SECTION 12 STORMWATER MANAGEMENT

A comprehensive Stormwater Management Plan (Exhibit 12-1) has been prepared for the Project that utilizes stormwater BMPs to mimic existing stormwater runoff characteristics and provide both water quantity control and water quality treatment. The Stormwater Management Plan documents compliance with applicable standards set forth in the MDEP Stormwater Management Rules to prevent and control the release of pollutants to waterbodies, wetlands, and groundwater, and reduce impacts associated with increase and changes in flow. Applicable MDEP standards for the Project include Basic, General, Phosphorus, Flooding, Easements and Deed Restrictions, Redistribution of Stormwater Discharge, and Discharge to Wetlands Standards.

Exhibits

- Exhibit 12-1 Stormwater Management Plan

EXHIBIT 12-1 STORMWATER MANAGEMENT PLAN

Stormwater Management Plan

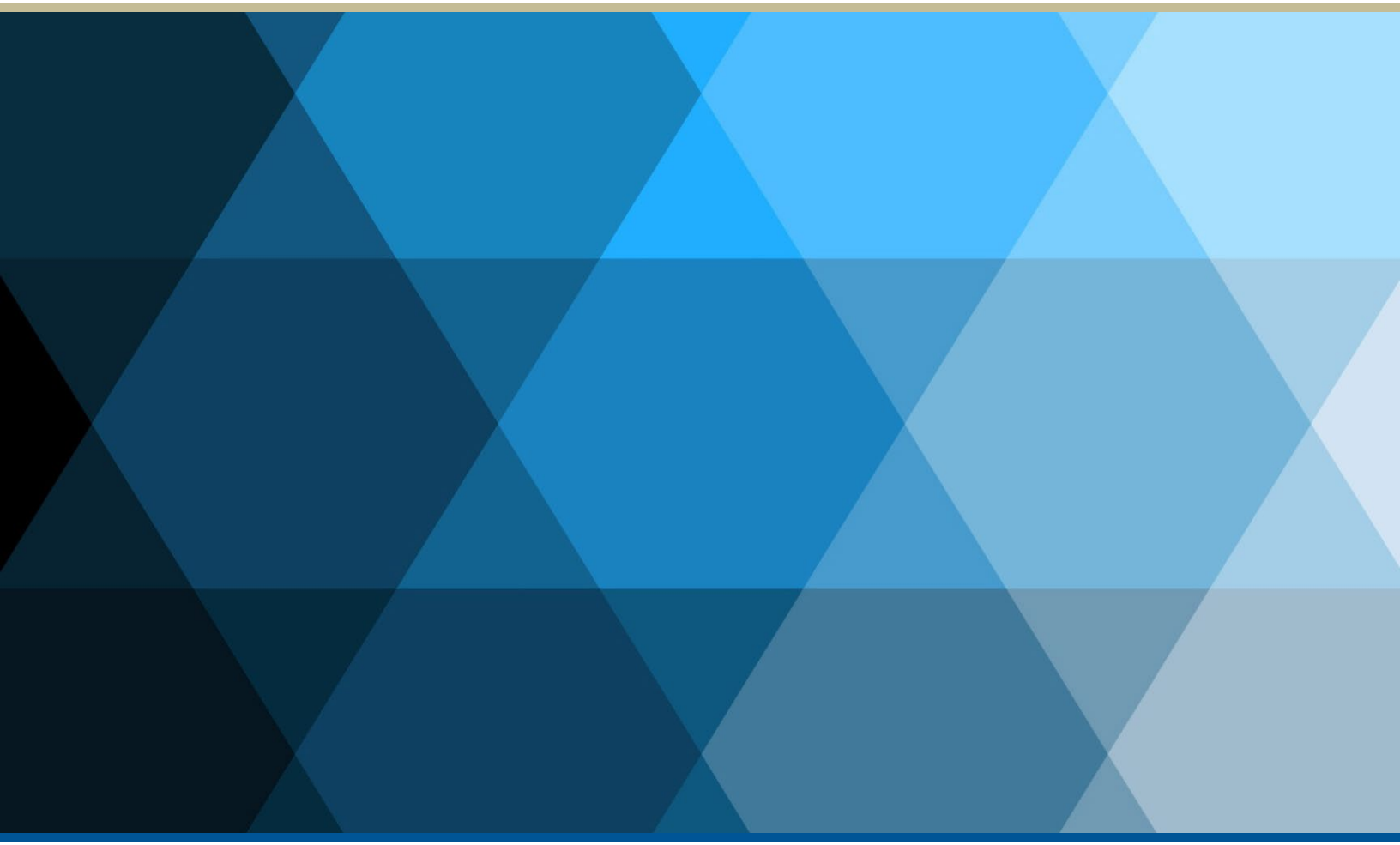
Hartland Solar Project
Somerset Country, Maine

Prepared for:

Hartland Solar Facility, LLC
500 Union Street, Suite 625
Seattle, WA 98101

Prepared by:

Tetra Tech, Inc.
451 Presumpscot Street
Portland, ME 04103



TETRA TECH

December 2023

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LIST OF APPENDICES

1.0 INTRODUCTION

This Stormwater Management Plan has been prepared for Hartland Solar Facility, LLC in accordance with the Maine Department of Environmental Protection (MDEP) Stormwater Management Rules. The purpose of the Stormwater Management Plan is to document compliance with applicable standards that will minimize the impacts of stormwater runoff on wetlands, waterbodies, or adjacent downgradient land. Applicable MDEP standards for the Project include Basic, General, Phosphorus, Flooding, Easements and Deed Restrictions, Redistribution of Stormwater Discharges, and Discharge to Wetlands Standards.

1.1 PROJECT NARRATIVE

1.1.1 Development Location

The Hartland Solar Project (Project) is a utility scale solar energy facility located in the Town of Hartland, Somerset County, Maine with a rated capacity of approximately 140 megawatts alternating current (MWac). The Project will be located on approximately 1,130 acres of land within an 8,000-acre private ownership area that is currently managed as a working forest south of Route 151 along the privately-owned Burrill Woods Road. Power from the Project will be transmitted to a new Central Maine Power (CMP) interconnection substation located east of the Project, adjacent to the existing CMP 115kV transmission line (Section 82, Athens – Hartland), via the construction of an approximately 2.5-mile long 115kV generation lead (Genlead) transmission line. A USGS Topographic Map is provided in **Appendix A**.

1.1.2 Surface Water on or Abutting the Site

Surface waters within, and abutting, the Project area includes freshwater wetlands, unnamed streams, the East Branch Black Stream crossing Burrill Hill Road, and the Black Stream near Munn Flat Road.

1.1.3 Downstream Ponds and Lakes

Great Moose Lake, which is listed by MDEP as a lake most at risk from new development, is located northeast of the Project. Approximately 2,328 acres of the Development Parcel, including 517 acres of the Project area, is located within the Great Moose Lake watershed. Stormwater runoff from the remainder of the Project area flows to the Black Stream via the East Branch Black Stream or unnamed tributaries. Both the Great Moose Lake and the Black Stream are located within the Kennebec River watershed.

1.1.4 General Topography

Topography within the Project area is relatively flat (0% to 8% slopes) and consists of elevations between 330 and 480 feet, referenced to the North American Vertical Datum of 1988 (NAVD 88).

1.1.5 Flooding

The Project area does not contain any mapped flood zones or special flood hazard areas and there are no known areas, buildings, or facilities that historically flood or will be affected by stormwater runoff. The closest Federal Emergency Management Agency (FEMA) mapped floodplain to the Project is associated with the East Branch Black Stream in the Town of Canaan.

1.1.6 Alterations To Natural Drainage Ways

No changes to natural drainage way alignments or geometry are proposed as part of the Project.

1.1.7 Alterations To Land Cover

The Project area primarily consists of mixed (coniferous and deciduous) forest managed for commercial timber production that will largely be converted to meadow. A substantial road network, primarily consisting of gravel logging roads, currently exists within the Project area. Approximately 8.7 miles of this road network will be used in its existing condition to provide construction and maintenance access to the Project. Additionally, approximately 5.5 miles of new 12-foot-wide secondary access roads will be constructed to provide access to the primary project area, and 0.4 miles of new 20-foot-wide secondary access road will be constructed to provide access to the new CMP interconnection substation. Other major project components include ground-mounted solar tracking systems that allow solar panels to follow the path of the sun throughout the day to maximize electricity production, equipment pads, 34.5kV collection systems, perimeter fencing, collection substation, 115kV Genlead transmission line, CMP interconnection substation, and a maintenance building.

The total developed area for the Project is approximately 13.98 acres, consisting of impervious area and unrevegetated area. Impervious areas include 9.68 acres of secondary access road, 0.21 acres of tracking systems posts, 0.28 acres of equipment pads, 0.05 acres of perimeter fencing posts, 0.52 acres associated with the collection substation, <0.01 acres of Genlead transmission line posts, 0.37 acres associated with the CMP interconnection substation, and 0.66 acres associated with the maintenance building. Unrevegetated areas include 1.12 acres associated with the collection substation and 1.09 acres associated with the CMP interconnection substation.

1.1.8 Modeling Assumptions

The following modeling assumptions were used to determine runoff curve numbers, times of concentration, and travel times for each pre-development and post-development subwatershed:

- Pre-development cover types include gravel roads, surface waters, and managed woodland.
- Post-development cover types include gravel roads, surface waters, managed woodland, brush (clearing only), meadow (clearing and grubbing), substations, roofs, and other impervious areas.
- Runoff curve numbers for the substations are based on a MDEP letter to CMP dated June 5, 2008, providing clarification on how substations and switchyards designed by CMP can meet MDEP Stormwater Management Rules and the Site Location of Development Law.
- Runoff curve numbers for all other areas are based on Cover Type tables contained in Soil Conservation Service Technical Release No. 55 (TR-55), Urban Hydrology for Small Watersheds.
- Soil types and hydrologic soil groups are based on a project-specific Soil Map Report prepared by Broadwater Environmental, LLC dated October 2022 and supplemented with the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey for Somerset County, Maine, Southern Part.
- Ground covers are based on a project-specific Topographic Verification Survey prepared by Sewall dated July 2023 and supplemented with the most recent publicly available aerial imagery.
- Maximum sheet flow lengths for times of concentration are based on the McCuen-Spiess equation.

1.1.9 Water Quantity Control

An initial pre-development and post-development runoff curve number comparison and a comprehensive runoff analysis were utilized to evaluate the potential change in peak runoff flow rates for the Project and the need for control methods. The table below summarizes the runoff curve number comparison.

Table 1 – Comparison of Runoff Curve Numbers

Design Point	Pre-Development	Post-Development
DP-1	79	79
DP-2	79	79
DP-3	79	78
DP-4	79	78
DP-5	78	77
DP-6	79	79
DP-7	78	78

The initial comparison of runoff curve numbers shows that peak runoff flow rates for the Project will not increase, and site-specific control methods are not required. A comprehensive runoff analysis performed for the Project is detailed later in the Stormwater Management Plan.

1.1.10 Water Quality Treatment

A combination of meadow buffers, including roadside, ditch turnout, and level lip spreaders, are being used to provide water quality treatment for the new secondary access roads, imperious portions of the collection and CMP interconnection substations, and maintenance building. Gravel portions of the collection and CMP interconnection substations are considered self-treating based on compliance with requirements described in the MDEP letter to CMP dated June 5, 2008. Posts and equipment pads located within the perimeter fencing are also considered self-treating given the area will be maintained as meadows and will not be mowed more than twice a year.

1.1.11 Offset Credits

The Project does not require the use of total suspended solids offset credits or phosphorus offset credits.

1.1.12 Compensation Fees

The Project does not require the use of a compensation fee to meet the phosphorus allocation.

1.1.13 Development Impacts

The Project complies with the MDEP Basic, General, Phosphorus, Flooding, Easements and Deed Restrictions, Redistribution of Stormwater Discharges, and Discharge to Wetlands Standards and will not impact receiving waters, adjacent properties, downstream properties, or downstream control structures.

1.2 MAPS

A United States Geological Survey (USGS) Topographic Map and Natural Resources Conservation Service (NRCS) Soils Map showing the Project area boundary are provided in **Appendix A**.

1.3 DRAINAGE PLANS

Scaled site plans for pre-development and post-development conditions showing applicable information are provided in the Appendices. Pre-Development and Post-Development Watershed Maps showing subwatershed boundaries, analysis points, and flow lines are provided in **Appendix A**. Permit Drawings showing pre-development conditions, post-development improvements, and typical construction details are provided in **Appendix B**. A Soil Map Report containing soil group boundaries is provided in **Appendix C**.

1.4 RUNOFF ANALYSIS

The Study Area for the Project is approximately 4,062 acres, which was divided into seven (7) design points and eight (8) drainage subcatchment areas representing where stormwater runoff discharges from the Development Parcel. Under existing conditions, the Study Area primarily consists of mixed (coniferous and deciduous) forest managed for commercial timber production and the associated network of gravel logging roads. In the proposed condition, a portion of the Study Area will be converted to a utility scale solar project consisting of secondary access roads, ground-mounted solar tracking systems, equipment pads, collection systems, perimeter fencing, substations, transmission line, and a maintenance building.

Pre-development and post-development stormwater analyses for the Study Area, including curve number computations, time of concentration calculations, travel time calculations, and peak discharge calculations for the 2-, 10-, and 25-year, 24-hour storm events, are provided in **Appendix D**.

1.4.1 Method Of Calculations

The hydrologic model was created and calculated with HydroCAD®, Version 10.10 software, developed by HydroCAD® Software Solutions LLC, to analyze the hydrology of the Project area. Hydraulic calculations were performed utilizing the Rational Method to determine contributing flows, and the Manning's Equation to determine pipe flows.

1.4.2 Sources Of Data

The following sources of data were used for the hydrologic and hydraulic calculations.

- Soil Conservation Service Technical Release No. 20 (TR-20)
- Soil Conservation Service Technical Release No. 55 (TR-55)
- NOAA National Weather Service Precipitation Frequency Data Services (PFDS)
- Project-Specific Soil Map Report prepared by Broadwater Engineering dated October 2022
- NRCS Soil Survey of Somerset County, Maine, Southern Part

2.0 BASIC STANDARDS

The following sections demonstrate that erosion and sedimentation control, inspection and maintenance, and housekeeping standards specified in the MDEP Stormwater Management Rules are met by the Project.

2.1 EROSION AND SEDIMENTATION CONTROL PLAN

The Project is generally located on gentle slopes consisting of soils that have a slight potential for erosion according to the United States Department of Agriculture (USDA) limiting the potential for erosion and release of sediment. Location Plans, Erosion and Sedimentation Control Notes, and Construction and Installation Details for the Project's temporary and permanent controls are included in the Permit Drawings provided in **Appendix B**.

2.1.1 Erosion and Sedimentation Control Measures

Erosion and sedimentation control measures shown and described on the Permit Drawings represent the minimum measures to be employed to minimize the potential for erosion and control sediment runoff. Control measures shall be installed prior to site excavation or disturbance and shall be kept operational and maintained continuously throughout the period of land disturbance until permanent controls are operational. Additional control measures shall be implemented, as necessary, to meet field conditions during all phases of construction.

Temporary erosion and sedimentation control measures employed shall comply with the Maine Erosion and Sedimentation Control Best Management Practices (2016) and the Maine Erosion and Sediment Control Practices Field Guide for Contractors (2014). Permanent erosion control measures shall be installed in accordance with the Maine Stormwater Management Design Manual (2016).

Erosion and sedimentation control measure details and specifications shall be included in the Issue for Construction package provided to the construction contractor prior to site excavation or disturbance.

2.1.2 Third-Party Inspections

A third-party inspector shall be retained to monitor compliance during construction and immediately after final stabilization in accordance with the MDEP Third-Party Inspection Program.

2.2 INSPECTION AND MAINTENANCE PLAN

Inspection and maintenance requirements for the Project during construction and post-construction are described in the Inspection and Maintenance Plan provided in **Appendix E**.

2.3 HOUSEKEEPING

Housekeeping requirements for the Project are described in the Inspection and Maintenance Plan provided in **Appendix E**.

3.0 GENERAL STANDARDS

The total disturbed area for the Project is approximately 1,002 acres. The total developed area for the Project is approximately 13.98 acres, consisting of impervious area and unrevegetated area. Impervious areas include 9.68 acres of secondary access road, 0.21 acres of tracking systems posts, 0.28 acres of equipment pads, 0.05 acres of perimeter fencing posts, 0.52 acres associated with the collection substation, <0.01 acres of Genlead transmission line posts, 0.37 acres associated with the CMP interconnection substation, and 0.66 acres associated with the maintenance building. Unrevegetated areas include 1.12 acres associated with the collection substation and 1.09 acres associated with the CMP interconnection substation. Refer to Section 1.1 (Project Narrative) for a description of site layout, watershed hydrology, and surface waters and Section 1.3 (Drainage Plans) for references to required drainage plans and details.

The following sections demonstrate that general standards specified in the MDEP Stormwater Management Rules are met by the Project.

3.1 NONLINEAR PORTION OF THE PROJECT

Nonlinear portions of the Project are designed to provide treatment of no less than 95% of the impervious area and no less than 80% of the developed area. Nonlinear portions of the Project include the tracking system posts, equipment pads, perimeter fencing post, collection substation, CMP interconnection substation, and maintenance building.

A 240-foot-long stone-bermed level lip spreader that discharges to a 150-foot-long meadow buffer provides water quality treatment for impervious areas associated with the collection substation and maintenance building. A 200-foot-long stone-bermed level lip spreader that discharges to a 150-foot-long meadow buffer provides water quality treatment for impervious areas associated with the CMP interconnection substation. Stone-bermed level lip spreaders with meadow buffers are sized in accordance with MDEP Stormwater Management Rules and the Stormwater Management Design Manual.

Gravel portions of the collection and CMP interconnection substations are considered self-treating based on compliance with requirements described in the MDEP letter to CMP dated June 5, 2008. Posts and equipment pads within the perimeter fencing are also considered self-treating given the area will be maintained as meadows and will not be mowed more than twice a year.

The Project achieves treatment for 100% of nonlinear impervious and developed areas. Water quality treatment, level spreader sizing, and buffer sizing calculations are provided in **Appendix F**.

3.2 LINEAR PORTION OF THE PROJECT

Linear portions of the Project are designed to provide treatment of no less than 75% of the impervious area and no less than 50% of the developed area, as allowed under the linear portion of a project exemption. Linear portions of the Project include new 12-foot-wide secondary access roads providing access to the primary project area, the Genlead transmission line corridor, and a new 20-foot-wide secondary access road providing access to the new CMP interconnection substation.

A combination of meadow buffers, including roadside and ditch turnouts, are being used to provide water quality treatment for the new 12-foot-wide secondary access roads. Vegetated conveyance ditches with check dams are proposed along the upgradient side of secondary access roads, as appropriate, to ensure

only access road runoff is directed to these buffers. Additionally, a 200-foot-long stone-bermed level lip spreader that discharges to a 150-foot-long meadow buffer provides water quality treatment for a portion of the new 20-foot-wide secondary access road to the new CMP interconnection substation. Roadside buffers, ditch turnout buffers, and stone-bermed level lip spreaders with meadow buffers are sized in accordance with MDEP Stormwater Management Rules and the Stormwater Management Design Manual.

The Project achieves treatment for approximately 80% of linear impervious and developed areas. Water quality treatment, level spreader sizing, and buffer sizing calculations are provided in **Appendix F**.

4.0 PHOSPHORUS STANDARD

Approximately 2,328 acres of the Development Parcel is located within the Great Moose Lake watershed, a lake most at risk from new development. Great Moose Lake – Hartland per-acre phosphorus allocation data was obtained from MDEP to calculate the Project Phosphorus Budget (PPB) and the Post-Project Phosphorus Export (Post-PPE) for this portion of the Development Parcel. The PPB is 18.46 lbs P/year and the Post-PPE is 10.64 lbs P/year despite no treatment credit being allocated for impervious area runoff directed through meadow buffers.

The Project has a Post-PPE that is less than the PPB, therefore meeting its phosphorus budget. Per-acre phosphorus allocation data and calculation worksheets are provided in **Appendix G**.

5.0 FLOODING STANDARD

The Project includes a combination of meadow buffers, including roadside, ditch turnouts, and stone-bermed level lip spreaders, vegetated conveyance ditches with check dams, culverts, and end-of-line plunge pools with level lips sized in accordance with MDEP Stormwater Management Rules and the Stormwater Management Design Manual. These measures are designed to reduce flow rates, minimize concentrated flows, and reestablish sheet flow throughout the Project area such that post-development peak runoff discharge rates do not exceed pre-development peak runoff discharge rates for the 2-, 10-, and 25-year, 24-hour storm events.

Pre-development and post-development stormwater analyses for the Study Area, including curve number computations, time of concentration calculations, travel time calculations, and peak runoff discharge rate calculations are provided in **Appendix D**. The table below summarizes pre-development and post-development peak runoff discharge rates determined in the hydrologic/hydraulic analyses performed for the Study Area.

Table 2 – Comparison of Peak Runoff Discharge Rates

Design Point	Peak Runoff (cubic feet per second)								
	2-Year Storm			10-Year Storm			25-Year Storm		
	Exist	Prop	Δ	Exist	Prop	Δ	Exist	Prop	Δ
DP-1	36.27	34.64	(1.63)	70.95	68.06	(2.89)	94.41	90.53	(3.88)
DP-2	69.43	69.43	0	136.10	136.10	0	181.00	181.00	0
DP-3	154.43	136.69	(17.74)	302.11	269.18	(32.93)	402.65	359.66	(42.99)
DP-4	64.32	54.52	(9.80)	126.97	109.09	(17.88)	169.48	146.38	(23.10)
DP-5	19.31	18.56	(0.75)	38.68	38.12	(0.56)	51.83	51.63	(0.20)
DP-6	105.39	101.39	(4.00)	207.32	199.85	(7.47)	276.38	266.86	(9.52)
DP-7	238.04	217.75	(20.29)	473.94	441.98	(31.96)	635.23	597.36	(37.87)

6.0 EASEMENTS AND DEED RESTRICTION STANDARD

The Project includes meadow buffers used for stormwater control that will be protected from alteration through deed restrictions. Representative deed restriction language is provided in **Appendix H**.

7.0 REDISTRIBUTION OF STORMWATER DISCHARGES STANDARD

The Project converts concentrated flows discharged from culverts and vegetated conveyance ditches with check dams to sheet flow using plunge pool with level lips to prevent erosion of the downstream area. Plunge pool level lip calculations are provided in **Appendix I**.

8.0 DISCHARGE TO WETLANDS STANDARD

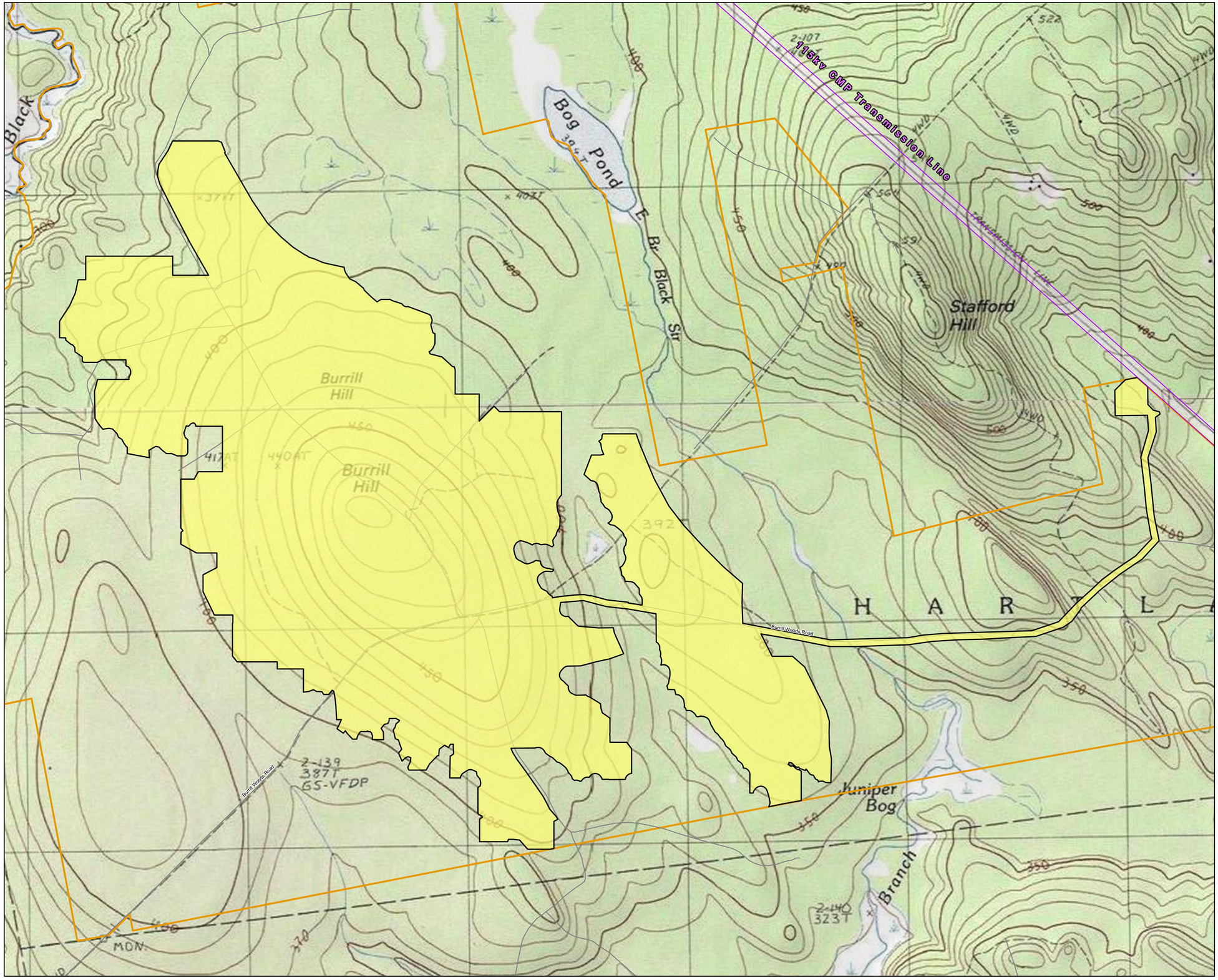
The Project will not significantly alter the flow of stormwater to wetlands given there is no increase in peak runoff discharge rates during the 2-year, 24-hour storm event and sheet flow is reestablished prior to discharge with level spreaders, plunge pools with level lips, and meadow buffers. Pre-development and post-development peak runoff discharge rate calculations for the 2-year, 24-hour storm event are provided in **Appendix D**.

9.0 CONCLUSION

The Project complies with the MDEP Basic, General, Phosphorus, Flooding, Easements and Deed Restrictions, Redistribution of Stormwater Discharges, and Discharge to Wetlands Standards and will not impact receiving waters, adjacent properties, downstream properties, or downstream control structures.

Appendix A

Maps



Legend

- Project Area
- Road
- Surveyed Property Boundary
- Existing Transmission Line

N

0 500 1,000 2,000 Feet

USGS Topographic Map

Prepared For: Hartland Solar Facility, LLC

Prepared By: TETRA TECH

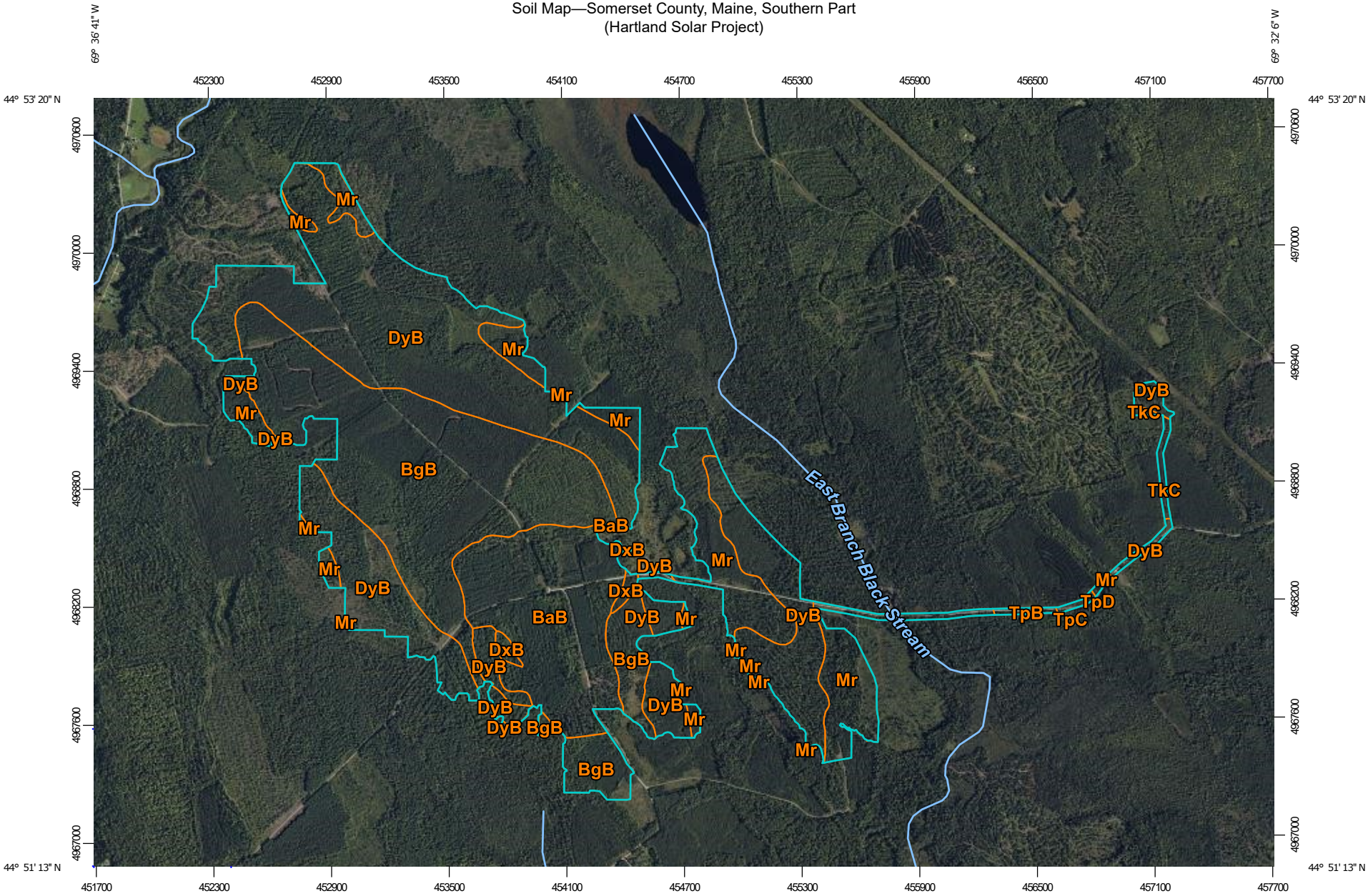
Date: 11/2023

Source: Esri, et al. 2022

Coordinate System: North American Datum, 1983 Maine State Plane West, Feet

Not for Construction

Soil Map—Somerset County, Maine, Southern Part
(Hartland Solar Project)



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 1:20,000.

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: Somerset County, Maine, Southern Part
Survey Area Data: Version 23, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 11, 2021—Oct 29, 2021

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
BaB	Bangor silt loam, 3 to 8 percent slopes	157.3	13.7%
BgB	Bangor very stony silt loam, 3 to 8 percent slopes	354.3	30.8%
DxB	Dixmont silt loam, 0 to 8 percent slopes	6.1	0.5%
DyB	Dixmont very stony silt loam, 0 to 8 percent slopes	468.4	40.8%
Mr	Monarda silt loam, 0 to 3 percent slopes, very stony	152.8	13.3%
TkC	Thorndike silt loam, 3 to 15 percent slopes, very rocky	5.2	0.5%
TpB	Thorndike-Plaisted association, 0 to 8 percent slopes, rocky	2.4	0.2%
TpC	Thorndike-Plaisted association, 8 to 15 percent slopes, rocky	1.7	0.1%
TpD	Thorndike-Plaisted association, 15 to 30 percent slopes, rocky	0.6	0.1%
Totals for Area of Interest		**1,148.7**	**100.0%**

LEGEND

- DRAINAGE BOUNDARY
- TC PATH
- PROPERTY LINE
- EX 1 — DRAINAGE AREA
- DP 1 — POINT OF ANALYSIS

EX 7A
EXISTING
WATERSHED 7A
AREA = 521.532 AC

EX 7B
EXISTING
WATERSHED 7B
AREA = 896.679 AC

EX 3
EXISTING
WATERSHED 3
AREA = 1,254.443 AC

EX 1
EXISTING
WATERSHED 1
AREA = 93.017 AC

EX 2
EXISTING
WATERSHED 2
AREA = 268.98 AC

EX 4
EXISTING
WATERSHED 4
AREA = 360.899 AC

EX 6
EXISTING
WATERSHED 6
AREA = 588.005 AC

EX 5
EXISTING
WATERSHED 5
AREA = 78.495 AC

DP 1
DP 2
DP 3
DP 4
DP 5
DP 6
DP 7

MUNN FLAT ROAD

BURRILL WOODS RD

N

0 400' 800' 1,600'
SCALE: 1" = 800'

Bar Measures 1 inch

TETRA TECH
www.tetratech.com
100 Nickerson Road
Marlborough, MA 01752
Phone: (508) 786-2200 Fax: (508) 786-2201

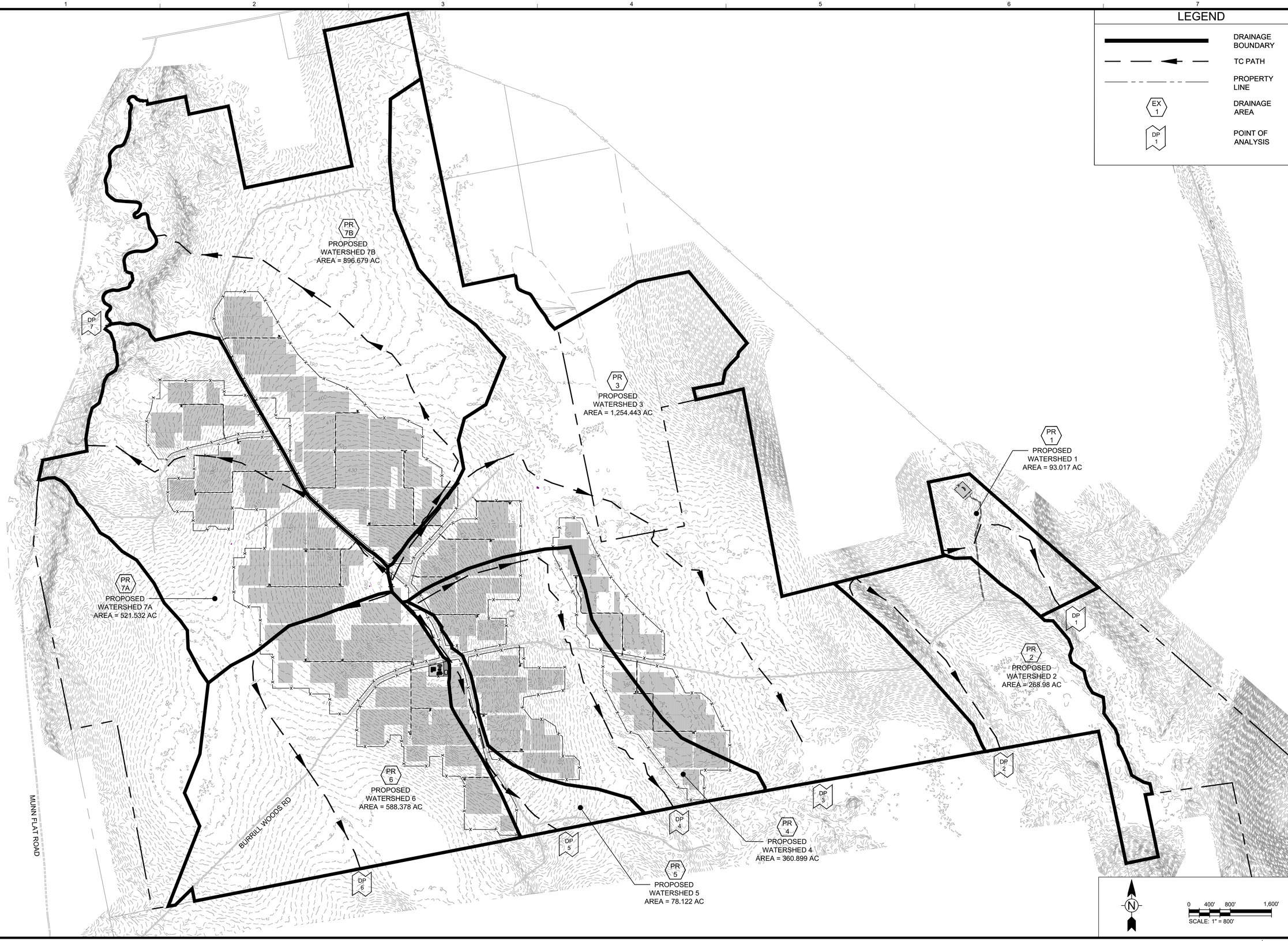
MARK	DATE	DESCRIPTION	BY

Hartland Solar Facility, LLC
Hartland Solar Project
Town of Hartland, Somerset County, Maine
Maine DEP Permit Drawings

Pre-Development Watershed Map

Project No.:	143-67639-21004
Designed By:	NRK
Drawn By:	AHS
Checked By:	MWM

EX



TETRA TECH
www.tetratech.com
100 Nickerson Road
Marlborough, MA 01752
Phone: (508) 786-2200 Fax: (508) 786-2201

MARK	DATE	DESCRIPTION	BY

Hartland Solar Facility, LLC
Hartland Solar Project
Town of Hartland, Somerset County, Maine
Maine DEP Permit Drawings

Post-Development Watershed Map

Project No.:	143-67639-21004
Designed By:	NRK
Drawn By:	AHS
Checked By:	MWM

PR

Bar Measures 1 inch

Appendix B

Permit Drawings

(See Exhibit 1-1)

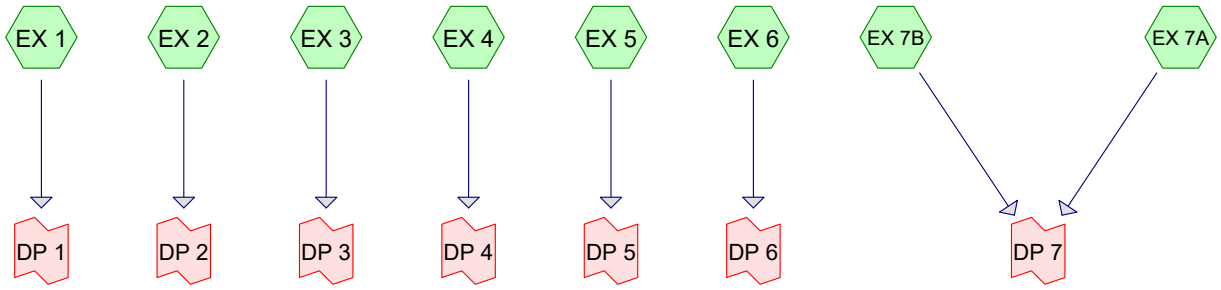
Appendix C

Soil Map Report

(See Exhibit 11-1)

Appendix D

HydroCAD® Input/Output Data



Subcat Reach Pond Link

Routing Diagram for Hartland - Pre-Development
Prepared by Tetra Tech Inc, Printed 11/15/2023

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type II 24-hr		Default	24.00	1	2.72	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.86	2
3	25-Year	Type II 24-hr		Default	24.00	1	4.57	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.834	96	Gravel Drives, HSG C (EX 5, EX 7A, EX 7B)
19.724	96	Gravel Drives, HSG D (EX 1, EX 2, EX 3, EX 4, EX 5, EX 6, EX 7A, EX 7B)
3.760	98	Water Surface, HSG C (EX 3)
31.481	60	Woods, Fair, HSG B (EX 7B)
338.656	73	Woods, Fair, HSG C (EX 1, EX 3, EX 4, EX 5, EX 6, EX 7A, EX 7B)
3,665.595	79	Woods, Fair, HSG D (EX 1, EX 2, EX 3, EX 4, EX 5, EX 6, EX 7A, EX 7B)
4,062.050	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
31.481	HSG B	EX 7B
345.250	HSG C	EX 1, EX 3, EX 4, EX 5, EX 6, EX 7A, EX 7B
3,685.319	HSG D	EX 1, EX 2, EX 3, EX 4, EX 5, EX 6, EX 7A, EX 7B
0.000	Other	
4,062.050		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	2.834	19.724	0.000	22.558	Gravel Drives	EX 1, EX 2, EX 3, EX 4, EX 5, EX 6, EX 7A, EX 7B
0.000	0.000	3.760	0.000	0.000	3.760	Water Surface	EX 3
0.000	31.481	338.656	3,665.595	0.000	4,035.732	Woods, Fair	EX 1, EX 2, EX 3, EX 4, EX 5, EX 6, EX 7A, EX 7B
0.000	**31.481**	**345.250**	**3,685.319**	**0.000**	**4,062.050**	**TOTAL AREA**	

Summary for Subcatchment EX 1:

Runoff = 36.27 cfs @ 13.02 hrs, Volume= 7.659 af, Depth= 0.99"
Routed to Link DP 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	4.586	73	Woods, Fair, HSG C
	87.800	79	Woods, Fair, HSG D
*	0.631	96	Gravel Drives, HSG D
	93.017	79	Weighted Average
	93.017		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	47	0.0360	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
73.0	3,427	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.1	3,474	Total			

Summary for Subcatchment EX 2:

Runoff = 69.43 cfs @ 13.79 hrs, Volume= 22.148 af, Depth= 0.99"
Routed to Link DP 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	267.767	79	Woods, Fair, HSG D
*	1.213	96	Gravel Drives, HSG D
	268.980	79	Weighted Average
	268.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	52	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
132.6	4,724	0.0141	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
142.7	4,776	Total			

Summary for Subcatchment EX 3:

Runoff = 154.43 cfs @ 16.63 hrs, Volume= 103.293 af, Depth= 0.99"
Routed to Link DP 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	3.760	98	Water Surface, HSG C
	124.823	73	Woods, Fair, HSG C
	1,121.452	79	Woods, Fair, HSG D
*	4.408	96	Gravel Drives, HSG D
	1,254.443	79	Weighted Average
	1,250.683		99.70% Pervious Area
	3.760		0.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	25	0.0100	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
354.8	11,947	0.0126	0.56		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
364.9	11,972	Total			

Summary for Subcatchment EX 4:

Runoff = 64.32 cfs @ 14.72 hrs, Volume= 29.717 af, Depth= 0.99"
Routed to Link DP 4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	356.446	79	Woods, Fair, HSG D
	2.875	73	Woods, Fair, HSG C
*	1.578	96	Gravel Drives, HSG D
	360.899	79	Weighted Average
	360.899		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	34	0.0181	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
214.2	8,255	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
224.4	8,289	Total			

Summary for Subcatchment EX 5:

Runoff = 19.31 cfs @ 13.76 hrs, Volume= 6.109 af, Depth= 0.93"
Routed to Link DP 5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	21.397	73	Woods, Fair, HSG C
	54.108	79	Woods, Fair, HSG D
*	1.491	96	Gravel Drives, HSG D
*	1.499	96	Gravel Drives, HSG C
	78.495	78	Weighted Average
	78.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	18	0.0050	0.03		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
128.8	5,463	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
139.1	5,481	Total			

Summary for Subcatchment EX 6:

Runoff = 105.39 cfs @ 14.82 hrs, Volume= 48.417 af, Depth= 0.99"
Routed to Link DP 6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	12.421	73	Woods, Fair, HSG C
	572.249	79	Woods, Fair, HSG D
*	3.335	96	Gravel Drives, HSG D
	588.005	79	Weighted Average
	588.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	23	0.0085	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
215.9	7,610	0.0138	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
226.0	7,633	Total			

Summary for Subcatchment EX 7A:

Runoff = 125.98 cfs @ 13.89 hrs, Volume= 42.944 af, Depth= 0.99"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	462.796	79	Woods, Fair, HSG D
	53.970	73	Woods, Fair, HSG C
*	3.947	96	Gravel Drives, HSG D
*	0.819	96	Gravel Drives, HSG C
	521.532	79	Weighted Average
	521.532		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	25	0.0100	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
144.2	6,934	0.0257	0.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
154.3	6,959	Total			

Summary for Subcatchment EX 7B:

Runoff = 139.56 cfs @ 15.03 hrs, Volume= 69.790 af, Depth= 0.93"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	118.584	73	Woods, Fair, HSG C
	742.977	79	Woods, Fair, HSG D
	31.481	60	Woods, Fair, HSG B
*	3.121	96	Gravel Drives, HSG D
*	0.516	96	Gravel Drives, HSG C
	896.679	78	Weighted Average
	896.679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	26	0.0105	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
235.6	10,269	0.0211	0.73		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
245.9	10,295	Total			

Summary for Link DP 1:

Inflow Area = 93.017 ac, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 36.27 cfs @ 13.02 hrs, Volume= 7.659 af
Primary = 36.27 cfs @ 13.02 hrs, Volume= 7.659 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 2:

Inflow Area = 268.980 ac, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 69.43 cfs @ 13.79 hrs, Volume= 22.148 af
Primary = 69.43 cfs @ 13.79 hrs, Volume= 22.148 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 3:

Inflow Area = 1,254.443 ac, 0.30% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 154.43 cfs @ 16.63 hrs, Volume= 103.293 af
Primary = 154.43 cfs @ 16.63 hrs, Volume= 103.293 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 4:

Inflow Area = 360.899 ac, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 64.32 cfs @ 14.72 hrs, Volume= 29.717 af
Primary = 64.32 cfs @ 14.72 hrs, Volume= 29.717 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 5:

Inflow Area = 78.495 ac, 0.00% Impervious, Inflow Depth = 0.93" for 2-Year event
Inflow = 19.31 cfs @ 13.76 hrs, Volume= 6.109 af
Primary = 19.31 cfs @ 13.76 hrs, Volume= 6.109 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 6:

Inflow Area = 588.005 ac, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 105.39 cfs @ 14.82 hrs, Volume= 48.417 af
Primary = 105.39 cfs @ 14.82 hrs, Volume= 48.417 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 7:

Inflow Area = 1,418.211 ac, 0.00% Impervious, Inflow Depth = 0.95" for 2-Year event
Inflow = 238.04 cfs @ 14.48 hrs, Volume= 112.734 af
Primary = 238.04 cfs @ 14.48 hrs, Volume= 112.734 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment EX 1:

Runoff = 70.95 cfs @ 12.93 hrs, Volume= 14.344 af, Depth= 1.85"
Routed to Link DP 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	4.586	73	Woods, Fair, HSG C
	87.800	79	Woods, Fair, HSG D
*	0.631	96	Gravel Drives, HSG D
	93.017	79	Weighted Average
	93.017		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	47	0.0360	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
73.0	3,427	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.1	3,474	Total			

Summary for Subcatchment EX 2:

Runoff = 136.10 cfs @ 13.79 hrs, Volume= 41.478 af, Depth= 1.85"
Routed to Link DP 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	267.767	79	Woods, Fair, HSG D
*	1.213	96	Gravel Drives, HSG D
	268.980	79	Weighted Average
	268.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	52	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
132.6	4,724	0.0141	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
142.7	4,776	Total			

Summary for Subcatchment EX 3:

Runoff = 302.11 cfs @ 16.63 hrs, Volume= 193.442 af, Depth= 1.85"
Routed to Link DP 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	3.760	98	Water Surface, HSG C
	124.823	73	Woods, Fair, HSG C
	1,121.452	79	Woods, Fair, HSG D
*	4.408	96	Gravel Drives, HSG D
	1,254.443	79	Weighted Average
	1,250.683		99.70% Pervious Area
	3.760		0.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	25	0.0100	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
354.8	11,947	0.0126	0.56		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
364.9	11,972	Total			

Summary for Subcatchment EX 4:

Runoff = 126.97 cfs @ 14.71 hrs, Volume= 55.652 af, Depth= 1.85"
Routed to Link DP 4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	356.446	79	Woods, Fair, HSG D
	2.875	73	Woods, Fair, HSG C
*	1.578	96	Gravel Drives, HSG D
	360.899	79	Weighted Average
	360.899		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	34	0.0181	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
214.2	8,255	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
224.4	8,289	Total			

Summary for Subcatchment EX 5:

Runoff = 38.68 cfs @ 13.75 hrs, Volume= 11.617 af, Depth= 1.78"
Routed to Link DP 5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	21.397	73	Woods, Fair, HSG C
	54.108	79	Woods, Fair, HSG D
*	1.491	96	Gravel Drives, HSG D
*	1.499	96	Gravel Drives, HSG C
	78.495	78	Weighted Average
	78.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	18	0.0050	0.03		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
128.8	5,463	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
139.1	5,481	Total			

Summary for Subcatchment EX 6:

Runoff = 207.32 cfs @ 14.82 hrs, Volume= 90.673 af, Depth= 1.85"
Routed to Link DP 6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	12.421	73	Woods, Fair, HSG C
	572.249	79	Woods, Fair, HSG D
*	3.335	96	Gravel Drives, HSG D
	588.005	79	Weighted Average
	588.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	23	0.0085	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
215.9	7,610	0.0138	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
226.0	7,633	Total			

Summary for Subcatchment EX 7A:

Runoff = 247.93 cfs @ 13.89 hrs, Volume= 80.423 af, Depth= 1.85"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	462.796	79	Woods, Fair, HSG D
	53.970	73	Woods, Fair, HSG C
*	3.947	96	Gravel Drives, HSG D
*	0.819	96	Gravel Drives, HSG C
	521.532	79	Weighted Average
	521.532		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	25	0.0100	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
144.2	6,934	0.0257	0.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
154.3	6,959	Total			

Summary for Subcatchment EX 7B:

Runoff = 280.87 cfs @ 15.03 hrs, Volume= 132.711 af, Depth= 1.78"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	118.584	73	Woods, Fair, HSG C
	742.977	79	Woods, Fair, HSG D
	31.481	60	Woods, Fair, HSG B
*	3.121	96	Gravel Drives, HSG D
*	0.516	96	Gravel Drives, HSG C
	896.679	78	Weighted Average
	896.679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	26	0.0105	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
235.6	10,269	0.0211	0.73		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
245.9	10,295	Total			

Summary for Link DP 1:

Inflow Area = 93.017 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 70.95 cfs @ 12.93 hrs, Volume= 14.344 af
Primary = 70.95 cfs @ 12.93 hrs, Volume= 14.344 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 2:

Inflow Area = 268.980 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 136.10 cfs @ 13.79 hrs, Volume= 41.478 af
Primary = 136.10 cfs @ 13.79 hrs, Volume= 41.478 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 3:

Inflow Area = 1,254.443 ac, 0.30% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 302.11 cfs @ 16.63 hrs, Volume= 193.442 af
Primary = 302.11 cfs @ 16.63 hrs, Volume= 193.442 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 4:

Inflow Area = 360.899 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 126.97 cfs @ 14.71 hrs, Volume= 55.652 af
Primary = 126.97 cfs @ 14.71 hrs, Volume= 55.652 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 5:

Inflow Area = 78.495 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 38.68 cfs @ 13.75 hrs, Volume= 11.617 af
Primary = 38.68 cfs @ 13.75 hrs, Volume= 11.617 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 6:

Inflow Area = 588.005 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 207.32 cfs @ 14.82 hrs, Volume= 90.673 af
Primary = 207.32 cfs @ 14.82 hrs, Volume= 90.673 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 7:

Inflow Area = 1,418.211 ac, 0.00% Impervious, Inflow Depth = 1.80" for 10-Year event
Inflow = 473.94 cfs @ 14.40 hrs, Volume= 213.134 af
Primary = 473.94 cfs @ 14.40 hrs, Volume= 213.134 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment EX 1:

Runoff = 94.41 cfs @ 12.93 hrs, Volume= 18.877 af, Depth= 2.44"
Routed to Link DP 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	4.586	73	Woods, Fair, HSG C
	87.800	79	Woods, Fair, HSG D
*	0.631	96	Gravel Drives, HSG D
	93.017	79	Weighted Average
	93.017		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	47	0.0360	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
73.0	3,427	0.0245	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.1	3,474	Total			

Summary for Subcatchment EX 2:

Runoff = 181.00 cfs @ 13.79 hrs, Volume= 54.588 af, Depth= 2.44"
Routed to Link DP 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	267.767	79	Woods, Fair, HSG D
*	1.213	96	Gravel Drives, HSG D
	268.980	79	Weighted Average
	268.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	52	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
132.6	4,724	0.0141	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
142.7	4,776	Total			

Summary for Subcatchment EX 3:

Runoff = 402.65 cfs @ 16.62 hrs, Volume= 254.581 af, Depth= 2.44"
Routed to Link DP 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	3.760	98	Water Surface, HSG C
	124.823	73	Woods, Fair, HSG C
	1,121.452	79	Woods, Fair, HSG D
*	4.408	96	Gravel Drives, HSG D
	1,254.443	79	Weighted Average
	1,250.683		99.70% Pervious Area
	3.760		0.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	25	0.0100	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
354.8	11,947	0.0126	0.56		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
364.9	11,972	Total			

Summary for Subcatchment EX 4:

Runoff = 169.48 cfs @ 14.71 hrs, Volume= 73.242 af, Depth= 2.44"
Routed to Link DP 4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	356.446	79	Woods, Fair, HSG D
	2.875	73	Woods, Fair, HSG C
*	1.578	96	Gravel Drives, HSG D
	360.899	79	Weighted Average
	360.899		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	34	0.0181	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
214.2	8,255	0.0165	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
224.4	8,289	Total			

Summary for Subcatchment EX 5:

Runoff = 51.83 cfs @ 13.75 hrs, Volume= 15.377 af, Depth= 2.35"
Routed to Link DP 5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	21.397	73	Woods, Fair, HSG C
	54.108	79	Woods, Fair, HSG D
*	1.491	96	Gravel Drives, HSG D
*	1.499	96	Gravel Drives, HSG C
	78.495	78	Weighted Average
	78.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	18	0.0050	0.03		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
128.8	5,463	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
139.1	5,481	Total			

Summary for Subcatchment EX 6:

Runoff = 276.38 cfs @ 14.82 hrs, Volume= 119.332 af, Depth= 2.44"
Routed to Link DP 6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	12.421	73	Woods, Fair, HSG C
	572.249	79	Woods, Fair, HSG D
*	3.335	96	Gravel Drives, HSG D
	588.005	79	Weighted Average
	588.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	23	0.0085	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
215.9	7,610	0.0138	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
226.0	7,633	Total			

Summary for Subcatchment EX 7A:

Runoff = 330.24 cfs @ 13.89 hrs, Volume= 105.841 af, Depth= 2.44"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	462.796	79	Woods, Fair, HSG D
	53.970	73	Woods, Fair, HSG C
*	3.947	96	Gravel Drives, HSG D
*	0.819	96	Gravel Drives, HSG C
	521.532	79	Weighted Average
	521.532		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	25	0.0100	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
144.2	6,934	0.0257	0.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
154.3	6,959	Total			

Summary for Subcatchment EX 7B:

Runoff = 377.61 cfs @ 15.03 hrs, Volume= 175.656 af, Depth= 2.35"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	118.584	73	Woods, Fair, HSG C
	742.977	79	Woods, Fair, HSG D
	31.481	60	Woods, Fair, HSG B
*	3.121	96	Gravel Drives, HSG D
*	0.516	96	Gravel Drives, HSG C
	896.679	78	Weighted Average
	896.679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	26	0.0105	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
235.6	10,269	0.0211	0.73		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
245.9	10,295	Total			

Summary for Link DP 1:

Inflow Area = 93.017 ac, 0.00% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 94.41 cfs @ 12.93 hrs, Volume= 18.877 af
Primary = 94.41 cfs @ 12.93 hrs, Volume= 18.877 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 2:

Inflow Area = 268.980 ac, 0.00% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 181.00 cfs @ 13.79 hrs, Volume= 54.588 af
Primary = 181.00 cfs @ 13.79 hrs, Volume= 54.588 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 3:

Inflow Area = 1,254.443 ac, 0.30% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 402.65 cfs @ 16.62 hrs, Volume= 254.581 af
Primary = 402.65 cfs @ 16.62 hrs, Volume= 254.581 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 4:

Inflow Area = 360.899 ac, 0.00% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 169.48 cfs @ 14.71 hrs, Volume= 73.242 af
Primary = 169.48 cfs @ 14.71 hrs, Volume= 73.242 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 5:

Inflow Area = 78.495 ac, 0.00% Impervious, Inflow Depth = 2.35" for 25-Year event
Inflow = 51.83 cfs @ 13.75 hrs, Volume= 15.377 af
Primary = 51.83 cfs @ 13.75 hrs, Volume= 15.377 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 6:

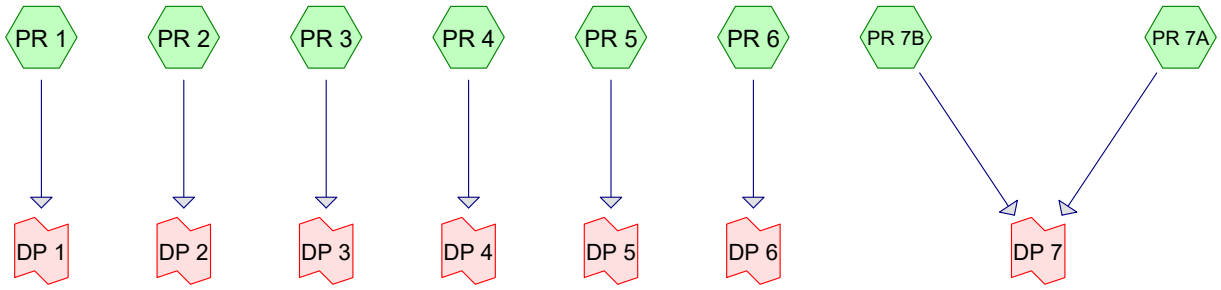
Inflow Area = 588.005 ac, 0.00% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 276.38 cfs @ 14.82 hrs, Volume= 119.332 af
Primary = 276.38 cfs @ 14.82 hrs, Volume= 119.332 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 7:

Inflow Area = 1,418.211 ac, 0.00% Impervious, Inflow Depth = 2.38" for 25-Year event
Inflow = 635.23 cfs @ 14.40 hrs, Volume= 281.497 af
Primary = 635.23 cfs @ 14.40 hrs, Volume= 281.497 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for Hartland - Post-Development
Prepared by Tetra Tech Inc, Printed 11/15/2023

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type II 24-hr		Default	24.00	1	2.72	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.86	2
3	25-Year	Type II 24-hr		Default	24.00	1	4.57	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
6.344	70	Brush, Fair, HSG C (PR 4, PR 5, PR 6, PR 7A)
116.788	77	Brush, Fair, HSG D (PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B)
3.421	96	Gravel Drives, HSG C (PR 1, PR 4, PR 5, PR 7A, PR 7B)
29.310	96	Gravel Drives, HSG D (PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B)
0.707	60	Gravel Substation, HSG C (PR 1)
1.318	60	Gravel Substation, HSG D (PR 1, PR 6)
25.554	71	Meadow, non-grazed, HSG C (PR 1, PR 4, PR 5, PR 6, PR 7A)
958.983	78	Meadow, non-grazed, HSG D (PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B)
0.087	98	Unconnected Impervious, HSG C (PR 1, PR 7B)
0.870	98	Unconnected Impervious, HSG D (PR 1, PR 3, PR 4, PR 6, PR 7A)
0.091	98	Unconnected roofs, HSG D (PR 6)
3.760	98	Water Surface, HSG C (PR 3)
31.481	60	Woods, Fair, HSG B (PR 7B)
305.377	73	Woods, Fair, HSG C (PR 1, PR 3, PR 5, PR 6, PR 7A, PR 7B)
2,577.959	79	Woods, Fair, HSG D (PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B)
4,062.050	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
31.481	HSG B	PR 7B
345.250	HSG C	PR 1, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B
3,685.319	HSG D	PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B
0.000	Other	
4,062.050		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	6.344	116.788	0.000	123.132	Brush, Fair	PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B
0.000	0.000	3.421	29.310	0.000	32.731	Gravel Drives	PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B
0.000	0.000	0.707	1.318	0.000	2.025	Gravel Substation	PR 1, PR 6
0.000	0.000	25.554	958.983	0.000	984.537	Meadow, non-grazed	PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B
0.000	0.000	0.087	0.870	0.000	0.957	Unconnected Impervious	PR 1, PR 3, PR 4, PR 6, PR 7A, PR 7B
0.000	0.000	0.000	0.091	0.000	0.091	Unconnected roofs	PR 6
0.000	0.000	3.760	0.000	0.000	3.760	Water Surface	PR 3
0.000	31.481	305.377	2,577.959	0.000	2,914.817	Woods, Fair	PR 1, PR 2, PR 3, PR 4, PR 5, PR 6, PR 7A, PR 7B
0.000	**31.481**	**345.250**	**3,685.319**	**0.000**	**4,062.050**	**TOTAL AREA**	

Summary for Subcatchment PR 1:

Runoff = 34.64 cfs @ 13.02 hrs, Volume= 7.659 af, Depth= 0.99"
Routed to Link DP 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	3.058	78	Meadow, non-grazed, HSG D
	3.343	71	Meadow, non-grazed, HSG C
*	0.482	96	Gravel Drives, HSG C
*	1.083	96	Gravel Drives, HSG D
*	0.034	98	Unconnected Impervious, HSG C
*	0.269	98	Unconnected Impervious, HSG D
	0.020	73	Woods, Fair, HSG C
	83.300	79	Woods, Fair, HSG D
	0.519	77	Brush, Fair, HSG D
*	0.707	60	Gravel Substation, HSG C
*	0.202	60	Gravel Substation, HSG D
	93.017	79	Weighted Average
	92.714		99.67% Pervious Area
	0.303		0.33% Impervious Area
	0.303		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	47	0.0350	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
3.3	637	0.4230	3.25		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	54	0.0470	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
64.5	2,736	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
88.1	3,474	Total			

Summary for Subcatchment PR 2:

Runoff = 69.43 cfs @ 13.79 hrs, Volume= 22.148 af, Depth= 0.99"
Routed to Link DP 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
*	1.541	96	Gravel Drives, HSG D
	262.969	79	Woods, Fair, HSG D
	3.562	77	Brush, Fair, HSG D
	0.908	78	Meadow, non-grazed, HSG D
	268.980	79	Weighted Average
	268.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	52	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
132.6	4,724	0.0141	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
142.7	4,776	Total			

Summary for Subcatchment PR 3:

Runoff = 136.69 cfs @ 17.58 hrs, Volume= 97.636 af, Depth= 0.93"
Routed to Link DP 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	145.827	78	Meadow, non-grazed, HSG D
*	6.230	96	Gravel Drives, HSG D
*	0.044	98	Unconnected Impervious, HSG D
	946.155	79	Woods, Fair, HSG D
	124.816	73	Woods, Fair, HSG C
	27.611	77	Brush, Fair, HSG D
	3.760	98	Water Surface, HSG C
	1,254.443	78	Weighted Average
	1,250.639		99.70% Pervious Area
	3.804		0.30% Impervious Area
	0.044		1.16% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
1.1	48	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.1	265	0.0301	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.8	889	0.0382	1.37		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	72	0.0298	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
13.0	886	0.0263	1.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
355.3	9,770	0.0084	0.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
405.6	11,972	Total			

Summary for Subcatchment PR 4:

Runoff = 54.52 cfs @ 15.35 hrs, Volume= 28.090 af, Depth= 0.93"
Routed to Link DP 4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	181.337	78	Meadow, non-grazed, HSG D
	2.664	71	Meadow, non-grazed, HSG C
*	2.865	96	Gravel Drives, HSG D
*	0.071	98	Unconnected Impervious, HSG D
	146.304	79	Woods, Fair, HSG D
	27.448	77	Brush, Fair, HSG D
	0.147	70	Brush, Fair, HSG C
*	0.063	96	Gravel Drives, HSG C
	360.899	78	Weighted Average
	360.828		99.98% Pervious Area
	0.071		0.02% Impervious Area
	0.071		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	56	0.0181	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
2.0	70	0.0143	0.60		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	2,140	0.0402	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
223.1	6,023	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
260.6	8,289	Total			

Summary for Subcatchment PR 5:

Runoff = 18.56 cfs @ 13.64 hrs, Volume= 5.740 af, Depth= 0.88"
Routed to Link DP 5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	10.756	71	Meadow, non-grazed, HSG C
	10.649	78	Meadow, non-grazed, HSG D
*	1.576	96	Gravel Drives, HSG C
*	1.517	96	Gravel Drives, HSG D
	6.534	73	Woods, Fair, HSG C
	38.001	79	Woods, Fair, HSG D
	4.009	70	Brush, Fair, HSG C
	5.080	77	Brush, Fair, HSG D
	78.122	77	Weighted Average
	78.122		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
74.2	3,819	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	57	0.0185	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
8.5	404	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.6	1,172	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
130.5	5,481	Total			

Summary for Subcatchment PR 6:

Runoff = 101.39 cfs @ 15.06 hrs, Volume= 48.448 af, Depth= 0.99"
Routed to Link DP 6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	186.802	78	Meadow, non-grazed, HSG D
	6.151	71	Meadow, non-grazed, HSG C
*	5.412	96	Gravel Drives, HSG D
*	0.407	98	Unconnected Impervious, HSG D
	365.082	79	Woods, Fair, HSG D
	5.415	73	Woods, Fair, HSG C
	0.872	70	Brush, Fair, HSG C
	17.030	77	Brush, Fair, HSG D
*	1.116	60	Gravel Substation, HSG D
	0.091	98	Unconnected roofs, HSG D
	588.378	79	Weighted Average
	587.880		99.92% Pervious Area
	0.498		0.08% Impervious Area
	0.498		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	38	0.0085	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
41.9	2,841	0.0261	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
181.8	4,754	0.0076	0.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
233.8	7,633	Total			

Summary for Subcatchment PR 7A:

Runoff = 114.44 cfs @ 13.90 hrs, Volume= 40.592 af, Depth= 0.93"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	222.530	78	Meadow, non-grazed, HSG D
	2.640	71	Meadow, non-grazed, HSG C
*	5.673	96	Gravel Drives, HSG D
*	0.784	96	Gravel Drives, HSG C
*	0.079	98	Unconnected Impervious, HSG D
	214.673	79	Woods, Fair, HSG D
	50.000	73	Woods, Fair, HSG C
	1.316	70	Brush, Fair, HSG C
	23.837	77	Brush, Fair, HSG D
	521.532	78	Weighted Average
	521.453		99.98% Pervious Area
	0.079		0.02% Impervious Area
	0.079		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow, Origin** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
18.1	921	0.0147	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	33	0.0172	0.05		**Sheet Flow, 1st Prop Road Crossing** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
26.4	1,318	0.0277	0.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.4	1,024	0.0288	1.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	68	0.0267	0.11		**Sheet Flow, 2nd Prop Road Crossing** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
19.6	1,632	0.0392	1.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.3	1,921	0.0169	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
158.3	6,959	Total			

Summary for Subcatchment PR 7B:

Runoff = 131.22 cfs @ 15.23 hrs, Volume= 65.888 af, Depth= 0.88"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.72"

	Area (ac)	CN	Description
	207.872	78	Meadow, non-grazed, HSG D
*	4.989	96	Gravel Drives, HSG D
*	0.053	98	Unconnected Impervious, HSG C
	31.481	60	Woods, Fair, HSG B
	521.475	79	Woods, Fair, HSG D
	118.592	73	Woods, Fair, HSG C
	11.701	77	Brush, Fair, HSG D
*	0.516	96	Gravel Drives, HSG C
	896.679	77	Weighted Average
	896.626		99.99% Pervious Area
	0.053		0.01% Impervious Area
	0.053		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	41	0.0266	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
11.8	957	0.0376	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	74	0.0315	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
12.6	855	0.0263	1.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
204.5	8,368	0.0186	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
249.2	10,295	Total			

Summary for Link DP 1:

Inflow Area = 93.017 ac, 0.33% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 34.64 cfs @ 13.02 hrs, Volume= 7.659 af
Primary = 34.64 cfs @ 13.02 hrs, Volume= 7.659 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 2:

Inflow Area = 268.980 ac, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 69.43 cfs @ 13.79 hrs, Volume= 22.148 af
Primary = 69.43 cfs @ 13.79 hrs, Volume= 22.148 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 3:

Inflow Area = 1,254.443 ac, 0.30% Impervious, Inflow Depth = 0.93" for 2-Year event
Inflow = 136.69 cfs @ 17.58 hrs, Volume= 97.636 af
Primary = 136.69 cfs @ 17.58 hrs, Volume= 97.636 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 4:

Inflow Area = 360.899 ac, 0.02% Impervious, Inflow Depth = 0.93" for 2-Year event
Inflow = 54.52 cfs @ 15.35 hrs, Volume= 28.090 af
Primary = 54.52 cfs @ 15.35 hrs, Volume= 28.090 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 5:

Inflow Area = 78.122 ac, 0.00% Impervious, Inflow Depth = 0.88" for 2-Year event
Inflow = 18.56 cfs @ 13.64 hrs, Volume= 5.740 af
Primary = 18.56 cfs @ 13.64 hrs, Volume= 5.740 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 6:

Inflow Area = 588.378 ac, 0.08% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 101.39 cfs @ 15.06 hrs, Volume= 48.448 af
Primary = 101.39 cfs @ 15.06 hrs, Volume= 48.448 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 7:

Inflow Area = 1,418.211 ac, 0.01% Impervious, Inflow Depth = 0.90" for 2-Year event
Inflow = 217.75 cfs @ 14.60 hrs, Volume= 106.479 af
Primary = 217.75 cfs @ 14.60 hrs, Volume= 106.479 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment PR 1:

Runoff = 68.06 cfs @ 13.02 hrs, Volume= 14.344 af, Depth= 1.85"
Routed to Link DP 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	3.058	78	Meadow, non-grazed, HSG D
	3.343	71	Meadow, non-grazed, HSG C
*	0.482	96	Gravel Drives, HSG C
*	1.083	96	Gravel Drives, HSG D
*	0.034	98	Unconnected Impervious, HSG C
*	0.269	98	Unconnected Impervious, HSG D
	0.020	73	Woods, Fair, HSG C
	83.300	79	Woods, Fair, HSG D
	0.519	77	Brush, Fair, HSG D
*	0.707	60	Gravel Substation, HSG C
*	0.202	60	Gravel Substation, HSG D
	93.017	79	Weighted Average
	92.714		99.67% Pervious Area
	0.303		0.33% Impervious Area
	0.303		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	47	0.0350	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
3.3	637	0.4230	3.25		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	54	0.0470	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
64.5	2,736	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
88.1	3,474	Total			

Summary for Subcatchment PR 2:

Runoff = 136.10 cfs @ 13.79 hrs, Volume= 41.478 af, Depth= 1.85"
Routed to Link DP 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
*	1.541	96	Gravel Drives, HSG D
	262.969	79	Woods, Fair, HSG D
	3.562	77	Brush, Fair, HSG D
	0.908	78	Meadow, non-grazed, HSG D
	268.980	79	Weighted Average
	268.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	52	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
132.6	4,724	0.0141	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
142.7	4,776	Total			

Summary for Subcatchment PR 3:

Runoff = 269.18 cfs @ 17.58 hrs, Volume= 185.661 af, Depth= 1.78"
Routed to Link DP 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	145.827	78	Meadow, non-grazed, HSG D
*	6.230	96	Gravel Drives, HSG D
*	0.044	98	Unconnected Impervious, HSG D
	946.155	79	Woods, Fair, HSG D
	124.816	73	Woods, Fair, HSG C
	27.611	77	Brush, Fair, HSG D
	3.760	98	Water Surface, HSG C
	1,254.443	78	Weighted Average
	1,250.639		99.70% Pervious Area
	3.804		0.30% Impervious Area
	0.044		1.16% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
1.1	48	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.1	265	0.0301	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.8	889	0.0382	1.37		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	72	0.0298	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
13.0	886	0.0263	1.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
355.3	9,770	0.0084	0.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
405.6	11,972	Total			

Summary for Subcatchment PR 4:

Runoff = 109.09 cfs @ 15.35 hrs, Volume= 53.414 af, Depth= 1.78"
Routed to Link DP 4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	181.337	78	Meadow, non-grazed, HSG D
	2.664	71	Meadow, non-grazed, HSG C
*	2.865	96	Gravel Drives, HSG D
*	0.071	98	Unconnected Impervious, HSG D
	146.304	79	Woods, Fair, HSG D
	27.448	77	Brush, Fair, HSG D
	0.147	70	Brush, Fair, HSG C
*	0.063	96	Gravel Drives, HSG C
	360.899	78	Weighted Average
	360.828		99.98% Pervious Area
	0.071		0.02% Impervious Area
	0.071		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	56	0.0181	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
2.0	70	0.0143	0.60		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	2,140	0.0402	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
223.1	6,023	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
260.6	8,289	Total			

Summary for Subcatchment PR 5:

Runoff = 38.12 cfs @ 13.62 hrs, Volume= 11.088 af, Depth= 1.70"
Routed to Link DP 5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	10.756	71	Meadow, non-grazed, HSG C
	10.649	78	Meadow, non-grazed, HSG D
*	1.576	96	Gravel Drives, HSG C
*	1.517	96	Gravel Drives, HSG D
	6.534	73	Woods, Fair, HSG C
	38.001	79	Woods, Fair, HSG D
	4.009	70	Brush, Fair, HSG C
	5.080	77	Brush, Fair, HSG D
	78.122	77	Weighted Average
	78.122		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
74.2	3,819	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	57	0.0185	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
8.5	404	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.6	1,172	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
130.5	5,481	Total			

Summary for Subcatchment PR 6:

Runoff = 199.85 cfs @ 14.81 hrs, Volume= 90.731 af, Depth= 1.85"
Routed to Link DP 6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	186.802	78	Meadow, non-grazed, HSG D
	6.151	71	Meadow, non-grazed, HSG C
*	5.412	96	Gravel Drives, HSG D
*	0.407	98	Unconnected Impervious, HSG D
	365.082	79	Woods, Fair, HSG D
	5.415	73	Woods, Fair, HSG C
	0.872	70	Brush, Fair, HSG C
	17.030	77	Brush, Fair, HSG D
*	1.116	60	Gravel Substation, HSG D
	0.091	98	Unconnected roofs, HSG D
	588.378	79	Weighted Average
	587.880		99.92% Pervious Area
	0.498		0.08% Impervious Area
	0.498		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	38	0.0085	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
41.9	2,841	0.0261	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
181.8	4,754	0.0076	0.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
233.8	7,633	Total			

Summary for Subcatchment PR 7A:

Runoff = 231.05 cfs @ 13.90 hrs, Volume= 77.188 af, Depth= 1.78"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	222.530	78	Meadow, non-grazed, HSG D
	2.640	71	Meadow, non-grazed, HSG C
*	5.673	96	Gravel Drives, HSG D
*	0.784	96	Gravel Drives, HSG C
*	0.079	98	Unconnected Impervious, HSG D
	214.673	79	Woods, Fair, HSG D
	50.000	73	Woods, Fair, HSG C
	1.316	70	Brush, Fair, HSG C
	23.837	77	Brush, Fair, HSG D
	521.532	78	Weighted Average
	521.453		99.98% Pervious Area
	0.079		0.02% Impervious Area
	0.079		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow, Origin** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
18.1	921	0.0147	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	33	0.0172	0.05		**Sheet Flow, 1st Prop Road Crossing** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
26.4	1,318	0.0277	0.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.4	1,024	0.0288	1.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	68	0.0267	0.11		**Sheet Flow, 2nd Prop Road Crossing** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
19.6	1,632	0.0392	1.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.3	1,921	0.0169	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
158.3	6,959	Total			

Summary for Subcatchment PR 7B:

Runoff = 268.07 cfs @ 15.23 hrs, Volume= 127.271 af, Depth= 1.70"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

	Area (ac)	CN	Description
	207.872	78	Meadow, non-grazed, HSG D
*	4.989	96	Gravel Drives, HSG D
*	0.053	98	Unconnected Impervious, HSG C
	31.481	60	Woods, Fair, HSG B
	521.475	79	Woods, Fair, HSG D
	118.592	73	Woods, Fair, HSG C
	11.701	77	Brush, Fair, HSG D
*	0.516	96	Gravel Drives, HSG C
	896.679	77	Weighted Average
	896.626		99.99% Pervious Area
	0.053		0.01% Impervious Area
	0.053		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	41	0.0266	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
11.8	957	0.0376	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	74	0.0315	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
12.6	855	0.0263	1.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
204.5	8,368	0.0186	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
249.2	10,295	Total			

Summary for Link DP 1:

Inflow Area = 93.017 ac, 0.33% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 68.06 cfs @ 13.02 hrs, Volume= 14.344 af
Primary = 68.06 cfs @ 13.02 hrs, Volume= 14.344 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 2:

Inflow Area = 268.980 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 136.10 cfs @ 13.79 hrs, Volume= 41.478 af
Primary = 136.10 cfs @ 13.79 hrs, Volume= 41.478 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 3:

Inflow Area = 1,254.443 ac, 0.30% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 269.18 cfs @ 17.58 hrs, Volume= 185.661 af
Primary = 269.18 cfs @ 17.58 hrs, Volume= 185.661 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 4:

Inflow Area = 360.899 ac, 0.02% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 109.09 cfs @ 15.35 hrs, Volume= 53.414 af
Primary = 109.09 cfs @ 15.35 hrs, Volume= 53.414 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 5:

Inflow Area = 78.122 ac, 0.00% Impervious, Inflow Depth = 1.70" for 10-Year event
Inflow = 38.12 cfs @ 13.62 hrs, Volume= 11.088 af
Primary = 38.12 cfs @ 13.62 hrs, Volume= 11.088 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 6:

Inflow Area = 588.378 ac, 0.08% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 199.85 cfs @ 14.81 hrs, Volume= 90.731 af
Primary = 199.85 cfs @ 14.81 hrs, Volume= 90.731 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 7:

Inflow Area = 1,418.211 ac, 0.01% Impervious, Inflow Depth = 1.73" for 10-Year event
Inflow = 441.98 cfs @ 14.43 hrs, Volume= 204.459 af
Primary = 441.98 cfs @ 14.43 hrs, Volume= 204.459 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment PR 1:

Runoff = 90.53 cfs @ 13.02 hrs, Volume= 18.877 af, Depth= 2.44"
Routed to Link DP 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	3.058	78	Meadow, non-grazed, HSG D
	3.343	71	Meadow, non-grazed, HSG C
*	0.482	96	Gravel Drives, HSG C
*	1.083	96	Gravel Drives, HSG D
*	0.034	98	Unconnected Impervious, HSG C
*	0.269	98	Unconnected Impervious, HSG D
	0.020	73	Woods, Fair, HSG C
	83.300	79	Woods, Fair, HSG D
	0.519	77	Brush, Fair, HSG D
*	0.707	60	Gravel Substation, HSG C
*	0.202	60	Gravel Substation, HSG D
	93.017	79	Weighted Average
	92.714		99.67% Pervious Area
	0.303		0.33% Impervious Area
	0.303		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	47	0.0350	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
3.3	637	0.4230	3.25		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	54	0.0470	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
64.5	2,736	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
88.1	3,474	Total			

Summary for Subcatchment PR 2:

Runoff = 181.00 cfs @ 13.79 hrs, Volume= 54.588 af, Depth= 2.44"
Routed to Link DP 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
*	1.541	96	Gravel Drives, HSG D
	262.969	79	Woods, Fair, HSG D
	3.562	77	Brush, Fair, HSG D
	0.908	78	Meadow, non-grazed, HSG D
	268.980	79	Weighted Average
	268.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	52	0.0440	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
132.6	4,724	0.0141	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
142.7	4,776	Total			

Summary for Subcatchment PR 3:

Runoff = 359.66 cfs @ 17.57 hrs, Volume= 245.741 af, Depth= 2.35"
Routed to Link DP 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	145.827	78	Meadow, non-grazed, HSG D
*	6.230	96	Gravel Drives, HSG D
*	0.044	98	Unconnected Impervious, HSG D
	946.155	79	Woods, Fair, HSG D
	124.816	73	Woods, Fair, HSG C
	27.611	77	Brush, Fair, HSG D
	3.760	98	Water Surface, HSG C
	1,254.443	78	Weighted Average
	1,250.639		99.70% Pervious Area
	3.804		0.30% Impervious Area
	0.044		1.16% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
1.1	48	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.1	265	0.0301	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.8	889	0.0382	1.37		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	72	0.0298	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
13.0	886	0.0263	1.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
355.3	9,770	0.0084	0.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
405.6	11,972	Total			

Summary for Subcatchment PR 4:

Runoff = 146.38 cfs @ 15.35 hrs, Volume= 70.699 af, Depth= 2.35"
Routed to Link DP 4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	181.337	78	Meadow, non-grazed, HSG D
	2.664	71	Meadow, non-grazed, HSG C
*	2.865	96	Gravel Drives, HSG D
*	0.071	98	Unconnected Impervious, HSG D
	146.304	79	Woods, Fair, HSG D
	27.448	77	Brush, Fair, HSG D
	0.147	70	Brush, Fair, HSG C
*	0.063	96	Gravel Drives, HSG C
	360.899	78	Weighted Average
	360.828		99.98% Pervious Area
	0.071		0.02% Impervious Area
	0.071		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	56	0.0181	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
2.0	70	0.0143	0.60		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	2,140	0.0402	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
223.1	6,023	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
260.6	8,289	Total			

Summary for Subcatchment PR 5:

Runoff = 51.63 cfs @ 13.49 hrs, Volume= 14.762 af, Depth= 2.27"
Routed to Link DP 5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	10.756	71	Meadow, non-grazed, HSG C
	10.649	78	Meadow, non-grazed, HSG D
*	1.576	96	Gravel Drives, HSG C
*	1.517	96	Gravel Drives, HSG D
	6.534	73	Woods, Fair, HSG C
	38.001	79	Woods, Fair, HSG D
	4.009	70	Brush, Fair, HSG C
	5.080	77	Brush, Fair, HSG D
	78.122	77	Weighted Average
	78.122		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
74.2	3,819	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	57	0.0185	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
8.5	404	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.6	1,172	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
130.5	5,481	Total			

Summary for Subcatchment PR 6:

Runoff = 266.86 cfs @ 14.81 hrs, Volume= 119.407 af, Depth= 2.44"
Routed to Link DP 6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	186.802	78	Meadow, non-grazed, HSG D
	6.151	71	Meadow, non-grazed, HSG C
*	5.412	96	Gravel Drives, HSG D
*	0.407	98	Unconnected Impervious, HSG D
	365.082	79	Woods, Fair, HSG D
	5.415	73	Woods, Fair, HSG C
	0.872	70	Brush, Fair, HSG C
	17.030	77	Brush, Fair, HSG D
*	1.116	60	Gravel Substation, HSG D
	0.091	98	Unconnected roofs, HSG D
	588.378	79	Weighted Average
	587.880		99.92% Pervious Area
	0.498		0.08% Impervious Area
	0.498		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	38	0.0085	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
41.9	2,841	0.0261	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
181.8	4,754	0.0076	0.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
233.8	7,633	Total			

Summary for Subcatchment PR 7A:

Runoff = 310.52 cfs @ 13.90 hrs, Volume= 102.166 af, Depth= 2.35"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	222.530	78	Meadow, non-grazed, HSG D
	2.640	71	Meadow, non-grazed, HSG C
*	5.673	96	Gravel Drives, HSG D
*	0.784	96	Gravel Drives, HSG C
*	0.079	98	Unconnected Impervious, HSG D
	214.673	79	Woods, Fair, HSG D
	50.000	73	Woods, Fair, HSG C
	1.316	70	Brush, Fair, HSG C
	23.837	77	Brush, Fair, HSG D
	521.532	78	Weighted Average
	521.453		99.98% Pervious Area
	0.079		0.02% Impervious Area
	0.079		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow, Origin** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
18.1	921	0.0147	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	33	0.0172	0.05		**Sheet Flow, 1st Prop Road Crossing** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
26.4	1,318	0.0277	0.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.4	1,024	0.0288	1.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	68	0.0267	0.11		**Sheet Flow, 2nd Prop Road Crossing** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
19.6	1,632	0.0392	1.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.3	1,921	0.0169	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
158.3	6,959	Total			

Summary for Subcatchment PR 7B:

Runoff = 362.32 cfs @ 15.23 hrs, Volume= 169.442 af, Depth= 2.27"
Routed to Link DP 7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.57"

	Area (ac)	CN	Description
	207.872	78	Meadow, non-grazed, HSG D
*	4.989	96	Gravel Drives, HSG D
*	0.053	98	Unconnected Impervious, HSG C
	31.481	60	Woods, Fair, HSG B
	521.475	79	Woods, Fair, HSG D
	118.592	73	Woods, Fair, HSG C
	11.701	77	Brush, Fair, HSG D
*	0.516	96	Gravel Drives, HSG C
	896.679	77	Weighted Average
	896.626		99.99% Pervious Area
	0.053		0.01% Impervious Area
	0.053		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	41	0.0266	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
11.8	957	0.0376	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.1	74	0.0315	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
12.6	855	0.0263	1.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
204.5	8,368	0.0186	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
249.2	10,295	Total			

Summary for Link DP 1:

Inflow Area = 93.017 ac, 0.33% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 90.53 cfs @ 13.02 hrs, Volume= 18.877 af
Primary = 90.53 cfs @ 13.02 hrs, Volume= 18.877 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 2:

Inflow Area = 268.980 ac, 0.00% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 181.00 cfs @ 13.79 hrs, Volume= 54.588 af
Primary = 181.00 cfs @ 13.79 hrs, Volume= 54.588 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 3:

Inflow Area = 1,254.443 ac, 0.30% Impervious, Inflow Depth = 2.35" for 25-Year event
Inflow = 359.66 cfs @ 17.57 hrs, Volume= 245.741 af
Primary = 359.66 cfs @ 17.57 hrs, Volume= 245.741 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 4:

Inflow Area = 360.899 ac, 0.02% Impervious, Inflow Depth = 2.35" for 25-Year event
Inflow = 146.38 cfs @ 15.35 hrs, Volume= 70.699 af
Primary = 146.38 cfs @ 15.35 hrs, Volume= 70.699 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 5:

Inflow Area = 78.122 ac, 0.00% Impervious, Inflow Depth = 2.27" for 25-Year event
Inflow = 51.63 cfs @ 13.49 hrs, Volume= 14.762 af
Primary = 51.63 cfs @ 13.49 hrs, Volume= 14.762 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 6:

Inflow Area = 588.378 ac, 0.08% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 266.86 cfs @ 14.81 hrs, Volume= 119.407 af
Primary = 266.86 cfs @ 14.81 hrs, Volume= 119.407 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link DP 7:

Inflow Area = 1,418.211 ac, 0.01% Impervious, Inflow Depth = 2.30" for 25-Year event
Inflow = 597.36 cfs @ 14.42 hrs, Volume= 271.608 af
Primary = 597.36 cfs @ 14.42 hrs, Volume= 271.608 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Appendix E

Inspection and Maintenance Plan

(See Exhibit 14-1)

Appendix F

Water Quality Treatment Calculations

Hartland Solar Project
Somerset County, Maine

QUALITY CALCULATIONS FOR NONLINEAR PORTION

SUMMARY

Total NEW Nonlinear Impervious Area =	67,695	SF	=	1.55	Acres
Total NEW Nonlinear Unvegetated Area =	96,210	SF	=	2.21	Acres
Total NEW Nonlinear Developed Area =	163,905	SF	=	3.76	Acres

% of Nonlinear Impervous Area Treated =	100%	>=	95% Requirement
% of Nonlinear Developed Area Treated =	100%	>=	80% Requirement

TREATMENT AND SIZING TABLE

Project Component	BMP Type(s)	Treated Nonlinear Areas (SF)		Level Spreader Length (FT)		Meadow Buffer Length (FT)	
		Impervious	Unvegetated*	Required	Provided	Required	Provided
Project Substation	Stone Bermed Level Lip Spreader and Self-Treating Gravel Substation	22,565	48,690	103.60	240**	150	150
Maintenance Building	Stone Bermed Level Lip Spreader	28,850	0	132.46	240**	150	150
CMP Substation	Stone Bermed Level Lip Spreader and Self-Treating Gravel Substation	16,280	47,520	74.75	200***	150	150

* Gravel portions of the substations are considered self-treating based on compliance with requirements described in the MDEP letter to Central Maine Power dated June 5, 2008.

** Sized to accommodate project substation and maintenance building portions of the Project.

*** Sized to accommodate an additional 27,315 SF of impervious area from linear portion of the Project.

Date: 11/21/2023

Hartland Solar Project
Somerset County, Maine

QUALITY CALCULATIONS FOR LINEAR PORTION

SUMMARY

NEW Secondary Access Road Width = 12 FT

Roadside Meadow Buffer Flow Path Length = 50 FT (Required and Provided)
Ditch Turnout Meadow Buffer Flow Path Length = 150 FT (Required and Provided)
Maximum Length of Road to Ditch Turnout Buffer = 200 FT (Allowed and Provided)

Total NEW Impervious Area =	421,645	SF	=	9.68	Acres
Total NEW Impervious Area Treated =	337,854	SF	=	7.76	Acres

% of Linear Portion Treated = 80% >= 75% Requirement

TREATMENT TABLES

Station	to	Station	Buffer Type	Side of Road	HSG	Impervious Area (SF)	Impervious Area Treated (SF)
GRAVEL DRIVE 0+00							
00+00	→	4+93.76	None	-	D	6096.79	0.00
4+93.76	→	6+93.76	Ditch Turnout	L	D	2400.00	2400.00
6+93.76	→	8+93.76	Ditch Turnout	L	D	2400.00	2400.00
8+93.76	→	10+93.76	Ditch Turnout	L	D	2400.00	2400.00
10+93.76	→	11+75.76	None	-	D	1755.68	0.00
GRAVEL DRIVE 50+00							
50+00	→	50+20	None	-	D	411.69	0.00
50+20	→	57+14	Roadside	L	D	8328.36	8328.36
57+14	→	59+14	Ditch Turnout	R	D	2400.00	2400.00
59+14	→	61+14	Ditch Turnout	R	D	2400.00	2400.00
61+14	→	63+14	Ditch Turnout	R	D	2400.00	2400.00
63+14	→	65+14	Ditch Turnout	R	D	3170.11	2400.00
65+14	→	65+43.75	None	-		356.40	0.00
GRAVEL DRIVE 100+00							
100+00	→	100+49.18	None	-	D	762.08	0.00
100+49.18	→	101+27.13	Roadside	R	D	1702.97	1702.97

Date: 11/21/2023

Hartland Solar Project
Somerset County, Maine

Station	to	Station	Buffer Type	Side of Road	HSG	Impervious Area (SF)	Impervious Area Treated (SF)
			GRAVEL DRIVE 150+00				
150+00	→	150+63.95	None	-	D	939.10	0.00
150+63.95	→	152+63.95	Ditch Turnout	R	D	2220.00	2220.00
152+63.95	→	154+63.95	Ditch Turnout	R	D	2400.00	2400.00
154+63.95	→	156+63.95	Ditch Turnout	R	D	3171.68	2400.00
156+63.95	→	158+63.95	Ditch Turnout	R	D	2400.00	2400.00
158+63.95	→	160+63.95	Ditch Turnout	R	D	2400.00	2400.00
160+63.95	→	162+01.94	None	-	D	1655.88	0.00
162+01.94	→	165+84	Roadside	R	D	4764.60	4764.60
165+84	→	167+85	Ditch Turnout	R	D	2318.52	2318.52
167+85	→	169+84	Ditch Turnout	R	D	2400.00	2400.00
169+84	→	171+84	Ditch Turnout	R	D	2400.00	2400.00
171+84	→	172+83	None	-	D	1441.11	0.00
172+83	→	172+95	Roadside	END	D	1344.00	1344.00
			GRAVEL DRIVE 200+00				
200+00	→	200+20	None	-	D	411.68	0.00
200+20	→	206+28.16	Roadside	L	D	7297.92	7297.92
206+28.16	→	208+28.16	Ditch Turnout	L	D	2220.00	2220.00
208+28.16	→	210+28.16	Ditch Turnout	L	D	2400.00	2400.00
210+28.16	→	212.+28.16	Ditch Turnout	L	D	2400.00	2400.00
212.+28.16	→	213+69.7	None	-	D	2470.13	0.00
213+69.7	→	215+69.7	Ditch Turnout	L	D	2400.00	2400.00
215+69.7	→	217+69.7	Ditch Turnout	L	D	2400.00	2400.00
217+69.7	→	219+69.7	Ditch Turnout	L	D	2400.00	2400.00
219+69.7	→	220+70	None	-	D	1384.54	0.00
220+70	→	224+28.47	Roadside	L	D	4301.64	4301.64
224+28.47	→	225+10.47	None	-	D	1755.68	0.00
			GRAVEL DRIVE 250+00				
250+00	→	251+96.69	Ditch Turnout	R	D	2459.63	2459.63
251+96.69	→	253+96.69	Ditch Turnout	R	D	2400.00	2400.00
253+96.69	→	255+96.69	Ditch Turnout	R	D	2400.00	2400.00
255+96.69	→	256+96.69	Ditch Turnout	R	D	1200.00	1200.00
256+96.69	→	257+41.38	None	-	D	536.20	0.00
257+41.38	→	259+13.42	Roadside	R	D	2064.48	2064.48
259+13.42	→	261+13.42	Ditch Turnout	R	D	2249.76	2249.76
261+13.42	→	263+13.42	Ditch Turnout	R	D	2400.00	2400.00
263+13.42	→	265+13.42	Ditch Turnout	R	D	2400.00	2400.00
265+13.42	→	266+07.96	None	-	D	1456.34	0.00
266+07.96	→	266+19.96	Roadside	END	D	1344.00	1344.00

Date: 11/21/2023

Hartland Solar Project
Somerset County, Maine

Station	to	Station	Buffer Type	Side of Road	HSG	Impervious Area (SF)	Impervious Area Treated (SF)
			GRAVEL DRIVE 300+00				
300+00	→	300+20	None	-	D	411.68	0.00
300+20	→	301+40.83	Roadside	L	D	1449.92	1449.92
301+40.83	→	303+39.52	Ditch Turnout	L	D	2384.28	2384.28
303+39.52	→	303+39.52	Ditch Turnout	L	D	2400.00	2400.00
303+39.52	→	303+39.52	Ditch Turnout	L	D	2450.55	2450.55
303+39.52	→	308+04.19	None	-	D	1498.48	0.00
			GRAVEL DRIVE 350+00				
350+00	→	350+20	None	-	D	411.68	0.00
350+20	→	352+19.39	Roadside	R	D	2392.69	2392.69
352+19.39	→	354+19.39	Ditch Turnout	R	D	2220.00	2220.00
354+19.39	→	356+19.39	Ditch Turnout	R	D	2400.00	2400.00
356+19.39	→	358+19.39	Ditch Turnout	R	D	2400.00	2400.00
358+19.39	→	360+19.39	Ditch Turnout	R	D	2400.00	2400.00
360+19.39	→	360+96.75	None	-	D	1882.59	0.00
			GRAVEL DRIVE 400+00				
400+00	→	400+30	None	-	D	531.68	0.00
400+30	→	406+56.54	Roadside	R	D	7446.48	7446.48
406+56.54	→	407+25.91	None	-	D	969.47	0.00
407+25.91	→	408+61.86	Ditch Turnout	L	D	2400.00	2400.00
408+61.86	→	410+61.86	Ditch Turnout	L	D	2400.00	2400.00
410+61.86	→	412+61.86	Ditch Turnout	L	D	2400.00	2400.00
412+61.86	→	413+73.17	None	-	D	1335.72	0.00
413+73.17	→	415+73.17	Ditch Turnout	L	D	2400.00	2400.00
415+73.17	→	417+73.17	Ditch Turnout	L	D	2400.00	2400.00
417+73.17	→	419+73.17	Ditch Turnout	L	D	2400.00	2400.00
419+73.17	→	421+63.17	Ditch Turnout	L	D	3051.59	2280.00
			GRAVEL DRIVE 450+00				
450+00	→	450+20	None	-	D	411.68	0.00
450+20	→	452+89.65	Roadside	R	D	3407.50	3407.50
452+89.65	→	453+01.65	Roadside	END	D	1344.00	1344.00
			GRAVEL DRIVE 500+00				
500+00	→	500+20	None	-	D	411.68	0.00
500+20	→	505+48.95	Roadside	R	D	6347.40	6347.40
505+48.95	→	506+11.94	None	-	D	756.99	0.00
506+11.94	→	514+06.44	Roadside	R	D	9534.00	9534.00
514+06.44	→	514+88.44	None	-	D	1759.83	0.00

Date: 11/21/2023

Hartland Solar Project
Somerset County, Maine

Station	to	Station	Buffer Type	Side of Road	HSG	Impervious Area (SF)	Impervious Area Treated (SF)
			GRAVEL DRIVE 550+00				
550+00	→	550+20	None	-	D	411.68	0.00
550+20	→	551+78.02	Roadside	L	D	1896.24	1896.24
551+78.02	→	553+60.24	Ditch Turnout	L	D	2186.52	2186.52
553+60.24	→	555+60.24	Ditch Turnout	L	D	2400.00	2400.00
555+60.24	→	557+60.24	Ditch Turnout	L	D	2400.00	2400.00
557+60.24	→	559+60.24	Ditch Turnout	L	D	2400.00	2400.00
559+60.24	→	561+10.94	Ditch Turnout	L	D	2580.08	1808.40
			GRAVEL DRIVE 600+00				
600+00	→	600+20	None	-	D	411.68	0.00
600+20	→	601+25.83	Roadside	L	D	1269.96	1269.96
601+25.83	→	603+09.08	Ditch Turnout	L	D	2199.00	2199.00
603+09.08	→	605+09.08	Ditch Turnout	L	D	2400.00	2400.00
605+09.08	→	607+09.08	Ditch Turnout	L	D	2400.00	2400.00
607+09.08	→	609+09.08	Ditch Turnout	L	D	2400.00	2400.00
609+09.08	→	609+49.39	None	-	D	1255.46	0.00
			GRAVEL DRIVE 650+00				
650+00	→	650+50	None	-	D	777.08	0.00
650+50	→	651+48.77	Ditch Turnout	L	D	1185.12	1185.12
651+48.77	→	653+48.77	Ditch Turnout	L	D	2400.00	2400.00
653+48.77	→	655+48.77	Ditch Turnout	L	D	2400.00	2400.00
655+48.77	→	657+48.77	Ditch Turnout	L	D	2400.00	2400.00
657+48.77	→	659+48.77	Ditch Turnout	L	D	3171.68	2400.00
			GRAVEL DRIVE 700+00				
700+00	→	701+34.42	None	-	D	2591.53	0.00
701+34.42	→	705+82.93	Roadside	L	D	5382.12	5382.12
705+82.93	→	706+22.93	None	-	D	480.00	0.00
706+22.93	→	709+82.93	Roadside	L	D	4320.00	4320.00
709+82.93	→	710+22.93	None	-	D	480.00	0.00
710+22.93	→	713+82.93	Roadside	L	D	4320.00	4320.00
713+82.93	→	714+22.93	None	-	D	480.00	0.00
714+22.93	→	717+30.12	Roadside	L	D	4458.08	3686.40
717+30.12	→	717+70.12	None	-	D	480.00	0.00
717+70.12	→	721+30.12	Roadside	L	D	4320.00	4320.00
721+30.12	→	722+02.82	None	-	D	1637.11	0.00

Date: 11/21/2023

Hartland Solar Project
Somerset County, Maine

Station	to	Station	Buffer Type	Side of Road	HSG	Impervious Area (SF)	Impervious Area Treated (SF)
			GRAVEL DRIVE 750+00				
750+00	→	750+20	None	-	D	411.68	0.00
750+20	→	751+07.31	Ditch Turnout	R	D	1047.51	1047.51
751+07.31	→	753+07.31	Ditch Turnout	R	D	2400.00	2400.00
753+07.31	→	755+07.31	Ditch Turnout	R	D	2400.00	2400.00
755+07.31	→	757+07.31	Ditch Turnout	R	D	2400.00	2400.00
757+07.31	→	757+88.80	None	-	D	977.91	0.00
757+88.80	→	759+73.80	Ditch Turnout	R	D	2220.00	2220.00
759+73.80	→	761+73.80	Ditch Turnout	R	D	2400.00	2400.00
761+73.80	→	762+92.36	None	-	D	2194.31	0.00
			GRAVEL DRIVE 800+00				
800+00	→	800+33.83	None	-	D	577.74	14.91
800+33.83	→	803+31.83	Roadside	R	D	3498.00	3498.00
803+31.83	→	804+13.34	None	-	D	1759.91	0.00
			GRAVEL DRIVE 850+00				
850+00	→	850+37.22	None	-	D	618.37	0.00
850+37.22	→	853+58.49	Roadside	L	D	3651.36	3651.36
853+58.49	→	854+23.51	None	-	D	1755.68	0.00
			GRAVEL DRIVE 900+00				
900+00	→	900+20	None	-	D	411.68	0.00
900+20	→	900+89.78	Roadside	R	D	837.36	837.36
900+89.78	→	901+53.81	None	-	D	1540.39	0.00
901+53.81	→	901+83.81	Roadside	R	D	360.00	360.00
			GRAVEL DRIVE 950+00				
950+00	→	950+30	None	-	D	746.28	0.00
950+30	→	950+85.23	Roadside	R	D	662.76	662.76
950+85.23	→	951+65.45	None	-	D	1734.35	0.00
951+65.45	→	957+94.25	Roadside	R	D	7545.60	7545.60
957+94.25	→	958+18.69	None	-	D	269.32	0.00
958+18.69	→	960+16.92	Ditch Turnout	R	D	2400.00	2400.00
960+16.92	→	962+16.92	Ditch Turnout	R	D	2400.00	2400.00
962+16.92	→	963+93.85	Roadside	R	D	2123.16	2123.16
963+93.85	→	964+18.85	Roadside	BOTH	D	300.00	300.00
964+18.85	→	972+99.22	Roadside	L	D	10564.44	10564.44
972+99.22	→	973+56.96	Roadside	END	D	2375.19	2375.19

Date: 11/21/2023

Hartland Solar Project
Somerset County, Maine

Station	to	Station	Buffer Type	Side of Road	HSG	Impervious Area (SF)	Impervious Area Treated (SF)
			GRAVEL DRIVE 1000+00				
1000+00	→	1000+30	None	-	D	757.51	0.00
1000+30	→	1006+01.01	Roadside	L	D	6851.40	6851.40
1006+01.01	→	1006+52.83	None	-	D	759.68	0.00
1006+52.83	→	1016+43.51	Roadside	R	D	12703.92	12703.92
1016+43.51	→	1017+00	None	-	D	678.58	0.00
1017+00	→	1024+00.82	Roadside	R	D	8409.12	8409.12
1024+00.82	→	1024+96.82	None	-	D	2186.28	0.00
			GRAVEL DRIVE 1050+00				
1050+00	→	1050+20	None	-	D	411.68	0.00
1050+20	→	1052+20	Ditch Turnout	R	D	2400.00	2400.00
1052+20	→	1054+20	Ditch Turnout	R	D	2400.00	2400.00
1054+20	→	1056+20	Ditch Turnout	R	D	2400.00	2400.00
1056+20	→	1057+05.30	None	-	D	1745.56	0.00
			GRAVEL DRIVE 1100+00				
1100+00	→	1100+20	None	-	D	411.68	0.00
1100+20	→	1106+30.64	Roadside	L	D	7327.68	7327.68
1106+30.64	→	1107+12.64	None	-	D	1753.90	0.00
			GRAVEL DRIVE 1150+00				
1150+00	→	1158+26.67	None	L	D	16655.41	0.00
1158+26.67	→	1171+81.87	Stone Bermed Level Lip Spreader	R	D	27315.03	27315.03

Date: 11/21/2023

Appendix G

Phosphorus Calculations

LAKE	TOWN	DDA	ANAD	AAD	GF	D	F	WQC	LOP	C	FC	P	SWT
Great Moose Lake	Hartland	9782	1500	8282	0.2	1656	67.45	mod-sensitive	h	0.75	50.59	0.031	414
DDA	Direct land drainage area in Township in acres												
ANAD	Area not available for development in acres												
AAD	Area available for development in acres (DDA - ANAD)												
GF	Growth Factor												
D	Area likely to be developed in acres (GF x AAD)												
F	lbs. phosphorus allocated to towns share of watershed per ppb in lake												
WQC	Water quality category												
LOP	Level of Protection (h=high(coldwater fishery);m=medium)												
C	Acceptable increase in lake's phosphorus concentration in ppb												
FC	Allowable increase in annual phosphorus load to the lake (lb/year)												
P	Per acre phosphorus allocation (FC/D) (lb/acre/year)												
SWT	Small Watershed Threshold in acres												

Received from MDEP: June 3, 2022

Worksheet 1 - PPB calculations

Project Name: Hartland Solar Project

Lake Watershed: Great Moose Lake

Town: Hartland

Standard Calculations

Watershed per acre phosphorus budget (Appendix C)	**PAPB**	0.031	lbs P/acre/year
Total acreage of development parcel:	**TA**	2327.65	acres
NWI wetland acreage:	**WA**	426.26	acres
Steep slope acreage:	**SA**	0	acres
Project acreage: A = TA - (WA+ SA)	**A**	1901.39	acres
Project Phosphorus Budget: PPB = P x A	**PPB**	58.94309	**lbs P/year**

Small Watershed Adjustment

If Project Acreage (A) is greater than the threshold acreage for the small watershed threshold (SWT, from pertinent lake and town info in the table in Appendix C), calculate an alternative PPB using the analysis below and use this value if it is less than the the Standard Calculation PPB.

Small Watershed Threshold (Appendix C):	**SWT**	414	acres
Project acreage:	**A**	1901.39	acres
Allowable increase in town's share of annual phosphorus load to lake (Appendix C):	**FC**	50.59	lbs P/year
Area available for development (Appendix C):	**AAD**	8282	acres
Ratio of A to AAD (R=A/AAD)	**R**	0.230	

Project Phosphorus Budget

If R < 0.5,	PPB = [(FC x R)/2] + [FC/4]	**PPB**	18.455	**lbs P/year**
If R> 0.5,	PPB = FC x R	**PPB**	11.615	**lbs P/year**

Date: 11/21/2023

Worksheet 2 - Pre-PPE and Post-PPE Calculations

Project name: Hartland Solar Project **Development type**: Solar Facility Sheet #: 1 of 1

Land Surface Type or Lot #(s) with description	Acres or # of lots	Export Coefficient from Table 3.1 Table 3.2	Pre-treatment Algal Av. P Export (lbs P/year)	Treatment Factor for BMP(s) from Chapter 4	Post-treatment Algal Av. P Export (lbs P/year)	Description of BMPs
Access Road (treated)	3.10	1.75	5.425	1	5.425	Vegetated Buffers
Access Road (untreated)	1.40	1.75	2.45	1	2.45	
Concrete Pads	0.11	1.75	0.1925	1	0.1925	
CMP Substation	1.47	1.75	2.5725	1	2.5725	Vegetated Buffers
		Total Pre-PPE (lbs P/year)	10.64	**Total PostPPE (lbs P/year)**	10.64	

Date: 11/21/2023

Worksheet 3 - Mitigation credit

Project name: Hartland Solar Project **Development type**: Solar Facility Sheet #: 1 of 1

Mitigation credit when a pre-existing source is being eliminated

Mitigation Source Area Land Use	Acres	Export Coefficient (lbs P/acre/year)	Modifier	Pre-treatment Historical P Export (lbs P/year)	Treatment Factor for Historical BMP(s) (1.0 if no BMPs)	Historical P Export (lbs P/year)			Mitigation Credit (lbs P/year)	Comments
				Total source elimination mitiagion credit (SEC)					**0**	**lbs P/year**

Mitigation credit when a pre-existing source is treated by a new BMP

Mitigation Source Area Land Use	Acres	Export Coefficient (lbs P/acre/year)	Modifier	Pre-treatment Historical P Export (lbs P/year)	Treatment Factor for Historical BMP(s) (1.0 if no BMPs)	Historical P Export (lbs P/year)		Treatment Factor for New BMP(s) Chapter 6	Mitigation Credit (lbs P/year)	Comments
				Total source treatment mitiagion credit (STC)					**0**	**lbs P/year**

TOTAL MITIGATION CREDIT (SEC + STC)	**0**	**lbs P/year**

Date: 11/21/2023

WORKSHEET 4 - PROJECT PHOSPHORUS EXPORT SUMMARY

Summarizing the project's algal available phosphorus export (PPE)

Project Name: Hartland Solar Project

Project Phosphorus Budget - Worksheet 1	**PPB**	18.46	lbs P/year
Total Pre-Treatment Phosphorus Export - Worksheet 2	**Pre-PPE**	10.64	lbs P/year
Total Post-Treatment Phosphorus Export - Worksheet 2	**Post-PPE**	10.64	lbs P/year
Total Phosphorus Mitigation Credit - Worksheet 3	**TMC**	0.00	lbs P/year
Project Phosphorus Export (Post-PPE - TMC)	**PPE**	10.64	lbs P/year

Is the Project Phosphorus Export ≤ the Project Phosphorus Budget? (PPE≤PPB)

*If **YES**, PPE is less than or equal to PPB and the project meets its phosphorus budget .* *If **NO,** PPE is greater than PPB, more reduction in phosphorus export is required or the payment of a compensation fee may be an option*	YES
The amount of phosphorus that needs further treatment or compensation	lbs P/year

Has Project Phosphorus Export been sufficiently reduced?
Is (Pre-PPE - Post-PPE)/Pre-PPE greater than 0.60?

*If **YES**, in some watersheds the compensation fee is an available option.* *If **NO**, more treatment must be provided. PPE must be further reduced.*	
*The post-treatment phosphorus export must be less than 40% of the pre-treatment export (Post-PPE < 0.4*Pre-PPE)*	%

If the project is located in a watershed that is eligible for a compensation fee (or is a residential subdivision with buffers), a compensation fee may be appropriate as follows:

If Project Export has been reduced by greater than 60% and less than 75%, $25,000 per pound minus $833 per 1% Percent Export	
If Project Export has been reduced by greater than 75%, $12,500 per pound minus $500 per 1% Project Export	

Date: 11/21/2023

Appendix H

Representative Deed Restriction

DECLARATION OF RESTRICTIONS
(Non-Wooded Meadow Buffer)

THIS DECLARATION OF RESTRICTIONS is made this _____day of _____, 20__, by _____, a _____with a mailing address of _____, (herein referred to as the "Declarant"), pursuant to a permit received from the Maine Department of Environmental Protection under the Site Location of Development Law (Site Law), to preserve buffer areas on a parcel of land in _____, _____ County, Maine described in the Deed to _____ dated _____ and recorded at the _____ County Registry of Deeds in Book ____, Page ____.

WHEREAS, the Declarant is the developer of a certain solar facility (the "Project") to be constructed on the above-referenced parcel of land in accordance with Maine Department of Environmental Protection Order #_____ dated _____ (the "Order");

WHEREAS, the Declarant is the owner of a leasehold interest pursuant a certain _____ dated _____, a Memorandum of which being recorded at the _____ County Registry of Deeds in Book _____ Page _____ (the "Project Lease"), pursuant to which Project Lease the Declarant controls certain real property necessary for the Project at the above-referenced parcel of land situated in _____, _____ County, Maine, herein referred to as the "property";

WHEREAS, Declarant desires to place certain restrictions, under the terms and conditions herein, over a portion of said real property (hereinafter referred to as the "Restricted Buffer Area") described in SCHEDULE A;

WHEREAS, pursuant to the Stormwater Management Law, 38 M.R.S. Section 420-D and Chapter 500 of rules promulgated by the Maine Board of Environmental Protection ("Stormwater Management Rules"), Declarant has agreed to impose certain restrictions on the Restricted Buffer Area as more particularly set forth herein and has agreed that these restrictions may be enforced by the Maine Department of Environmental Protection or any successor (hereinafter the "MDEP"),

NOW, THEREFORE, the Declarant hereby declares that the Restricted Buffer Area is and shall be held, transferred, sold, conveyed, occupied and maintained subject to the conditions and restrictions set forth herein during the term hereof. The Restrictions shall run with the Restricted Buffer Area and shall be binding on all parties having any right, title or interest in and to the Restricted Buffer Area, or any portion thereof, and their heirs, personal representatives, successors, and assigns. Any present or future owner or occupant of the Restricted Buffer Area or any portion thereof, by the acceptance of a deed of conveyance of all or part of the Covenant Area or an instrument conveying any interest therein, whether or not the deed or instrument shall so express, shall be deemed to have accepted the Restricted Buffer Area subject to the Restrictions and shall agree to be bound by, to comply with and to be subject to each and every one of the Restrictions hereinafter set forth.

1. **Restrictions on Restricted Buffer Area**. Unless the owner or occupant of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped for the term of this Declaration. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stite Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows.

a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material will be placed, stored or dumped on the Restricted Buffer Area, nor may the topography or the natural mineral soil of the area be altered or manipulated in any way, except to accommodate installation and maintenance of the Project;

b. A dense cover of grassy vegetation must be maintained over the Restricted Buffer Area, except that shrubs, trees and other woody vegetation may also be planted or allowed to grow in the area. The Restricted Buffer Area may not be maintained as a lawn or used as a pasture. If vegetation in the Restricted Buffer Area is mowed, it may be mown no more than two times per year.

c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for the solar panels, tracking systems posts, a sign, utility pole or fence (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors;

d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area, except for vehicles used in mowing and as may be required for installation and maintenance of the Project;

e. Any level lip spreader directing flow to the Restricted Buffer Area must be regularly inspected and adequately maintained to preserve the function of the level spreader.

Any activity on or use of the Restricted Buffer Area during the term of this Declaration that is inconsistent with the purpose of these Restrictions is prohibited. Any future alterations or changes in use of the Restricted Buffer Area during the term of this Declaration must receive prior approval in writing from the MDEP. The MDEP may approve such alterations and changes in use if such alterations and uses do not impede the stormwater control and treatment capability of the Restricted Buffer Area or if adequate and appropriate alternative means of stormwater control and treatment are provided.

2. **Enforcement**. The MDEP may enforce any of the Restrictions set forth in Section 1 above.

3. **Term; Binding Effect**. The term of this Declaration shall expire upon the decommissioning of the Project. The restrictions set forth herein shall be binding on any present or future owner or occupant of the Restricted Buffer Area during the term hereof. If the Restricted Buffer Area is at any time owned or leased by more than one owner/occupant, each owner/occupant shall be bound by the foregoing restrictions to the extent that any of the Restricted Buffer Area is included within such owner/occupant's property.

4. **Amendment**. Any provision contained in this Declaration may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the Lessee of the Project Lease and by the MDEP.

5. **Effective Provisions of Declaration**. Each provision of this Declaration, and any agreement, promise, covenant and undertaking to comply with each provision of this Declaration, shall be deemed a land use restriction running with the land as a burden and upon the title to the Restricted Buffer Area during the term hereof.

6. **Severability**. Invalidity or unenforceability of any provision of this Declaration in whole or in part shall not affect the validity or enforceability of any other provision or any valid and enforceable part of a provision of this Declaration.

7. **Governing Law**. This Declaration shall be governed by and interpreted in accordance with the laws of the State of Maine.

_____

STATE OF MAINE, _____, County, dated _____, 20__.

Personally appeared before me the above named _____, the _____ of said _____ who swore to the truth of the foregoing to the best of (his/her) knowledge, information and belief and acknowledged the foregoing instrument to be (his/her) free act and deed and the free act and deed of said company.

_____
Notary Public

_____

SCHEDULE A

[Plan/Description of Restricted Buffer Area]

Appendix I

Plunge Pool Level Lip Calculations

Hartland Solar Project
Somerset County, Maine

CULVERT LISTING

ID	Road ID	Station	Diameter (IN)	Slope (FT/FT)	Capacity (CFS)	Inflow (CFS)	Plunge Pool Level Lip Length (FT)
C1	0+00	0+10	24	0.02	34.66	27.57	--
C2	0+00	0+28	18	0.02	16.09	11.57	50
C3	Existing Road		24	0.04	49.02	40.77	165
C4	50+00	50+10	15	0.02	9.90	3.87	--
C5	100+00	100+22	15	0.03	12.12	9.17	--
C6	150+00	161+67	24	0.02	34.66	24.14	100
C7	150+00	155+00	15	0.02	9.90	7.03	--
C8	150+00	150+10	15	0.02	9.90	1.80	--
C9	200+00	200+10	18	0.02	16.09	10.88	--
C10	200+00	220+50	18	0.02	16.09	10.09	45
C11	250+00	257+22	18	0.02	16.09	11.84	50
C12	300+00	300+10	15	0.03	12.12	9.82	--
C13	350+00	350+10	15	0.02	9.90	3.18	--
C14	400+00	400+28	15	0.02	9.90	8.51	--
C15	400+00	407+08	15	0.02	9.90	7.41	--
C16	400+00	413+53	18	0.02	16.09	9.05	40
C17	450+00	450+10	15	0.02	9.90	1.97	--
C18	600+00	600+10	15	0.02	9.90	1.78	--
C19	550+00	550+10	15	0.03	12.12	7.12	--
C20	500+00	500+10	24	0.04	49.02	34.04	--
C21	950+00	958+12	18	0.02	16.09	9.61	40
C22	700+00	721+32	18	0.02	16.09	11.95	50
C23	700+00	717+32	18	0.02	16.09	9.13	40
C24	700+00	713+32	18	0.02	16.09	9.28	40
C25	700+00	709+32	18	0.02	16.09	9.25	40
C26	700+00	705+32	18	0.02	16.09	6.69	30
C27	700+00	700+10	18	0.02	16.09	15.80	--
C28	750+00	750+10	15	0.02	9.90	1.47	--
C29	750+00	757+67	18	0.02	16.09	15.60	65
C30	850+00	850+10	18	0.02	16.09	10.82	--
C31	900+00	900+10	15	0.02	9.90	2.91	--
C32	950+00	950+10	15	0.02	9.90	3.78	--
C33	1000+00	1000+10	15	0.02	9.90	5.65	--
C34	1000+00	1016+66	15	0.02	9.90	3.63	20
C35	1050+00	1050+10	15	0.02	9.90	8.11	--
C36	1100+00	1100+10	18	0.03	19.71	17.92	--
C37	1150+00	1150+10	18	0.02	16.09	11.25	--
C38	1150+00	1169+07	2 x 24	0.02	69.32	26.02	120
C39	Existing Road		15	0.02	9.90	5.39	25

1. IDs refer to culvert nodes in the Culverts and Plunge Pools HydroCAD Report
2. Culvert capacity represents the rational method flow full capacity of the pipe with mannings n = 0.012
3. Inflow values based on Culverts and Plunge Pools HydroCAD Report data for the 10-year storm event
4. Plunge pool level lip lengths are sized to be a minimum 1 foot in length per 0.25 cfs inflow

Date: 11/21/2023

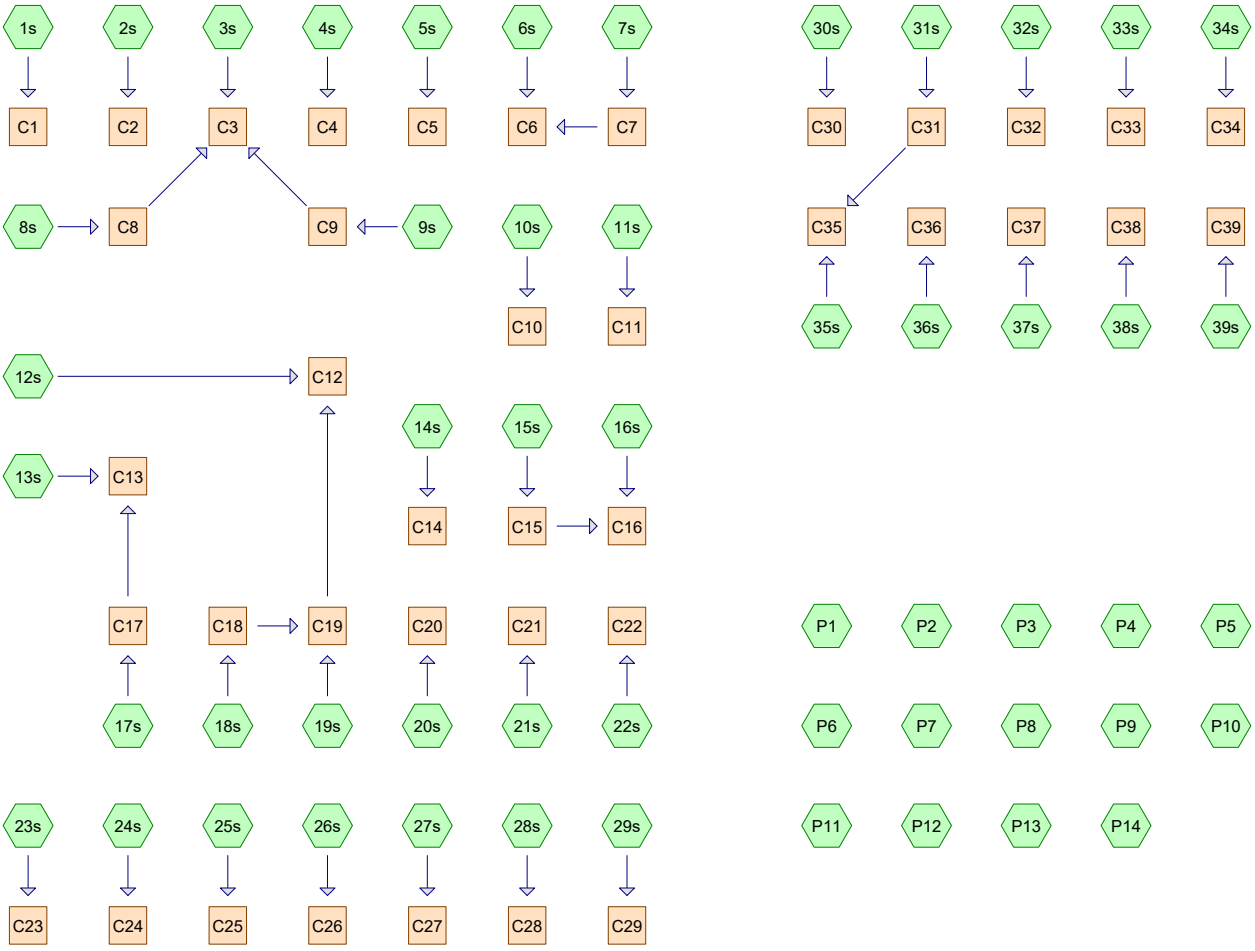
Hartland Solar Project
Somerset County, Maine

PLUNGE POOL AT CONVEYANCE DITCH END LISTING

ID	Road ID	Station	Inflow (cfs)	Plunge Pool Level Lip Length (ft)
P1	50+00	64+80	12.00	50
P2	50+00	57+15	9.62	40
P3	150+00	172+75	11.93	50
P4	200+00	225+10	10.75	45
P5	250+00	266+15	11.88	50
P6	400+00	420+80	7.10	30
P7	350+00	360+35	9.36	40
P8	300+00	307+55	11.26	50
P9	550+00	560+40	17.14	70
P10	600+00	608+75	9.33	40
P11	650+00	658+90	6.37	30
P12	750+00	762+92	3.71	15
P13	1100+00	1107+12	12.13	50
P14	1050+00	1056+45	5.54	25

1. IDs refer to plunge pool nodes in the Culverts and Plunge Pools HydroCAD Report
2. Inflow values based on Culverts and Plunge Pools HydroCAD Report for the 10-year storm event
3. Plunge pool level lip lengths are sized to be a minimum 1 foot in length per 0.25 cfs inflow

Date: 11/21/2023



Subcat Reach Pond Link

Routing Diagram for Culverts and Plunge Pools

Prepared by Tetra Tech Inc, Printed 11/21/2023

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	C1	344.00	343.40	30.0	0.0200	0.012	0.0	24.0	0.0
2	C10	408.00	407.40	30.0	0.0200	0.012	0.0	18.0	0.0
3	C11	428.00	427.40	30.0	0.0200	0.012	0.0	18.0	0.0
4	C12	413.00	412.10	30.0	0.0300	0.012	0.0	15.0	0.0
5	C13	468.00	467.40	30.0	0.0200	0.012	0.0	15.0	0.0
6	C14	468.00	467.40	30.0	0.0200	0.012	0.0	15.0	0.0
7	C15	466.00	465.40	30.0	0.0200	0.012	0.0	15.0	0.0
8	C16	438.00	437.40	30.0	0.0200	0.012	0.0	18.0	0.0
9	C17	483.00	482.40	30.0	0.0200	0.012	0.0	15.0	0.0
10	C18	478.00	477.40	30.0	0.0200	0.012	0.0	15.0	0.0
11	C19	438.00	437.10	30.0	0.0300	0.012	0.0	15.0	0.0
12	C2	362.00	361.40	30.0	0.0200	0.012	0.0	18.0	0.0
13	C20	308.00	306.80	30.0	0.0400	0.012	0.0	24.0	0.0
14	C21	308.00	307.40	30.0	0.0200	0.012	0.0	18.0	0.0
15	C22	418.00	417.40	30.0	0.0200	0.012	0.0	18.0	0.0
16	C23	426.00	425.40	30.0	0.0200	0.012	0.0	18.0	0.0
17	C24	436.00	435.40	30.0	0.0200	0.012	0.0	18.0	0.0
18	C25	452.00	451.40	30.0	0.0200	0.012	0.0	18.0	0.0
19	C26	460.00	459.40	30.0	0.0200	0.012	0.0	18.0	0.0
20	C27	464.00	463.40	30.0	0.0200	0.012	0.0	18.0	0.0
21	C28	462.00	461.40	30.0	0.0200	0.012	0.0	15.0	0.0
22	C29	440.00	439.40	30.0	0.0200	0.012	0.0	18.0	0.0
23	C3	376.00	374.80	30.0	0.0400	0.012	0.0	24.0	0.0
24	C30	414.00	413.40	30.0	0.0200	0.012	0.0	18.0	0.0
25	C31	444.00	443.40	30.0	0.0200	0.012	0.0	15.0	0.0
26	C32	382.00	381.40	30.0	0.0200	0.012	0.0	15.0	0.0
27	C33	379.00	378.40	30.0	0.0200	0.012	0.0	15.0	0.0
28	C34	376.00	375.40	30.0	0.0200	0.012	0.0	15.0	0.0
29	C35	428.00	427.40	30.0	0.0200	0.012	0.0	15.0	0.0
30	C36	418.00	417.10	30.0	0.0300	0.012	0.0	18.0	0.0
31	C37	384.00	383.40	30.0	0.0200	0.012	0.0	18.0	0.0
32	C38	376.00	373.60	120.0	0.0200	0.012	0.0	24.0	0.0
33	C39	465.00	464.20	40.0	0.0200	0.012	0.0	15.0	0.0
34	C4	380.00	379.40	30.0	0.0200	0.012	0.0	15.0	0.0
35	C5	386.00	385.10	30.0	0.0300	0.012	0.0	15.0	0.0
36	C6	392.00	390.80	60.0	0.0200	0.012	0.0	24.0	0.0
37	C7	408.00	406.80	60.0	0.0200	0.012	0.0	15.0	0.0
38	C8	416.00	415.40	30.0	0.0200	0.012	0.0	15.0	0.0
39	C9	430.00	429.40	30.0	0.0200	0.012	0.0	18.0	0.0

Summary for Subcatchment 1s:

Runoff = 27.57 cfs @ 12.51 hrs, Volume= 3.831 af, Depth= 1.78"
Routed to Reach C1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
25.638	78	Meadow, non-grazed, HSG D
0.248	96	Gravel surface, HSG D
25.886	78	Weighted Average
25.886		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
39.6	2,633	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.8	2,675	Total			

Summary for Subcatchment 2s:

Runoff = 11.57 cfs @ 12.74 hrs, Volume= 2.053 af, Depth= 1.78"
Routed to Reach C2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
13.869	78	Meadow, non-grazed, HSG D
13.869		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	66	0.0250	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
59.3	3,407	0.0187	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
69.5	3,473	Total			

Summary for Subcatchment 3s:

Runoff = 31.03 cfs @ 12.52 hrs, Volume= 4.456 af, Depth= 1.78"
Routed to Reach C3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
29.587	78	Meadow, non-grazed, HSG D
0.520	96	Gravel surface, HSG D
30.107	78	Weighted Average
30.107		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
42.3	2,514	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
52.4	2,597	Total			

Summary for Subcatchment 4s:

Runoff = 3.87 cfs @ 11.97 hrs, Volume= 0.181 af, Depth= 2.08"
Routed to Reach C4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (sf)	CN	Description
36,361	78	Meadow, non-grazed, HSG D
9,110	96	Gravel surface, HSG D
45,471	82	Weighted Average
45,471		100.00% Pervious Area

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

Summary for Subcatchment 5s:

Runoff = 9.17 cfs @ 12.24 hrs, Volume= 0.870 af, Depth= 1.85"
Routed to Reach C5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
5.366	78	Meadow, non-grazed, HSG D
0.275	96	Gravel surface, HSG D
5.641	79	Weighted Average
5.641		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
18.9	1,253	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
29.0	1,325	Total			

Summary for Subcatchment 6s:

Runoff = 19.04 cfs @ 12.26 hrs, Volume= 1.887 af, Depth= 1.78"
Routed to Reach C6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
12.751	78	Meadow, non-grazed, HSG D
12.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
20.8	1,412	0.0262	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.9	1,484	Total			

Summary for Subcatchment 7s:

Runoff = 7.03 cfs @ 12.15 hrs, Volume= 0.560 af, Depth= 1.78"
Routed to Reach C7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
3.785	78	Meadow, non-grazed, HSG D
3.785		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
11.9	844	0.0284	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.0	916	Total			

Summary for Subcatchment 8s:

Runoff = 1.80 cfs @ 12.03 hrs, Volume= 0.102 af, Depth= 2.08"
Routed to Reach C8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
0.466	78	Meadow, non-grazed, HSG D
0.121	96	Gravel surface, HSG D
0.587	82	Weighted Average
0.587		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	20	0.0250	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72"
7.3	485	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.2	505	Total			

Summary for Subcatchment 9s:

Runoff = 10.88 cfs @ 12.36 hrs, Volume= 1.265 af, Depth= 1.85"
Routed to Reach C9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
7.716	78	Meadow, non-grazed, HSG D
0.489	96	Gravel surface, HSG D
8.205	79	Weighted Average
8.205		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
29.2	2,125	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
39.3	2,197	Total			

Summary for Subcatchment 10s:

Runoff = 10.09 cfs @ 12.39 hrs, Volume= 1.245 af, Depth= 1.78"
Routed to Reach C10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
8.414	78	Meadow, non-grazed, HSG D
8.414		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
32.3	2,164	0.0254	1.12		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
42.4	2,236	Total			

Summary for Subcatchment 11s:

Runoff = 11.84 cfs @ 12.15 hrs, Volume= 0.943 af, Depth= 1.78"
Routed to Reach C11 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
6.236	78	Meadow, non-grazed, HSG D
0.134	96	Gravel surface, HSG D
6.370	78	Weighted Average
6.370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
11.9	899	0.0322	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.0	982	Total			

Summary for Subcatchment 12s:

Runoff = 2.70 cfs @ 12.16 hrs, Volume= 0.218 af, Depth= 2.00"
Routed to Reach C12 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
1.088	78	Meadow, non-grazed, HSG D
0.217	96	Gravel surface, HSG D
1.305	81	Weighted Average
1.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	78	0.0350	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
12.5	832	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.6	910	Total			

Summary for Subcatchment 13s:

Runoff = 2.72 cfs @ 12.21 hrs, Volume= 0.246 af, Depth= 2.00"
Routed to Reach C13 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
1.261	78	Meadow, non-grazed, HSG D
0.212	96	Gravel surface, HSG D
1.473	81	Weighted Average
1.473		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	42	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
17.2	884	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	926	Total			

Summary for Subcatchment 14s:

Runoff = 8.51 cfs @ 12.35 hrs, Volume= 0.975 af, Depth= 1.78"
Routed to Reach C14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
6.543	78	Meadow, non-grazed, HSG D
0.045	96	Gravel surface, HSG D
6.588	78	Weighted Average
6.588		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
28.2	1,299	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
38.2	1,328	Total			

Summary for Subcatchment 15s:

Runoff = 7.41 cfs @ 12.27 hrs, Volume= 0.752 af, Depth= 1.78"
Routed to Reach C15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
3.984	78	Meadow, non-grazed, HSG D
1.084	77	Woods, Good, HSG D
0.014	96	Gravel surface, HSG D
5.082	78	Weighted Average
5.082		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
21.9	1,172	0.0162	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
31.9	1,201	Total			

Summary for Subcatchment 16s:

Runoff = 2.57 cfs @ 12.10 hrs, Volume= 0.180 af, Depth= 1.78"
Routed to Reach C16 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
1.211	78	Meadow, non-grazed, HSG D
0.008	96	Gravel surface, HSG D
1.219	78	Weighted Average
1.219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
7.6	625	0.0384	1.37		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	708	Total			

Summary for Subcatchment 17s:

Runoff = 1.97 cfs @ 11.97 hrs, Volume= 0.092 af, Depth= 1.93"
Routed to Reach C17 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
0.500	78	Meadow, non-grazed, HSG D
0.072	96	Gravel surface, HSG D
0.572	80	Weighted Average
0.572		100.00% Pervious Area

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

Summary for Subcatchment 18s:

Runoff = 1.78 cfs @ 12.04 hrs, Volume= 0.103 af, Depth= 1.93"
Routed to Reach C18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
0.577	78	Meadow, non-grazed, HSG D
0.065	96	Gravel surface, HSG D
0.642	80	Weighted Average
0.642		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	59	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
1.9	115	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.0	174	Total			

Summary for Subcatchment 19s:

Runoff = 6.18 cfs @ 12.20 hrs, Volume= 0.531 af, Depth= 1.85"
Routed to Reach C19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (sf)	CN	Description
140,397	78	Meadow, non-grazed, HSG D
9,540	96	Gravel surface, HSG D
149,937	79	Weighted Average
149,937		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	78	0.0350	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
14.8	980	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	1,058	Total			

Summary for Subcatchment 20s:

Runoff = 34.04 cfs @ 12.23 hrs, Volume= 3.137 af, Depth= 1.78"
Routed to Reach C20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
20.767	78	Meadow, non-grazed, HSG D
0.430	96	Gravel surface, HSG D
21.197	78	Weighted Average
21.197		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**
17.6	1,170	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.6	1,170	Total			

Summary for Subcatchment 21s:

Runoff = 9.61 cfs @ 12.28 hrs, Volume= 0.987 af, Depth= 1.78"
Routed to Reach C21 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
6.668	78	Meadow, non-grazed, HSG D
6.668		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
22.5	761	0.0065	0.56		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
32.5	790	Total			

Summary for Subcatchment 22s:

Runoff = 11.95 cfs @ 12.35 hrs, Volume= 1.377 af, Depth= 1.78"
Routed to Reach C22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
9.303	78	Meadow, non-grazed, HSG D
9.303		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
28.3	2,092	0.0310	1.23		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
38.3	2,121	Total			

Summary for Subcatchment 23s:

Runoff = 9.13 cfs @ 12.28 hrs, Volume= 0.942 af, Depth= 1.78"
Routed to Reach C23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
6.338	78	Meadow, non-grazed, HSG D
0.025	96	Gravel surface, HSG D
6.363	78	Weighted Average
6.363		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
22.8	1,723	0.0323	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
32.8	1,752	Total			

Summary for Subcatchment 24s:

Runoff = 9.28 cfs @ 12.23 hrs, Volume= 0.892 af, Depth= 1.78"
Routed to Reach C24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
6.027	78	Meadow, non-grazed, HSG D
6.027		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
19.5	1,457	0.0315	1.24		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
29.5	1,486	Total			

Summary for Subcatchment 25s:

Runoff = 9.24 cfs @ 12.24 hrs, Volume= 0.893 af, Depth= 1.78"
Routed to Reach C25 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
6.031	78	Meadow, non-grazed, HSG D
6.031		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
19.6	1,329	0.0261	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
29.6	1,358	Total			

Summary for Subcatchment 26s:

Runoff = 6.69 cfs @ 12.16 hrs, Volume= 0.543 af, Depth= 1.78"
Routed to Reach C26 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
3.672	78	Meadow, non-grazed, HSG D
3.672		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	59	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
12.5	818	0.0244	1.09		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.6	877	Total			

Summary for Subcatchment 27s:

Runoff = 15.80 cfs @ 12.23 hrs, Volume= 1.466 af, Depth= 1.78"
Routed to Reach C27 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
9.813	78	Meadow, non-grazed, HSG D
0.094	96	Gravel surface, HSG D
9.907	78	Weighted Average
9.907		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
18.0	925	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
28.0	954	Total			

Summary for Subcatchment 28s:

Runoff = 1.47 cfs @ 11.97 hrs, Volume= 0.069 af, Depth= 2.08"
Routed to Reach C28 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
0.318	78	Meadow, non-grazed, HSG D
0.078	96	Gravel surface, HSG D
0.396	82	Weighted Average
0.396		100.00% Pervious Area

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

Summary for Subcatchment 29s:

Runoff = 15.60 cfs @ 12.15 hrs, Volume= 1.236 af, Depth= 1.78"
Routed to Reach C29 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
8.349	78	Meadow, non-grazed, HSG D
8.349		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	59	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
11.6	850	0.0305	1.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
21.7	909	Total			

Summary for Subcatchment 30s:

Runoff = 10.82 cfs @ 12.20 hrs, Volume= 0.944 af, Depth= 1.85"
Routed to Reach C30 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
5.863	78	Meadow, non-grazed, HSG D
0.260	96	Gravel surface, HSG D
6.123	79	Weighted Average
6.123		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
15.5	1,030	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
25.6	1,113	Total			

Summary for Subcatchment 31s:

Runoff = 2.91 cfs @ 12.14 hrs, Volume= 0.227 af, Depth= 2.08"
Routed to Reach C31 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
1.040	78	Meadow, non-grazed, HSG D
0.267	96	Gravel surface, HSG D
1.307	82	Weighted Average
1.307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	20	0.0400	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72"
18.3	1,085	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
21.5	1,105	Total			

Summary for Subcatchment 32s:

Runoff = 3.78 cfs @ 12.19 hrs, Volume= 0.325 af, Depth= 1.85"
Routed to Reach C32 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
2.016	78	Meadow, non-grazed, HSG D
0.094	96	Gravel surface, HSG D
2.110	79	Weighted Average
2.110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
15.0	445	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
25.0	474	Total			

Summary for Subcatchment 33s:

Runoff = 5.65 cfs @ 12.17 hrs, Volume= 0.471 af, Depth= 1.85"
Routed to Reach C33 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
2.900	78	Meadow, non-grazed, HSG D
0.153	96	Gravel surface, HSG D
3.053	79	Weighted Average
3.053		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
13.7	408	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
23.7	437	Total			

Summary for Subcatchment 34s:

Runoff = 3.63 cfs @ 12.08 hrs, Volume= 0.236 af, Depth= 1.78"
Routed to Reach C34 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
1.597	78	Meadow, non-grazed, HSG D
1.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
5.3	246	0.0121	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.3	275	Total			

Summary for Subcatchment 35s:

Runoff = 5.26 cfs @ 12.11 hrs, Volume= 0.374 af, Depth= 1.85"
Routed to Reach C35 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
2.250	78	Meadow, non-grazed, HSG D
0.176	96	Gravel surface, HSG D
2.426	79	Weighted Average
2.426		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	30	0.0200	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72"
12.2	725	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
18.1	755	Total			

Summary for Subcatchment 36s:

Runoff = 17.92 cfs @ 12.42 hrs, Volume= 2.326 af, Depth= 1.85"
Routed to Reach C36 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
14.536	78	Meadow, non-grazed, HSG D
0.549	96	Gravel surface, HSG D
15.085	79	Weighted Average
15.085		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	59	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
35.5	2,359	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
45.6	2,418	Total			

Summary for Subcatchment 37s:

Runoff = 11.25 cfs @ 12.10 hrs, Volume= 0.787 af, Depth= 1.70"
Routed to Reach C37 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
0.956	78	Meadow, non-grazed, HSG D
4.586	77	Woods, Good, HSG D
5.542	77	Weighted Average
5.542		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	56	0.0500	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
7.2	572	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	628	Total			

Summary for Subcatchment 38s:

Runoff = 26.02 cfs @ 12.26 hrs, Volume= 2.562 af, Depth= 1.70"
Routed to Reach C38 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
0.366	78	Meadow, non-grazed, HSG D
17.684	77	Woods, Good, HSG D
18.050	77	Weighted Average
18.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	40	0.0250	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.72" Using McCuen-Spiess flow length
20.2	1,354	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.4	1,394	Total			

Summary for Subcatchment 39s:

Runoff = 5.39 cfs @ 12.18 hrs, Volume= 0.460 af, Depth= 1.93"
Routed to Reach C39 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
2.547	78	Meadow, non-grazed, HSG D
0.319	96	Gravel surface, HSG D
2.866	80	Weighted Average
2.866		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
14.7	1,066	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.7	1,095	Total			

Summary for Subcatchment P1:

Runoff = 12.00 cfs @ 12.14 hrs, Volume= 0.938 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
6.185	78	Meadow, non-grazed, HSG D
0.150	96	Gravel surface, HSG D
6.335	78	Weighted Average
6.335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	78	0.0350	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
11.2	883	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
21.3	961	Total			

Summary for Subcatchment P10:

Runoff = 9.33 cfs @ 12.11 hrs, Volume= 0.675 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
4.500	78	Meadow, non-grazed, HSG D
0.060	96	Gravel surface, HSG D
4.560	78	Weighted Average
4.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
8.5	712	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
18.6	795	Total			

Summary for Subcatchment P11:

Runoff = 6.37 cfs @ 12.14 hrs, Volume= 0.489 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
3.306	78	Meadow, non-grazed, HSG D
3.306		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
10.6	773	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.6	802	Total			

Summary for Subcatchment P12:

Runoff = 3.71 cfs @ 12.08 hrs, Volume= 0.247 af, Depth= 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
1.531	78	Meadow, non-grazed, HSG D
0.072	96	Gravel surface, HSG D
1.603	79	Weighted Average
1.603		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	70	0.0280	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
5.9	498	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.1	568	Total			

Summary for Subcatchment P13:

Runoff = 12.13 cfs @ 12.22 hrs, Volume= 1.115 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
7.531	78	Meadow, non-grazed, HSG D
7.531		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
17.4	1,265	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.5	1,337	Total			

Summary for Subcatchment P14:

Runoff = 5.54 cfs @ 12.14 hrs, Volume= 0.433 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
2.924	78	Meadow, non-grazed, HSG D
2.924		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
11.1	805	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
21.2	877	Total			

Summary for Subcatchment P2:

Runoff = 9.62 cfs @ 12.14 hrs, Volume= 0.749 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
5.061	78	Meadow, non-grazed, HSG D
5.061		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	51	0.0150	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
11.0	801	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
21.1	852	Total			

Summary for Subcatchment P3:

Runoff = 11.93 cfs @ 12.28 hrs, Volume= 1.265 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
8.548	78	Meadow, non-grazed, HSG D
8.548		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	66	0.0250	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
23.8	1,581	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
34.0	1,647	Total			

Summary for Subcatchment P4:

Runoff = 10.75 cfs @ 12.43 hrs, Volume= 1.342 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
9.070	78	Meadow, non-grazed, HSG D
9.070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
32.8	2,180	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
42.9	2,252	Total			

Summary for Subcatchment P5:

Runoff = 11.88 cfs @ 12.21 hrs, Volume= 1.087 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
7.310	78	Meadow, non-grazed, HSG D
0.033	96	Gravel surface, HSG D
7.343	78	Weighted Average
7.343		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
17.3	1,453	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	1,536	Total			

Summary for Subcatchment P6:

Runoff = 7.10 cfs @ 12.22 hrs, Volume= 0.671 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
4.500	78	Meadow, non-grazed, HSG D
0.036	96	Gravel surface, HSG D
4.536	78	Weighted Average
4.536		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
18.6	1,352	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
28.7	1,435	Total			

Summary for Subcatchment P7:

Runoff = 9.36 cfs @ 12.37 hrs, Volume= 1.100 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
7.384	78	Meadow, non-grazed, HSG D
0.046	96	Gravel surface, HSG D
7.430	78	Weighted Average
7.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	29	0.0050	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
28.2	1,299	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	648	0.0300	7.79	93.52	**Channel Flow,** Area= 12.0 sf Perim= 11.0' r= 1.09' n= 0.035 Earth, dense weeds
39.6	1,976	Total			

Summary for Subcatchment P8:

Runoff = 11.26 cfs @ 12.23 hrs, Volume= 1.074 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
7.235	78	Meadow, non-grazed, HSG D
0.023	96	Gravel surface, HSG D
7.258	78	Weighted Average
7.258		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	72	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
19.1	1,345	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
29.2	1,417	Total			

Summary for Subcatchment P9:

Runoff = 17.14 cfs @ 12.23 hrs, Volume= 1.580 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.86"

Area (ac)	CN	Description
10.600	78	Meadow, non-grazed, HSG D
0.075	96	Gravel surface, HSG D
10.675	78	Weighted Average
10.675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	83	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.72" Using McCuen-Spiess flow length
17.5	1,473	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.6	1,556	Total			

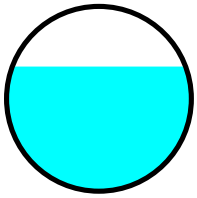
Summary for Reach C1:

Inflow Area = 25.886 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 27.57 cfs @ 12.51 hrs, Volume= 3.831 af
Outflow = 27.56 cfs @ 12.51 hrs, Volume= 3.831 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.24 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 5.21 fps, Avg. Travel Time= 0.1 min

Peak Storage= 68 cf @ 12.51 hrs
Average Depth at Peak Storage= 1.35' , Surface Width= 1.88'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 34.66 cfs

24.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 344.00', Outlet Invert= 343.40'



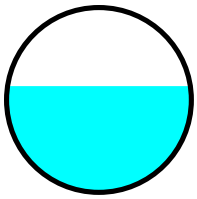
Summary for Reach C10:

Inflow Area = 8.414 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 10.09 cfs @ 12.39 hrs, Volume= 1.245 af
Outflow = 10.09 cfs @ 12.40 hrs, Volume= 1.245 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.62 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.94 fps, Avg. Travel Time= 0.1 min

Peak Storage= 31 cf @ 12.39 hrs
Average Depth at Peak Storage= 0.86' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 408.00', Outlet Invert= 407.40'



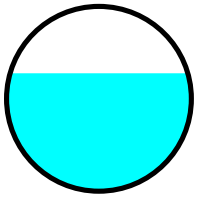
Summary for Reach C11:

Inflow Area = 6.370 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 11.84 cfs @ 12.15 hrs, Volume= 0.943 af
Outflow = 11.83 cfs @ 12.15 hrs, Volume= 0.943 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.96 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.75 fps, Avg. Travel Time= 0.1 min

Peak Storage= 36 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.96' , Surface Width= 1.44'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 428.00', Outlet Invert= 427.40'



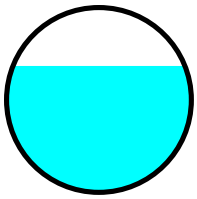
Summary for Reach C12:

Inflow Area = 5.389 ac, 0.00% Impervious, Inflow Depth = 1.90" for 10-Year event
Inflow = 9.82 cfs @ 12.15 hrs, Volume= 0.852 af
Outflow = 9.82 cfs @ 12.15 hrs, Volume= 0.852 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 11.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 4.15 fps, Avg. Travel Time= 0.1 min

Peak Storage= 27 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.85' , Surface Width= 1.16'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 12.12 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0300 '/'
Inlet Invert= 413.00', Outlet Invert= 412.10'



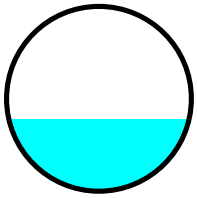
Summary for Reach C13:

Inflow Area = 2.045 ac, 0.00% Impervious, Inflow Depth = 1.98" for 10-Year event
Inflow = 3.18 cfs @ 12.00 hrs, Volume= 0.338 af
Outflow = 3.18 cfs @ 12.00 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.18 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.76 fps, Avg. Travel Time= 0.2 min

Peak Storage= 13 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.49' , Surface Width= 1.22'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 468.00', Outlet Invert= 467.40'



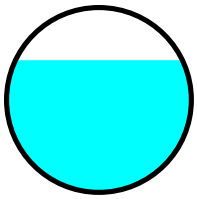
Summary for Reach C14:

Inflow Area = 6.588 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 8.51 cfs @ 12.35 hrs, Volume= 0.975 af
Outflow = 8.51 cfs @ 12.35 hrs, Volume= 0.975 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.07 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.77 fps, Avg. Travel Time= 0.1 min

Peak Storage= 28 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.89' , Surface Width= 1.13'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 468.00', Outlet Invert= 467.40'



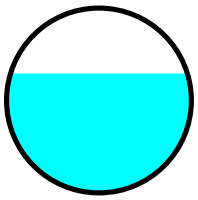
Summary for Reach C15:

Inflow Area = 5.082 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 7.41 cfs @ 12.27 hrs, Volume= 0.752 af
Outflow = 7.41 cfs @ 12.27 hrs, Volume= 0.752 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C16 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.85 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.53 fps, Avg. Travel Time= 0.1 min

Peak Storage= 25 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.81' , Surface Width= 1.20'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 466.00', Outlet Invert= 465.40'



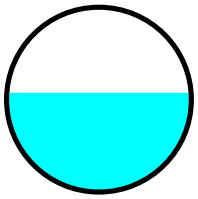
Summary for Reach C16:

Inflow Area = 6.301 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 9.05 cfs @ 12.23 hrs, Volume= 0.933 af
Outflow = 9.04 cfs @ 12.23 hrs, Volume= 0.933 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.37 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.68 fps, Avg. Travel Time= 0.1 min

Peak Storage= 29 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.80' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 438.00', Outlet Invert= 437.40'



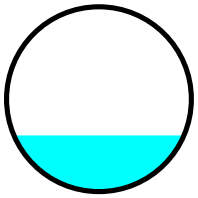
Summary for Reach C17:

Inflow Area = 0.572 ac, 0.00% Impervious, Inflow Depth = 1.93" for 10-Year event
Inflow = 1.97 cfs @ 11.97 hrs, Volume= 0.092 af
Outflow = 1.97 cfs @ 11.98 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C13 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.28 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.95 fps, Avg. Travel Time= 0.3 min

Peak Storage= 9 cf @ 11.98 hrs
Average Depth at Peak Storage= 0.38' , Surface Width= 1.15'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 483.00', Outlet Invert= 482.40'



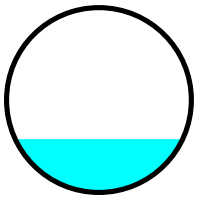
Summary for Reach C18:

Inflow Area = 0.642 ac, 0.00% Impervious, Inflow Depth = 1.93" for 10-Year event
Inflow = 1.78 cfs @ 12.04 hrs, Volume= 0.103 af
Outflow = 1.78 cfs @ 12.04 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C19 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.11 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.00 fps, Avg. Travel Time= 0.2 min

Peak Storage= 9 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.36' , Surface Width= 1.13'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 478.00', Outlet Invert= 477.40'



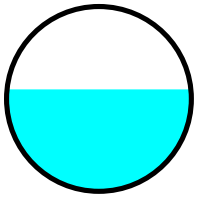
Summary for Reach C19:

Inflow Area = 4.084 ac, 0.00% Impervious, Inflow Depth = 1.86" for 10-Year event
Inflow = 7.12 cfs @ 12.15 hrs, Volume= 0.634 af
Outflow = 7.12 cfs @ 12.15 hrs, Volume= 0.634 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C12 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.27 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.85 fps, Avg. Travel Time= 0.1 min

Peak Storage= 21 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.69' , Surface Width= 1.24'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 12.12 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0300 '/'
Inlet Invert= 438.00', Outlet Invert= 437.10'



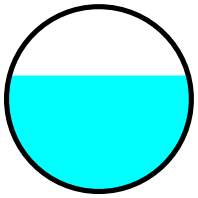
Summary for Reach C2:

Inflow Area = 13.869 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 11.57 cfs @ 12.74 hrs, Volume= 2.053 af
Outflow = 11.56 cfs @ 12.75 hrs, Volume= 2.053 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.91 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.37 fps, Avg. Travel Time= 0.1 min

Peak Storage= 35 cf @ 12.75 hrs
Average Depth at Peak Storage= 0.94' , Surface Width= 1.45'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 362.00', Outlet Invert= 361.40'



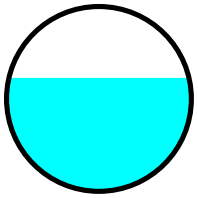
Summary for Reach C20:

Inflow Area = 21.197 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 34.04 cfs @ 12.23 hrs, Volume= 3.137 af
Outflow = 34.03 cfs @ 12.23 hrs, Volume= 3.137 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 16.85 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 6.52 fps, Avg. Travel Time= 0.1 min

Peak Storage= 61 cf @ 12.23 hrs
Average Depth at Peak Storage= 1.23' , Surface Width= 1.95'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 49.02 cfs

24.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0400 '/'
Inlet Invert= 308.00', Outlet Invert= 306.80'



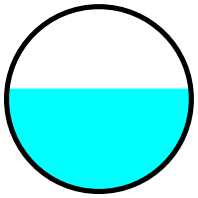
Summary for Reach C21:

Inflow Area = 6.668 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 9.61 cfs @ 12.28 hrs, Volume= 0.987 af
Outflow = 9.61 cfs @ 12.28 hrs, Volume= 0.987 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.51 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.74 fps, Avg. Travel Time= 0.1 min

Peak Storage= 30 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.83' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 308.00', Outlet Invert= 307.40'



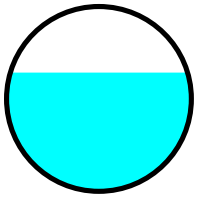
Summary for Reach C22:

Inflow Area = 9.303 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 11.95 cfs @ 12.35 hrs, Volume= 1.377 af
Outflow = 11.95 cfs @ 12.35 hrs, Volume= 1.377 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.97 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.08 fps, Avg. Travel Time= 0.1 min

Peak Storage= 36 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.96' , Surface Width= 1.44'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 418.00', Outlet Invert= 417.40'



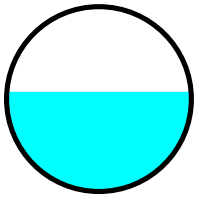
Summary for Reach C23:

Inflow Area = 6.363 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 9.13 cfs @ 12.28 hrs, Volume= 0.942 af
Outflow = 9.12 cfs @ 12.28 hrs, Volume= 0.942 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.39 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.69 fps, Avg. Travel Time= 0.1 min

Peak Storage= 29 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.81' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 426.00', Outlet Invert= 425.40'



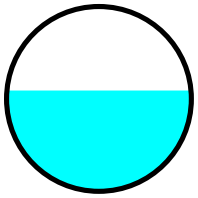
Summary for Reach C24:

Inflow Area = 6.027 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 9.28 cfs @ 12.23 hrs, Volume= 0.892 af
Outflow = 9.27 cfs @ 12.23 hrs, Volume= 0.892 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.43 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.65 fps, Avg. Travel Time= 0.1 min

Peak Storage= 30 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.82' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 436.00', Outlet Invert= 435.40'



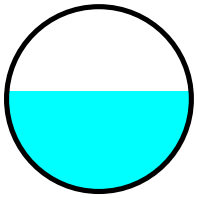
Summary for Reach C25:

Inflow Area = 6.031 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 9.24 cfs @ 12.24 hrs, Volume= 0.893 af
Outflow = 9.24 cfs @ 12.24 hrs, Volume= 0.893 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.42 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.65 fps, Avg. Travel Time= 0.1 min

Peak Storage= 29 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.82' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 452.00', Outlet Invert= 451.40'



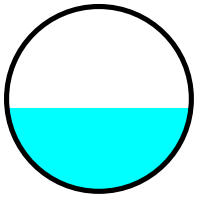
Summary for Reach C26:

Inflow Area = 3.672 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 6.69 cfs @ 12.16 hrs, Volume= 0.543 af
Outflow = 6.69 cfs @ 12.16 hrs, Volume= 0.543 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.69 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.19 fps, Avg. Travel Time= 0.2 min

Peak Storage= 23 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 460.00', Outlet Invert= 459.40'



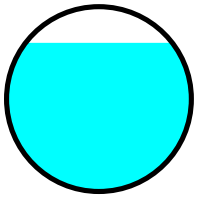
Summary for Reach C27:

Inflow Area = 9.907 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 15.80 cfs @ 12.23 hrs, Volume= 1.466 af
Outflow = 15.79 cfs @ 12.23 hrs, Volume= 1.466 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.38 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 4.22 fps, Avg. Travel Time= 0.1 min

Peak Storage= 46 cf @ 12.23 hrs
Average Depth at Peak Storage= 1.21' , Surface Width= 1.19'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 464.00', Outlet Invert= 463.40'



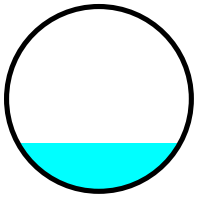
Summary for Reach C28:

Inflow Area = 0.396 ac, 0.00% Impervious, Inflow Depth = 2.08" for 10-Year event
Inflow = 1.47 cfs @ 11.97 hrs, Volume= 0.069 af
Outflow = 1.47 cfs @ 11.98 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.78 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.75 fps, Avg. Travel Time= 0.3 min

Peak Storage= 8 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 1.10'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 462.00', Outlet Invert= 461.40'



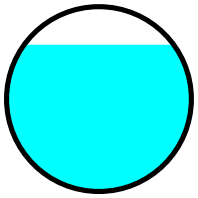
Summary for Reach C29:

Inflow Area = 8.349 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 15.60 cfs @ 12.15 hrs, Volume= 1.236 af
Outflow = 15.59 cfs @ 12.15 hrs, Volume= 1.236 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.38 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 4.06 fps, Avg. Travel Time= 0.1 min

Peak Storage= 45 cf @ 12.15 hrs
Average Depth at Peak Storage= 1.19' , Surface Width= 1.22'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 440.00', Outlet Invert= 439.40'



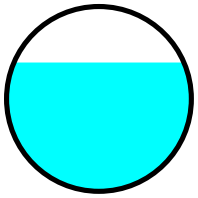
Summary for Reach C3:

Inflow Area = 38.899 ac, 0.00% Impervious, Inflow Depth = 1.80" for 10-Year event
Inflow = 40.77 cfs @ 12.50 hrs, Volume= 5.823 af
Outflow = 40.77 cfs @ 12.49 hrs, Volume= 5.823 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 17.45 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 7.12 fps, Avg. Travel Time= 0.1 min

Peak Storage= 70 cf @ 12.49 hrs
Average Depth at Peak Storage= 1.39' , Surface Width= 1.84'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 49.02 cfs

24.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0400 '/'
Inlet Invert= 376.00', Outlet Invert= 374.80'



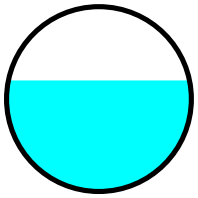
Summary for Reach C30:

Inflow Area = 6.123 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 10.82 cfs @ 12.20 hrs, Volume= 0.944 af
Outflow = 10.81 cfs @ 12.20 hrs, Volume= 0.944 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.77 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.70 fps, Avg. Travel Time= 0.1 min

Peak Storage= 33 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.90' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 414.00', Outlet Invert= 413.40'



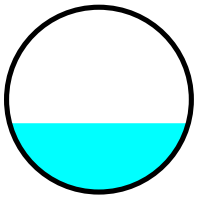
Summary for Reach C31:

Inflow Area = 1.307 ac, 0.00% Impervious, Inflow Depth = 2.08" for 10-Year event
Inflow = 2.91 cfs @ 12.14 hrs, Volume= 0.227 af
Outflow = 2.90 cfs @ 12.15 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.2 min
Routed to Reach C35 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.01 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.45 fps, Avg. Travel Time= 0.2 min

Peak Storage= 12 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.46' , Surface Width= 1.21'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 444.00', Outlet Invert= 443.40'



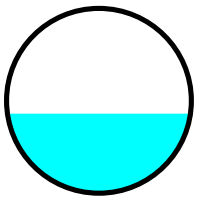
Summary for Reach C32:

Inflow Area = 2.110 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 3.78 cfs @ 12.19 hrs, Volume= 0.325 af
Outflow = 3.78 cfs @ 12.19 hrs, Volume= 0.325 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.52 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.78 fps, Avg. Travel Time= 0.2 min

Peak Storage= 15 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.54' , Surface Width= 1.24'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 382.00', Outlet Invert= 381.40'



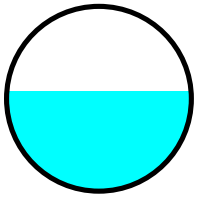
Summary for Reach C33:

Inflow Area = 3.053 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 5.65 cfs @ 12.17 hrs, Volume= 0.471 af
Outflow = 5.65 cfs @ 12.17 hrs, Volume= 0.471 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.33 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.10 fps, Avg. Travel Time= 0.2 min

Peak Storage= 20 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 379.00', Outlet Invert= 378.40'



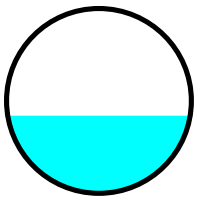
Summary for Reach C34:

Inflow Area = 1.597 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 3.63 cfs @ 12.08 hrs, Volume= 0.236 af
Outflow = 3.63 cfs @ 12.08 hrs, Volume= 0.236 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.44 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.59 fps, Avg. Travel Time= 0.2 min

Peak Storage= 15 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.52' , Surface Width= 1.23'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 376.00', Outlet Invert= 375.40'



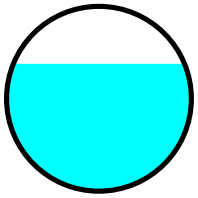
Summary for Reach C35:

Inflow Area = 3.733 ac, 0.00% Impervious, Inflow Depth = 1.93" for 10-Year event
Inflow = 8.11 cfs @ 12.12 hrs, Volume= 0.601 af
Outflow = 8.11 cfs @ 12.12 hrs, Volume= 0.601 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.00 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.23 fps, Avg. Travel Time= 0.2 min

Peak Storage= 27 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.86' , Surface Width= 1.16'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 428.00', Outlet Invert= 427.40'



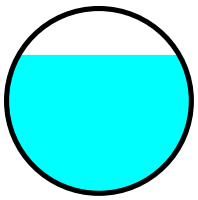
Summary for Reach C36:

Inflow Area = 15.085 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 17.92 cfs @ 12.42 hrs, Volume= 2.326 af
Outflow = 17.92 cfs @ 12.42 hrs, Volume= 2.326 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.64 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 5.38 fps, Avg. Travel Time= 0.1 min

Peak Storage= 43 cf @ 12.42 hrs
Average Depth at Peak Storage= 1.12' , Surface Width= 1.30'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 19.71 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0300 '/'
Inlet Invert= 418.00', Outlet Invert= 417.10'



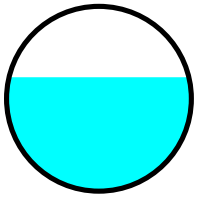
Summary for Reach C37:

Inflow Area = 5.542 ac, 0.00% Impervious, Inflow Depth = 1.70" for 10-Year event
Inflow = 11.25 cfs @ 12.10 hrs, Volume= 0.787 af
Outflow = 11.25 cfs @ 12.10 hrs, Volume= 0.787 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.85 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.61 fps, Avg. Travel Time= 0.1 min

Peak Storage= 34 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.92' , Surface Width= 1.46'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 384.00', Outlet Invert= 383.40'



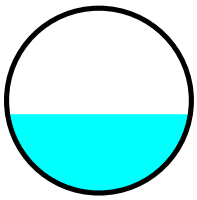
Summary for Reach C38:

Inflow Area = 18.050 ac, 0.00% Impervious, Inflow Depth = 1.70" for 10-Year event
Inflow = 26.02 cfs @ 12.26 hrs, Volume= 2.562 af
Outflow = 25.98 cfs @ 12.26 hrs, Volume= 2.562 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.24 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.94 fps, Avg. Travel Time= 0.5 min

Peak Storage= 305 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.85' , Surface Width= 3.95'
Bank-Full Depth= 2.00' Flow Area= 6.3 sf, Capacity= 69.32 cfs

A factor of 2.00 has been applied to the storage and discharge capacity
24.0" Round Pipe
n= 0.012
Length= 120.0' Slope= 0.0200 '/'
Inlet Invert= 376.00', Outlet Invert= 373.60'



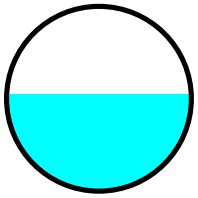
Summary for Reach C39:

Inflow Area = 2.866 ac, 0.00% Impervious, Inflow Depth = 1.93" for 10-Year event
Inflow = 5.39 cfs @ 12.18 hrs, Volume= 0.460 af
Outflow = 5.39 cfs @ 12.19 hrs, Volume= 0.460 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.24 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.05 fps, Avg. Travel Time= 0.2 min

Peak Storage= 26 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.66' , Surface Width= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 40.0' Slope= 0.0200 '/'
Inlet Invert= 465.00', Outlet Invert= 464.20'



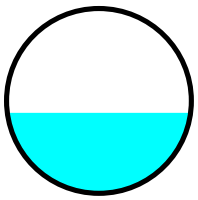
Summary for Reach C4:

Inflow Area = 1.044 ac, 0.00% Impervious, Inflow Depth = 2.08" for 10-Year event
Inflow = 3.87 cfs @ 11.97 hrs, Volume= 0.181 af
Outflow = 3.86 cfs @ 11.98 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.57 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.33 fps, Avg. Travel Time= 0.2 min

Peak Storage= 15 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.54' , Surface Width= 1.24'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 380.00', Outlet Invert= 379.40'



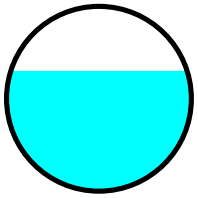
Summary for Reach C5:

Inflow Area = 5.641 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 9.17 cfs @ 12.24 hrs, Volume= 0.870 af
Outflow = 9.17 cfs @ 12.24 hrs, Volume= 0.870 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.86 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 4.24 fps, Avg. Travel Time= 0.1 min

Peak Storage= 25 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.81' , Surface Width= 1.19'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 12.12 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0300 '/'
Inlet Invert= 386.00', Outlet Invert= 385.10'



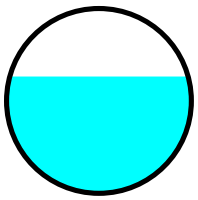
Summary for Reach C6:

Inflow Area = 16.536 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 25.14 cfs @ 12.22 hrs, Volume= 2.447 af
Outflow = 25.13 cfs @ 12.23 hrs, Volume= 2.447 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.03 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.72 fps, Avg. Travel Time= 0.2 min

Peak Storage= 125 cf @ 12.23 hrs
Average Depth at Peak Storage= 1.26' , Surface Width= 1.93'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 34.66 cfs

24.0" Round Pipe
n= 0.012
Length= 60.0' Slope= 0.0200 '/'
Inlet Invert= 392.00', Outlet Invert= 390.80'



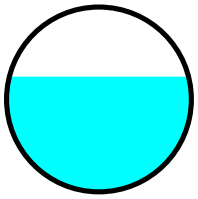
Summary for Reach C7:

Inflow Area = 3.785 ac, 0.00% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 7.03 cfs @ 12.15 hrs, Volume= 0.560 af
Outflow = 7.02 cfs @ 12.16 hrs, Volume= 0.560 af, Atten= 0%, Lag= 0.2 min
Routed to Reach C6 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.75 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.29 fps, Avg. Travel Time= 0.3 min

Peak Storage= 48 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.78' , Surface Width= 1.21'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 60.0' Slope= 0.0200 '/'
Inlet Invert= 408.00', Outlet Invert= 406.80'



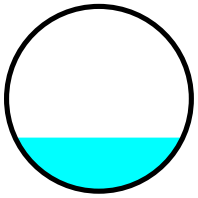
Summary for Reach C8:

Inflow Area = 0.587 ac, 0.00% Impervious, Inflow Depth = 2.08" for 10-Year event
Inflow = 1.80 cfs @ 12.03 hrs, Volume= 0.102 af
Outflow = 1.80 cfs @ 12.03 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C3 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.13 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.96 fps, Avg. Travel Time= 0.3 min

Peak Storage= 9 cf @ 12.03 hrs
Average Depth at Peak Storage= 0.36' , Surface Width= 1.13'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.90 cfs

15.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 416.00', Outlet Invert= 415.40'



Summary for Reach C9:

Inflow Area = 8.205 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 10.88 cfs @ 12.36 hrs, Volume= 1.265 af
Outflow = 10.87 cfs @ 12.36 hrs, Volume= 1.265 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C3 :

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.78 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.95 fps, Avg. Travel Time= 0.1 min

Peak Storage= 33 cf @ 12.36 hrs
Average Depth at Peak Storage= 0.90' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.09 cfs

18.0" Round Pipe
n= 0.012
Length= 30.0' Slope= 0.0200 '/'
Inlet Invert= 430.00', Outlet Invert= 429.40'