

8.5 Washing of Applicators and Containers used for Paint, Concrete or Other Materials

In compliance with the prohibition in CGP Parts 2.3.4, the contractor must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, the contractor must:

- Direct all wash water into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;
- Handle washout or cleanout wastes as follows:
  - Do not dump liquid wastes in storm sewers;
  - Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3; and
  - Remove and dispose of hardened concrete waste consistent with handling of other construction wastes in Part 2.3.3.
- Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

8.6 Pavement Sweeping

Pavement sweeping of local roads may be performed daily or as needed, when track-out has occurred. The sweeping program will remove sediments and contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been

demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater.

8.7 Spill Prevention and Response

The following practices will be followed for spill control, notification, and cleanup:

The General Contractor is responsible for the daily operations and is also responsible for coordinating spill prevention and cleanup coordination. The General Contractor will designate at least three other site personnel to receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the on-site office trailer.

- Spills of toxic or hazardous material in excess of reportable quantities, as established in the under 40 CFR 110, 40 CFR 117, or 40 CFR 302, will be reported to the following agencies as soon as the General Contractor has knowledge of the release:

Massachusetts Department of Environmental Protection Division of Hazardous Waste	(617) 292-5851 or (978) 661-7679
National Response Center	(800) 424-8802

- All spills will be cleaned up immediately after discovery;
- The spill area will be kept well ventilated and personnel will wear protective clothing to prevent injury from contact with a hazardous substance; and
- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be informed of the procedures and the location of the information and cleanup supplies;
- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but will not be limited to the emergency response equipment listed herein;

A comprehensive Spill Prevention Control and Countermeasure (SPCC) plan will be developed and implemented by the General Contractor and other Operators. At a minimum the SPCC, will discuss:

- Spill prevention equipment;
- Spill prevention supplies provided on-site; and
- Spill prevention training to be provided by the Owner and/or Tenant to designated employees.

8.7.1 Initial Notification

In the event of a spill the notify the 24-hour Emergency Contact (Section 0) immediately.

The 24-hour Emergency Contact or their chosen delegate will immediately notify emergency response services and notify the local boards and commissions at the first possible opportunity:

- Fire Department (immediately)
- the Police Department, (immediately)
- the Board of Health (at first opportunity)
- and the Conservation Commission (at first opportunity)

8.7.2 Further Notification

Based on the assessment from the Fire Chief, additional notification to a cleanup contractor may be made. The Massachusetts Department of Environmental Protection (DEP) and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

8.7.3 Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following pages.

8.7.4 Reporting

A copy of the Spill Report Template is included in Attachment N.

Table 49 Emergency Notification Phone Numbers

1A	24-hour Contact		T:	(###) ###-###
1B	Alternate Contact	DCR – XXXXX	T:	(XXX) XXX-XXX
2	Fire and Police			911
3	Cleanup Contractor	Name/Address	T:	(###) ###-###
4	MassDEP		T:	(800) 340-1133
5A	National Response Center		T:	(800) 424-8802
5B	USEPA		T: T:	(800) 424-8802 (800) 424-8802
6A	Sudbury Board of Health		T:	(978) 440-5479
6B	Marlborough Board of Health		T:	(508) 460-3751
6C	Hudson Board of Health		T:	(978) 562-2020
6D	Stow Board of Health		T:	(978) 897-4592
7A	Sudbury Conservation Commission	Coordinator Lori Capone	T:	(978) 440-5470
7B	Hudson Conservation Commission	Agent/Planner Pam Helinek	T:	(978) 568-9641
7C	Stow Conservation Commission	Coordinator Kathy Sferra	T:	(978) 897-8615

Post this list of emergency contact numbers in the main construction/facility office in a location that is readily accessible to all employees.

Emergency Response Equipment

The following is an example of an equipment and materials list that must be prepared by the Owner and Tenant. Equipment and Supplies on this list shall be maintained at all times and stored in a secure area for long-term emergency response need.

Table 50 Emergency Response Equipment

Supply	Quantity	Supplier
Sorbent Pillows (Pigs)	2	http://www.newpig.com
Sorbent Boom/Sock	25 feet	Item # KIT276 — mobile container with two pigs, 26 feet of sock
Sorbent Pads	50	50 pads, and five pounds of absorbent (or equivalent)
Lite-Dri® Absorbent	5 pounds	http://www.forestry-suppliers.com
Shovel	1	Item # 33934 — Shovel (or equivalent)
Pry Bar	1	Item # 43210 — Manhole cover pick (or equivalent)
Goggles	1 pair	Item # 23334 — Goggles (or equivalent)
Heavy Gloves	1 pair	Item # 90926 — Gloves (or equivalent)

9

Compliance with Other Regulations

9.1 Endangered Species

Appendix D of the 2017 CGP describes eligibility requirements with regard to the protection of threatened and endangered species and designated critical habitat.

9.1.1 Eligibility Criterion

Under which criterion listed in Appendix D of the 2017 CGP are you eligible for coverage under this permit?

☐ A ☐ B ☐ C ☐ D ☒ E

- **Criterion A.** No federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of the 2017 CGP.
- **Criterion B.** The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's

notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.

- **Criterion C.** Federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.
- **Criterion D.** Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- **Criterion E.** Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under Section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:
  - a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or
  - written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally designated habitat.
- You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- **Criterion F.** Your construction activities are authorized through the issuance of a permit under Section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- For reference purposes, the eligibility criteria listed in Appendix D of the 2017 CGP are as follows:

9.1.2 Supporting Documentation

Provide documentation for the applicable eligibility criterion you select in Appendix D of the 2017 CGP, as follows:

For criterion A, indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the 2017 CGP). Check the applicable source of information you relied upon:

- ☐ Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service.
- ☐ Publicly available species list.
- ☒ Other source: IPaC

For criterion B, provide the Tracking Number from the other operator's notification of permit authorization:

Provide a brief summary of the basis used by the other operator for selecting criterion A, B, C, D, E, or F:

For criterion C, provide the following information:

- Any federally listed species and/or designated habitat located in your "action area"
- The distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site with you NOI.

For criterion D, E, or F, attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation or coordination activities.

Supporting documentation related to project compliance with the Endangered Species Act is provided in Attachment F.

9.2 Historic Preservation

Appendix E of the 2017 CGP describes eligibility requirements with regard to the protection of historic properties, including tribal lands.

The Operator responsible for finalizing this SWPPP must:

- Fill out the answers to the questions below for
  - Appendix E, Step 2
  - Appendix E, Step 3
  - Appendix E, Step 4

› Insert copies of any correspondance with the Massachusetts Historical Commission into Attachment G.

9.2.1 Appendix E, Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

☐ Dike

☐ Berm

☐ Catch Basin

☐ Pond (Bioretention Basin)

☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)

☒ Culvert

☐ Other type of ground-disturbing stormwater control: Subsurface infiltration structures

(Note: If you will not be installing any ground-disturbing stormwater controls, no further documentation is required for this section of the SWPPP template.)

9.2.2 Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties?

☐ YES ☒ NO

If yes, no further documentation is required for this section of the SWPPP template. If no, proceed to Appendix E, Step 3.

9.2.3 Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties?

☐ YES ☒ NO

If yes, provide documentation of the basis for your determination. If no, proceed to Appendix E, Step 4.

9.2.4 Appendix E, Step 4

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other tribal representative (whichever applies) respond to you within 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties?

☒ YES ☐ NO

If no, no further documentation is required for this section of the SWPPP template.

If yes, describe the nature of their response:

☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☒ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☐ Other: *Response from MHC indicating determination that the proposed project will have no adverse effect on significant historic or archaeological properties is included in Attachment G.*

Supporting documentation related to project compliance with the Historic Preservation is provided in Attachment G.

9.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

☐ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow

☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

All stormwater structures meeting the definition of Underground Injection Wells shall be registered in accordance with DEP regulations 310 CMR 27.00. Copies of correspondence with the MassDEP or the EPA Regional Office should be included in the SWPPP.

Supporting documentation related to project compliance with the Safe Drinking Water Act is provided in Attachment Q.

Attachment A
2017 Construction General Permit

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Attachment B
Certifications

Refer to Section 1 of this SWPPP Manual for more information.

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Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

Name of person/position: _____

Company: _____

Address: _____

City, State, zip: _____

Phone: _____

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

OWNER	**CONTRACTOR**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

SUBCONTRACTOR (Operator status)	**SUBCONTRACTOR (Operator status)**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Subcontractor Certification (Non-Operator Status)

Stormwater Pollution Prevention Plan

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

"I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP."

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

Signature: _____

Title: _____

Date: _____

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Attachment C
EPA NOIs and EPA NOTs

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Attachment D
Project Plans

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Attachment E
Site Map

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Site Map Requirements (Part 7.2.4 of the 2017 CGP):

1. Boundaries of the area of disturbance
2. 50-foot buffer around the area of disturbance
3. Identify areas of steep slope
4. Locations of stockpiles
5. Locations of construction vehicle access
6. All stormwater discharge points from the area of disturbance (to waterbodies AND to storm drain inlets)
7. All surface waters that the area of disturbance discharges to
8. The location and nature of all erosion and sediment controls
   - Perimeter controls
   - Storm drain inlet controls
   - A note that indicates that the contractor will provide information for any other types of controls required.
9. Location of proposed, post-construction impervious surfaces and structures
10. Location of on-site and off-site construction support activity areas covered by this permit
11. Locations of all waters of the US within and one mile downstream of the site. Also identify if any are listed as impaired, or are identified as Tier 2, Tier 2.5, or Tier 3.
12. Areas of federally listed critical habitat within the site and/or at discharge locations
13. Type and extent of pre-construction cover on the site
14. Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities.
15. Locations of all potential pollutant generating activities.

Locations where any chemicals will be used and stored.

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Attachment F
Endangered Species Act

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Attachment G
Historic Preservation

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Attachment H

Training Log and Attendance Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Training Log

This log provides a table of contents for the training forms. Insert training attendance lists into the field binder.

Date of Inspection	Notes:	Initials

Attach additional sheets as necessary

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Stormwater Pollution Prevention Training Attendance Form

Date/Time of Training:	
Instructor (name/title):	
Training Location:	
Training Duration:	

Topics addressed in this training

- ☐ Sediment and Erosion Controls
- ☐ Stabilization Controls
- ☐ Pollution Prevention Measures
- ☐ Emergency Procedures
- ☐ Inspections/Corrective Actions
- ☐ Other: _____

Print Name of Attendee:	**Initials**

Attach additional sheets as necessary

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Attachment I
SWPPP Amendment Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Amendment Log

This log provides a table of contents for the amendments to the SWPPP. Insert supplemental materials (if applicable) into the field binder and note their location.

No.	Date of Amendment	Summarize the changes to the SWPPP and indicate any supplemental materials that have been added	Authorization[3] (Name and Signature)	All Other Operators Notified of the Change
1				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐

Attach additional sheets as necessary.

3 Amendments must be authorized by an individual who meets the requirements of Appendix I, Part 1.11b of the 2017 CGP.

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Attachment J
Construction Activities Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Record the following activities in the Construction Activities log.

Type of Action:	Information to include in the Construction Activity Log
Site-mobilization activities commence	› Record the date
Install construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is installed. Record the date each control becomes operational.
Earth-disturbance activities commence	› Record the date, the location on the site, and the type of activity. Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. Record the activity in the Grading and Stabilization Log.
Earth-disturbance activities cease	› Record the date, the location on the site, and the type of activity. › Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. › Record the activity in the Grading and Stabilization Log.
Site stabilization measures commence (P/T)	› Record the date, the location on the site, and the type of site stabilization measure commenced. Indicate if the stabilization measure is temporary or permanent. Record the activity in the Grading and Stabilization Log.
Site stabilization measures cease (P/T)	› Record the date, the location on the site, and the type of site stabilization measure that has ceased. Record the date that the stabilization measure becomes operational.Record the activity in the Grading and Stabilization Log.
Removal of construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is removed.
Removal of construction equipment and vehicles	› Record the date that all equipment and vehicles vacate the site.
Cessation of pollutant-generating activities	› Record the date that all pollution generating activities on the site cease.
Construction activities cease	› Record the date.

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Attachment K
Grading and Stabilization Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Date	Type of Action	Notes:	Supplemental Log Entry Created[4]
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Attach additional sheets as necessary.

4 If the activity type is an earth disturbance activity or a site stabilization measure, then also record the activity in the separate Grading and Stabilization Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Grading and Stabilization Log

Date Grading Activity Initiated	Date Grading Activity Ceased	Description of Grading Activity	Date Stabilization Measure Initiated	Date Stabilization Achieved	P/T	Description of Stabilization Measure

P = Permanent, T = Temporary

Attach additional sheets as necessary

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Attachment L
Inspection Log and Template Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Inspection Log

This log provides a table of contents for the completed inspection log forms. Insert completed inspection reports into the field binder.

Date of Inspection	Notes:	Initials

Attach additional sheets as necessary

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Site Inspection Form

Complete this inspection report within 24 hours of completing the site inspection.

Date/Time of Inspection: _____ **Weather Conditions:** _____

Recent Precipitation Event: _____

(Record daily rainfall total if 0.25 inches has fallen within the previous 24 hours)

Construction Activities Underway: _____

Inspector: _____

Status of Existing BMPs

Refer to Part 4.5 of the 2017 CGP to identify areas that must be inspected.
Refer to Part 4.6 for the requirements for inspections.

	Status – Cleaning or Repair Needed?		
Erosion Control Measure	**Yes**	**No**	**Comments/Notes**
Silt Fence	☐	☐	
Compost Filter Tubes	☐	☐	
Construction Period Swales	☐	☐	
Construction Period Basins	☐	☐	
Erosion Control Blankets	☐	☐	
Construction Entrances	☐	☐	
	☐	☐	

N/A – Not applicable

Attach additional sheets if necessary

In the event of a spill refer to the **Spill Response Procedure** and contact appropriate agencies. Refer to Section 8.7 of the SWPPP Manual for Spill Prevention Plan and Response Procedures.

General Comments (Attach figures to show locations of concern):

	No	Yes
Are additional Erosion Control Measures needed? If yes, describe:	☐	☐
Are sediment/pollution discharges from the site present? If yes, describe:	☐	☐

Describe any corrective action required at this time:

Notes:

Attach additional sheets with notes, comments, illustrations and issues as needed. Use site plan to identify locations of work areas or issues noted above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorization: _____ Date: _____

Authorization must be made by personnel identified in the Delegation of Authority and authorized to complete this task.

Attachment M
Corrective Action Log and Template Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Log

This log provides a table of contents for the completed corrective action log forms. Insert completed corrective action reports into the field binder.

Date of Action	Notes:	Initials

Attach additional sheets as necessary.

Intentionally blank

MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Form

	BMP/Activity	Date Observed	Date Corrected	Corrective Action Needed and Notes
1				
2				
3				
4				

Corrective Action

Describe how any incidents of non-compliance have been addressed:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Authorization: _____ Date: _____

Authorization must be made by personnel identified in the Delegation of Authority and authorized to complete this task.

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Attachment N
Spill Log and Template Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Hazardous Waste & Oil Spill Report

Date: _____ Time: _____ AM / PM

Exact location (Transformer #): _____

Type of equipment: _____ Make: _____ Size: _____

S / N: _____ Weather Conditions: _____

On or near water? ☐ Yes ☐ No If yes, name of body of water: _____

Type of chemical / oil spilled: _____

Amount of chemical / oil spilled: _____

Cause of spill: _____

Measures taken to contain or clean up spill: _____

Amount of chemical / oil recovered: _____ Method: _____

Material collected as a result of cleanup:

_____ drums containing _____

_____ drums containing _____

_____ drums containing _____

Location and method of debris disposal: _____

Name and address of any person, firm, or corporation suffering charges: _____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring: _____

Spill reported by General Office by: _____ Time: _____ AM / PM

Spill reported to DEP / National Response Center by: _____

DEP Date: _____ Time: _____ AM / PM Inspector: _____

NRC Date: _____ Time: _____ AM / PM Inspector: _____

Additional comments: _____

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Attachment O
Buffer Documentation

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Attachment P
Chemical Information

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Attachment Q
UIC Well Correspondence

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Attachment R
Local Orders of Condition

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Attachment S
Design Calculations for Stormwater Erosion Controls

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Appendix F – Standard 9 Supporting Information (Operation and Maintenance Manual)

MassCentral Rail Trail (MCRT) – Wayside Section
Stormwater Management System
Operation and Maintenance Plan (O&M)
and
Long Term Pollution Prevention Plan (LTPPP)

June 2020

This Stormwater Management System Operation and Maintenance Plan provides for the inspection and maintenance of structural Best Management Practices (BMPs) and for measures to prevent pollution associated with the Stormwater Management System on the MassCentral Rail Trail Wayside Section (in Hudson, Stow and Sudbury).

This document has been prepared in accordance with the requirements of the Stormwater Regulations included in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.05(6)(k)).

Figure of stormwater management features is attached.

Responsible Party

Department of Conservation and Recreation (DCR) office will be responsible for the maintenance of the shared-use facility and associated stormwater management features, in accordance with DCR standards. The facility will be maintained by DCR maintenance staff from:

DCR's Maintenance Facility
Hopkinton Complex
164 Cedar St,
Hopkinton MA 01748
Jeff Cate
Field Operation Team Leader
(508) 435-4303

Maintenance Measures

The stormwater management system covered by this Operation and Maintenance Plan consists of the following components:

- Swales – Dry with check dams
- Areas of increased infiltration
- Drainage structures
  Hudson
  - Sta. 119+25 LT – Catch basin (Str 3)
  - Sta. 119+25 RT – Headwall (Str 4)
  - Sta. 119+25 – 18" RCP - New crossing drainage pipe
  - Sta. 119+45 - 6' by 6' Conc. Box - Cattle Crossing

- Sta. 126+70 RT – Catch basin (Str 5)
- Sta. 126+70 LT – Headwall (Str 6)
- Sta. 126+70 – 24" DIP – New crossing drainage pipe
- Sta. 182+55 RT – Catch basin (Str 8)

Sudbury

- Sta. 368+84 - 2' by 2.5' Stone Box (Drainage Structure 129A)
- Sta. 410+25 - 2' by 2' Stone Box (Drainage Structure 127J)
- Sta. 517+96 - 1' by 2' Stone Box (Drainage Structure 127I)
- Sta. 521+64 - 1.5' by 3' Stone Box (Drainage Structure 127H)
- Sta. 527+30 - 2' by 2' Stone Box (Drainage Structure 127G)
- Sta. 530+80 RT – Catch basin (Str 9)
- Sta. 533+46 RT – Flared End Section (Str 10)
- Sta. 713+63 LT – Headwall (Str 12)
- Sta. 713+63 RT – Headwall (Str 13)
- Sta. 577+31 - 1' by 2' Stone Box (Drainage Structure 127D)
- Sta. 704+56 - 24" Cast Iron (Drainage Pipe 127B)
- Sta. 713+63 - 24" Cast Iron (Drainage Pipe 127A)
- Sta. 738+77 - 18" Cast Iron (Drainage Pipe 126D)
- Sta. 752+17 - 12" Corrugated Metal (Drainage Pipe 126A)

DCR Operations to maintain swales and the drainage pipes.

DCR Engineering to maintain listed catch basins, flared end section, headwalls, drainage pipes. Engineering can assist with blocked culverts if major blockage or structural concern.

Maintenance of these components will be conducted biannually at a minimum in accordance with DCR standard maintenance practices, as noted in the attached Operation and Maintenance table summarizing the pertinent inspection and maintenance activities.

DCR Operations will also inspect and clear culverts conveying streams as needed. Inspection will identify any deterioration of headwalls, culverts, bridge structures, abutments and erosion. Any identified issues will be immediately brought to the attention of DCR Engineering.

- Stream culverts/bridges
  Hudson
  - Sta. 107+92 – 2' by 3' stone box (Culvert 132A)
  - Sta. 148+81 – Fort Meadow Brook Bridge (Bridge 132)
  - Sta. 206+10 – 24" Clay Culvert (Culvert 129C)

  Sudbury
  - Sta. 400+31 – Hop Brook Bridge (Bridge 132)
  - Sta. 539+40 – Twin 36" Corrugated Metal – Dudley Brook (Culverts 127F)
  - Sta. 560+82 - 3'x2' Concrete Box (Culvert 127E)
  - Sta. 593+18 - 2'x2' Stone Box (Culvert 127C)
  - Sta. 747+39 - 2.5'x2' Stone Box (Culvert 126B)
  - Sta. 764+60 - 12" Reinforced Concrete (Culvert 125B)
  - Sta. 725+31 – Hop Brook Bridge (Bridge 130)

If inspection indicates the need for major repairs of structural components, the inspector should contact the DCR maintenance supervisor to initiate procedures to effect repairs in accordance with DCR standard construction practices.

Practices for Long Term Pollution Prevention

In general, long term pollution prevention and related maintenance activities will be conducted consistent with DCR's NPDES Stormwater MS4 Permit(s), and the measures outlined in the Stormwater Management Plans (SWMP). Information about the DCR permit and the SWMP are available at the following website:

http://www.mass.gov/eea/agencies/dcr/conservation/stormwater-mgmnt/

For the facilities covered by this Operation and Maintenance Plan, long term pollution prevention includes the following measures:

Litter Pick-up
DCR will conduct litter pick-up from the stormwater management facilities in conjunction with routine maintenance activities.

Routine Inspection and Maintenance of Stormwater BMPs
DCR will conduct inspection and maintenance of the stormwater management practices in accordance with the guidelines discussed above.

Spill Prevention and Response
DCR will implement its standard response procedures in the unlikely event of releases of significant materials such as fuels, oils, or chemical materials onto the ground or other areas that could reasonably be expected to discharge to surface or groundwater.

- Reportable quantities will immediately be reported to the applicable Federal, State, and local agencies as required by law. The applicable DCR office should also be notified.
- Applicable containment and cleanup procedures will be performed immediately. Impacted material collected during the response must be removed promptly and disposed of in accordance with Federal, State, and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the amount of the release and the ability of the responsible party to perform the required response.
- Reportable quantities of chemical, fuels, or oils are established under the Massachusetts Contingency Plan (MCP) and enforced through MassDEP.

Maintenance of Landscaped Areas
DCR will mow and/or weed whack the shoulders adjacent to the rail trail bi-weekly or as needed between Memorial Day and Columbus Day. Outside of the 2-foot shoulders, DCR will mow the 5-foot herbaceous area over the duct bank no more than once annually. Outside of the 19-foot maintained area (paved rail trail, 2-foot shoulders on either side and 5-foot area over the duct bank) woody vegetation will be allowed to naturally revegetate and DCR will not implement vegetation management unless it poses a risk to MCRT users. The limit of work, outside of the

19-foot maintained area, will be restored with loam and seed to provide a vegetated surface, but will not be maintained. The vegetated shoulders/slopes outside the maintained area will help to disperse and infiltrate disconnected drainage although no stormwater management benefit is identified. The swales and areas of increased infiltration outside of the 19-foot area will be inspected and mowed as needed or biannually at a minimum to maintain proper water quality treatment function.

Eversource inspection vehicles will use the paved MCRT to access the transmission line facility approximately once every three years, or as needed for maintenance of the transmission line.

Within the Priority Habitat areas, the vegetation will not be trimmed lower than 10 inches along the shoulders or over the duct bank.

Fertilizers will not be used.

If DCR finds it necessary to use chemical treatment for invasive species vegetation control, this work will be done in compliance with MDAR regulations at 333 CMR 11.00, which will limit impacts to sensitive areas such as groundwater and drinking water wells. The MCRT is part of the DCR Yearly Operational Plan regarding vegetation maintenance along their bike path and recreational corridors.

Erosion Control

Portions of the MCRT are on elevated former railroad embankment with steep side slopes. Review the MCRT alignment for any evidence of erosion on slopes, within swales, at check dams or at inlets and outlets of drainage pipes or stream culverts during the biannual inspection of the corridor and the stormwater BMPs. If erosion is observed, note on the inspection form. Include the location and extent of erosion (width and length), which side of the path or pipe/culvert, if the erosion is toward or away from the path, and if any resource areas are at risk of impact. Include photographs is possible. Note location on the attached figure as accurately as possible. Notify the Field Operations Team Leader.

Any observed erosion will be repaired, and reseeded or otherwise stabilized as needed to prevent continued erosion. Notify the local conservation commission if erosion impacts a resource area or requires reconstruction within a resource area or within 100 feet of a resource area. A regulatory filing may be required.

Snow and Ice Management

There are no plans for snow and ice removal, nor de-icing (i.e., sanding, salting) of the bike path surface during winter months.

Prohibition of Illicit Discharges

The DEP Stormwater Management Standards prohibit illicit discharges to the storm water management system. Illicit discharges are discharges that do not entirely consist of stormwater, except for certain specified non-stormwater discharges.

Discharges from the following activities are not considered illicit discharges:

- firefighting
- water line flushing
- landscape irrigation
- uncontaminated groundwater
- potable water sources
- water used to clean residential buildings without detergents
- foundation drains
- footing drains
- individual resident car washing
- flows from riparian habitats and wetlands
- dechlorinated water from swimming pools
- water used for street washing
- air conditioning condensation

There are no known or proposed illicit connections associated with this project. If a potential illicit discharge to the facilities covered by this plan is detected (e.g., dry weather flows at any pipe outlet, evidence of contamination of surface water discharge by non-stormwater sources), the DCR shall be notified for assistance in determining the nature and source of the discharge, and for resolution through DCR's IDDE program.

Public Access

The MCRT Wayside Section is a public access facility. The facility is typically open dawn to dusk every day. Members of the Sudbury Planning Board or Conservation Commission are free to access the rail trail at any time the facility is open. Periodically the facility may be closed for maintenance construction (repairs, resurfacing, etc.) and for the safety of the public, access to the rail trail will be restricted.

Easements

The DCR holds an easement for construction and operation of the MCRT over the Massachusetts Department of Transportation – MBTA rail corridor. Within the rail corridor there are the following existing easements or license agreements by others:

- NSTAR Electric Company d/b/a Eversource Energy ("Eversource") to construct and operate the transmission powerline;
- Sudbury Lumber for access and storage of materials (off Union Avenue);
- Tennessee Gas Transmission Company to install and operate an underground natural gas transmission pipeline (east of Marlborough/Hudson town line);
- Town of Sudbury (east of Route 20 – building license);
- Douglas P. Webb lease for South Sudbury Station (off Union Avenue)

Appendix: Best Management Practices: Operation & Maintenance Measures Schedule

Best Management Practice*	Sweep	Mow	Inspect	Clean	Repair
Swales*	NA	Mow swales as needed or biannually (minimum)	Biannually at a minimum	As needed	As needed
Check Dams	NA	String trim as needed (Not to be mowed) or biannually (minimum)	After every significant rainfall event	As needed	As needed
Areas of increased infiltration*	NA	Mow as needed or biannually (minimum)	Biannually at a minimum	As needed	As needed
Drainage structures	NA	NA	Biannually at a minimum	As needed	As needed

*If mowing occurs between April 1 and November 1, then areas within mapped habitat for state-listed turtles will require "turtle sweeps" by trained individuals ahead of the mower and mower deck heights shall be set lower than 10 inches above the ground or string trimmers can be used.

Best Management Practices – Inspection and Maintenance/ Evaluation Checklist

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed	Date of Cleaning/Repair	Performed by
Swales	Biannually at a minimum			• Accumulated sand and sediment • Accumulated debris • Erosion of swale Mow biannually (minimum)	☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no**		
Check Dams	After significant rain fall events			• Accumulated sand and sediment • Accumulated debris • Erosion of surface • Cut grass biannually (minimum) (string trimmer)	☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no**		
Areas of increased infiltration	Biannually at a minimum			• Accumulated sand and sediment • Mow as needed or biannually (minimum)	☐**yes** ☐**no**		
Drainage structures, drainage pipes and stream culverts	Biannually at a minimum			• Accumulated sand and sediment • Floatables • Inlets free of debris	☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no**		
Erosion (Provide location and detailed description in notes below. Include photographs)	Biannually at a minimum			• Slope erosion observed • Erosion within a swale or at check dam • Erosion/Siltation onto the path surface • Erosion/Siltation away from the path surface • Erosion at a drainage pipe or stream culvert	☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no**		

Notes on Stormwater / Drainage / Erosion Issues:

_____

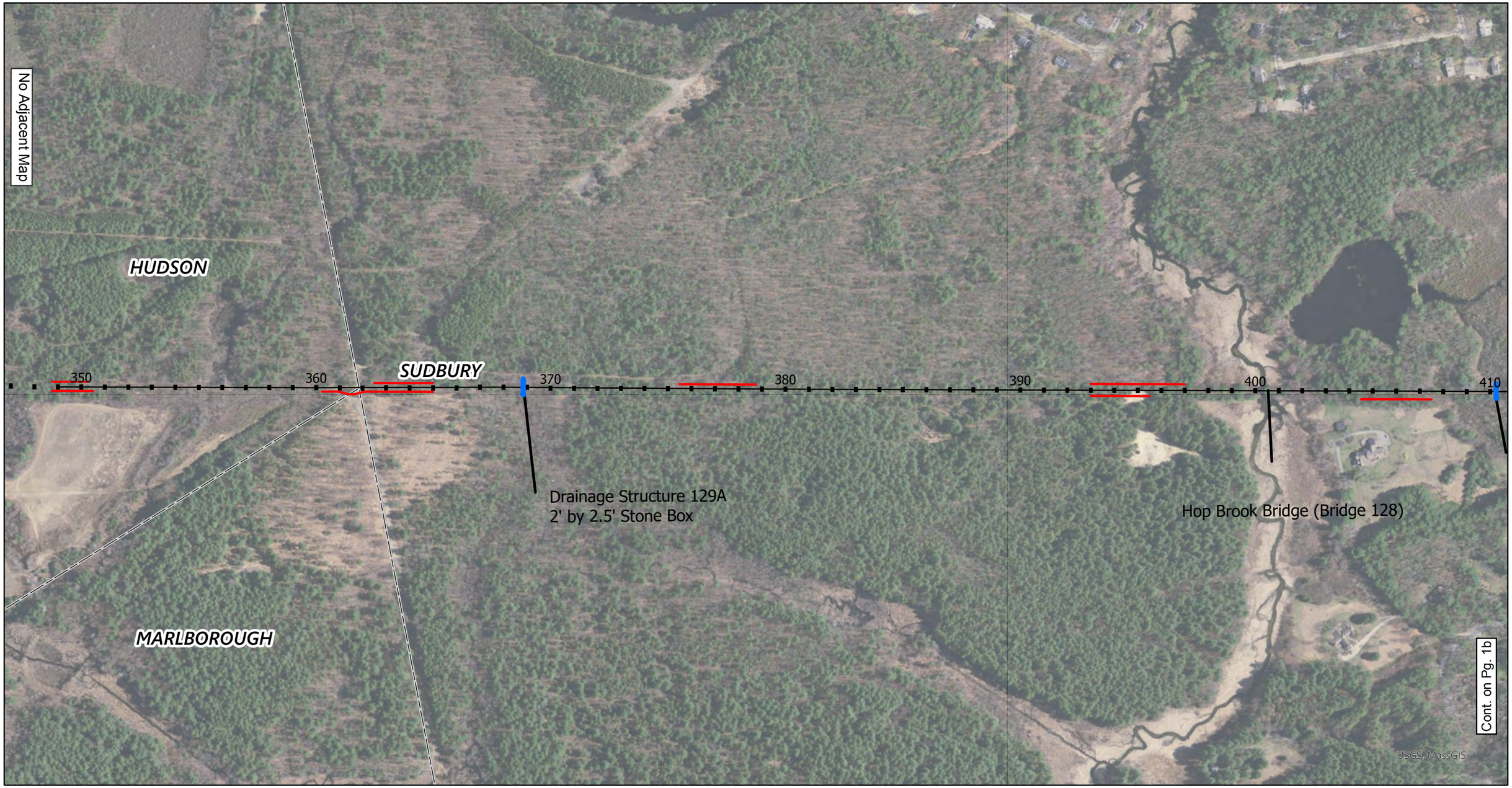
_____

_____

_____

Stormwater Control Manager _____

Figure of Stormwater BMPs Attached



Project Stationing

Massachusetts Municipalities

Culverts

Area of Increased Infiltration or Swale

N

0 400 800 Feet

EVERSOURCE ENERGY

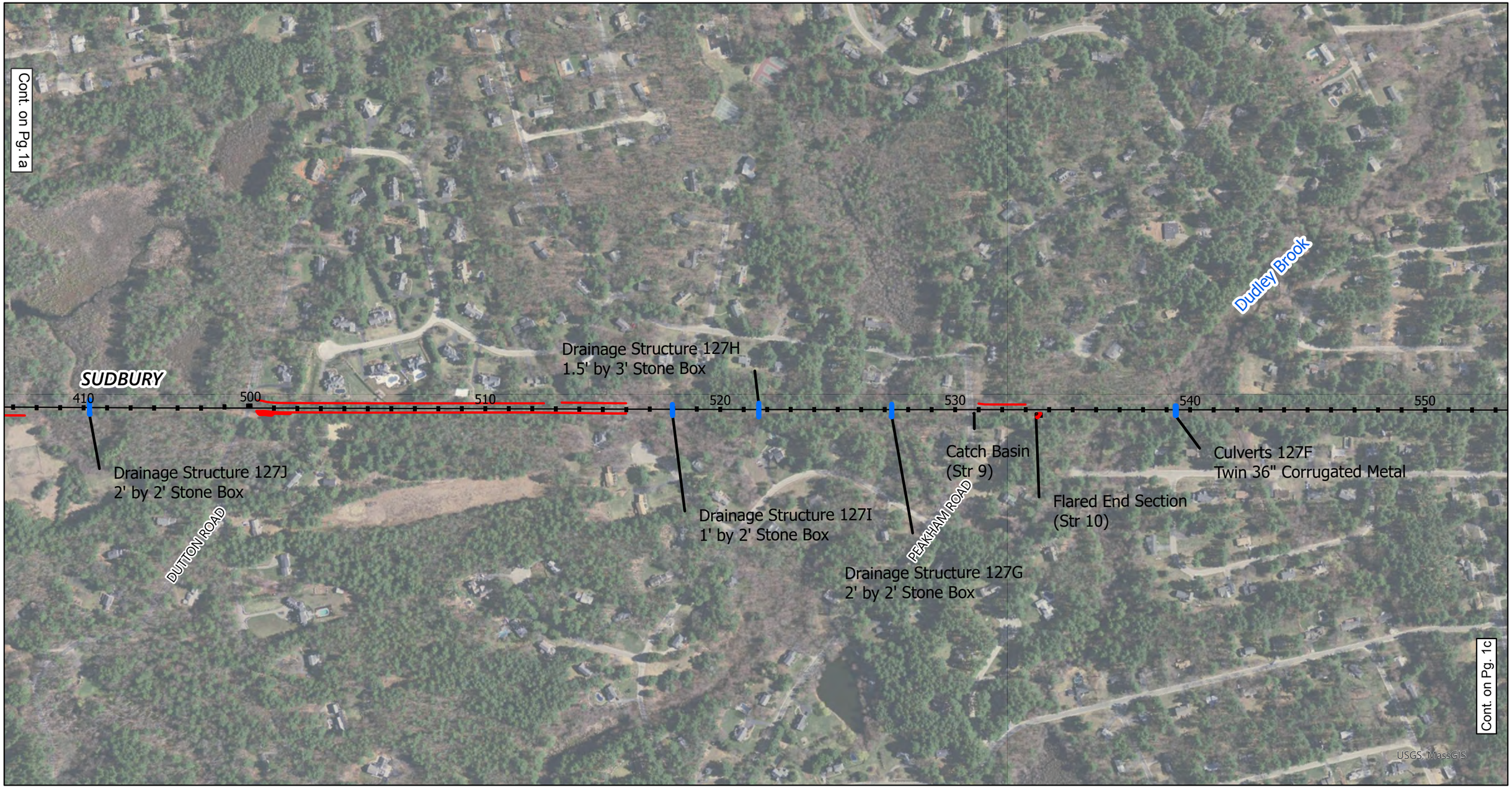
Sudbury-Hudson Transmission Reliability Project

Figure 1a : Maintenance Features

Date: 10/16/2020

Source:
MassGIS, VHB

vhb



Project Stationing

Massachusetts Municipalities

Culverts

Area of Increased Infiltration or Swale

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 1b : Maintenance Features

Date: 10/16/2020

Source:
MassGIS, VHB

vhb

Project Stationing

Massachusetts Municipalities

Culverts

Area of Increased Infiltration or Swale

N

0 400 800 Feet

EVERSOURCE ENERGY

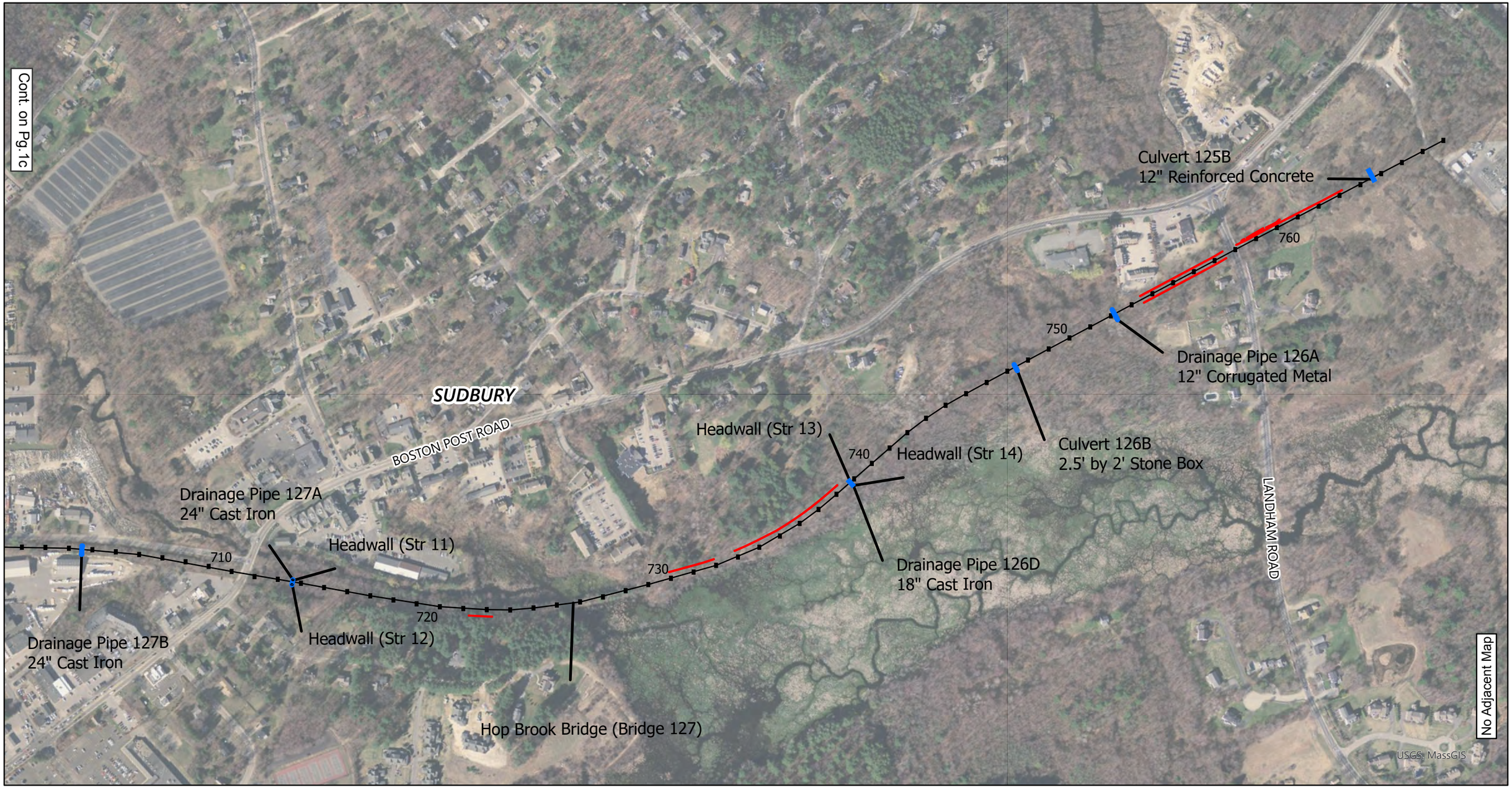
Sudbury-Hudson Transmission Reliability Project

Figure 1c : Maintenance Features

Date: 10/16/2020

Source:
MassGIS, VHB

vhb



Project Stationing

Massachusetts Municipalities

Culverts

Area of Increased Infiltration or Swale

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 1d : Maintenance Features

Date: 10/16/2020

Source:
MassGIS, VHB

vhb

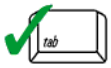
Appendix G – DEP Checklist for Stormwater Report

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

Kenneth Staffier Digitally signed by Kenneth Staffier Date: 2020.07.14 12:03:37-04'00'

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☒ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☒ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☒ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☒ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☒ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☒ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☒ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☒ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☒ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☒ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☒ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.