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## List of Appendices

- Appendix A – Drainage Exhibit
- Appendix B – HydroCAD Models
- Appendix C – Civil Plans
- Appendix D – Solar Array Ground Cover Analysis
1.0 Introduction

The purpose of this report is to describe the proposed stormwater management design for the construction of a solar photovoltaic generation facility (“the project”) and document compliance with state and local stormwater requirements. The project will convert approximately 14.9 acres of a mostly wooded and logged field into a power generation facility. Construction will include elevated solar modules mounted on driven steel piles, concrete inverter/transformer pads, and aggregate access roads. The goal of the stormwater management design is to meet or exceed the requirements of the Authorities Having Jurisdiction by reducing or matching the rate and volume of runoff generated by the project site and controlling pollutants and sedimentation from leaving the site during construction.

2.0 Existing Conditions

The existing project property consists of mostly forested land with an agricultural field along the frontage of Daniel Shays Highway – Route 202. Portions of the site appear to have been logged recently. Soils mapped within the facility area are primarily classified as Essex gravelly fine sandy loam, with 3 to 8 percent slopes and very stony. The property is bordered on the east by Daniel Shays Highway and is north and west of the intersection of Kopec Avenue and Daniel Shays Highway, and north of Old Pelham Road.

A north – south broad ridge line runs near the center of the project property. The existing drainage sheet flows from the ridge line to the east perimeter and from the ridge line to the southwest. Storm sewer catch basins are located along the west side of Daniel Shays Highway at the east end of the project property. A wetland delineation was conducted on the site and yielded wetlands located throughout the site. Other than the possibility of drain tiles and the storm sewer catch basins, no other drainage structures were located on site. The existing project area is 100% pervious.

3.0 Proposed Development

The proposed development consists of a 4.4 MW AC solar project. Solar modules are mounted on racking attached to steel piles driven directly into the ground. There are multiple centrally located concrete equipment pads for inverters and transformers. The project will have road access from Daniel Shays Highway. The aggregate access drive provides access to the equipment pad, battery storage, and the laydown area. Grading throughout the site is done to accommodate racking and to promote effective drainage. Ground cover below the solar modules will be pervious to maximize on-site infiltration of stormwater. New England Conservation/Wildlife Seed Mix and Solar Array Seed Mix shall be used as specified on Sheet L-101 in Appendix C. Plants identified by the most recent copy of the “Massachusetts Prohibited Plant List” maintained by the Massachusetts Department of Agricultural Resources will not be used. The wetlands located on the parcel will include 100’ disturbance buffers per the MassDEP regulations unless under 5,000 SF.

March 5, 2019
4.0 Jurisdictional Requirements

Local jurisdictions for this project include the Town of Belchertown and the Massachusetts Department of Environmental Protection (MassDEP).

The project will be required to comply with the Town of Belchertown Stormwater Management Regulations adopted by the Conservation Commission, as the Stormwater Authority and the EPA New England NPDES Construction General Permit.

The proposed stormwater management will be designed in compliance with the MassDEP Stormwater Management Standards as summarized:

Standard 1 - No untreated discharges or erosion to wetlands:

There will be no direct discharge of untreated stormwater to nearby wetlands or waters of the Commonwealth. Runoff from the added impervious surface will come from the gravel maintenance road and will sheet flow through the proposed native grass landcover for water quality treatment and runoff rate attenuation prior to discharge to adjacent wetlands.

Standard 2 - Peak rate attenuation:

The stormwater management systems will be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. The project will control post-development peak discharge rates for the 2, 10, and 100-year, 24-hour storm events to maintain pre-development peak discharge rates. The data and calculations will follow the MassDEP Hydrology Handbook for Conservation Commissioners.

Standard 3 – Stormwater recharge:

The loss of the average annual recharge to groundwater will be minimized or eliminated using Best Management Practices (BMPs) as referenced in the MassDEP Stormwater Handbook and the MassDEP Hydrology Handbook for Conservation Commissioners, Chapter 8. At a minimum, the annual recharge from the post-development site will approximate the annual recharge from the pre-development conditions based on soil types.

Standard 4 – Water quality:

The project is designed with stormwater berms and will use sheet flow through the proposed native grass landcover for water quality treatment and runoff rate attenuation prior to discharge offsite to meet the water quality requirements of Standard 4. All proposed stormwater management BMPs will be operated and maintained to ensure continued water quality treatment of runoff.

The required water quality volume is 454 cf and the provided storage shown in Table 1 is 7,718 cf.

Standard 5 – Land uses with higher potential pollutant loads (LUHPPLs):

No LUHPPLs are proposed for the project.

Standard 6 – Critical areas:

March 5, 2019
Any critical areas identified will use stormwater management BMPs approved for critical areas consistent with the MassDEP Stormwater Management Handbook.

Standard 7 – Redevelopment:

This project is a new development and no redevelopment is part of this project.

Standard 8 – Construction period controls:

A Stormwater Pollution Prevention Plan (SWPPP) will be developed to comply with the EPA New England NPDES Construction General Permit for Stormwater Discharges to fulfill the requirements of the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan.

Standard 9 – Operation and maintenance plan:

A long-term operation plan will be developed for the stormwater management systems to comply with the MassDEP Stormwater Management Standards. This manual outlines source control and pollution prevention measures and maintenance requirements of the stormwater BMPs associated with the project.

Standard 10 – Illicit discharges to drainage system:

There will be no illicit discharges to the proposed stormwater management system associated with the project. An Illicit Discharge Compliance Statement will be included in the Stormwater Report submitted with the Notice of Intent.

5.0 Stormwater/Erosion Control Design Approach

The project will create new impervious surfaces by constructing aggregate roads and concrete equipment pads over existing pervious forested and logged land. In addition, the project will add impervious solar modules. Since the solar modules are elevated on driven steel piles, they will not be considered impervious due to the vegetation beneath the panels. All current land within the project area not converted to impervious surface will be planted permanently with native vegetation including a non-jurisdictional wetland conservation seed mix and a solar array seed mix. The net result of new impervious plus conversion of existing ground surface to native vegetation seed mixes is a no increase in runoff leaving the site. Although there is no net increase in the proposed discharge rate, stormwater berms have been added to reduce rate and volume.

Design Assumptions

- Existing soils are HSG Type A
- NRCS Curve Number for HSG Type A soils with wood, good condition is 30
- NRCS Curve Number for HSG Type A soils with meadow grass is 30
- NRCS Curve Number for aggregate roads is 96
- NRCS Curve Number for concrete pads is 98

See Appendix D for meadow grass ground cover analysis.

March 5, 2019
Erosion Control

Erosion control during construction will be the responsibility of the contractor to implement and maintain. A stormwater pollution prevention plan will be prepared by a qualified individual as defined by the EPA New England NPDES general permit. The SWPPP will be provided to the contractor prior to construction so that they may become familiar with its contents and successfully implement it.

Typical Best Management Practices (BMP’s) for a community solar garden project includes the following:

- Silt fence/hay bale combination at the project perimeter wherever drainage sheets offsite.
- Rock construction entrances at access points to prevent offsite tracking onto public roadways.
- Phasing earth disturbing portions of construction to limit the area of exposed sediment to small, manageable areas.
- Fiber logs will be used to stabilize highly erodible soils on steep slopes.
- Establish temporary and permanent vegetation as quickly as possible in areas where work has ceased. Of critical importance is to protect and maintain vegetation once it has been established throughout the life of the project.
- Stormwater berms have been added to improve runoff volume and rate and prevent erosion in sloped areas by allowing runoff to be absorbed.

Rate Control

Even when including the aggregate roads and concrete pads, the resulting composite CN is not increasing from the existing condition of the site which will not increase the rate of stormwater runoff, compared to the existing conditions. Rate control requirements are improved with the use of stormwater berms. Runoff rates do not include storage volumes from the stormwater berms.

6.0 Calculations and Data

Water Quality Volume (WQV) Calculation

WQV = 0.5” x post-development impervious area

WQV = (0.5”/12 in/ft) x (10,890 sf)

WQV = 454 cf
See Appendix A for the Proposed Drainage Exhibit and Appendix B for HydroCAD Models.

**Rate Control Calculations**

The existing and proposed HydroCAD output reports from the model of this system are attached in Appendix B. HydroCAD directly implements some of the key features of TR-55, such as curve-number lookup and procedures for calculating time-of-concentration. Runoff routing method SCS TR-20 is used for this model.

<table>
<thead>
<tr>
<th>Rainfall Event (NRCC 24-hr)</th>
<th>Pre-development (cfs)</th>
<th>Proposed (cfs)</th>
<th>% Increase</th>
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</thead>
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<tr>
<td>2-year</td>
<td>0.00</td>
<td>0.00</td>
<td>0%</td>
</tr>
<tr>
<td>10-year</td>
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<td>0%</td>
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<tr>
<td>100-year</td>
<td>4.38</td>
<td>4.38</td>
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**Rainfall Depths**

Climate and Precipitation
- Rainfall Frequencies per NRCS

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<tr>
<th>Recurrence Interval (yrs)</th>
<th>24-hour Rainfall Depth (in)</th>
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<tbody>
<tr>
<td>2-year</td>
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<td>10-year</td>
<td>4.47</td>
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<tr>
<td>100-year</td>
<td>7.68</td>
</tr>
</tbody>
</table>
7.0 Federal Emergency Management Agency (FEMA)

The property lies within Zone C “areas of minimal flooding” as defined by Federal Emergency Management Flood Insurance Rate Map Community Panel Number 2501570005B with an effective date of September 2, 1981.

8.0 Scour & Erosion Potential

Site grading will be done such that runoff conditions at all pile locations will be sheet flow. No piles will be located in ditches, swales, channels, etc. where concentrated flow would create a potential scour condition. Erosion potential is to be mitigated by the use of stormwater berms which will allow vegetation to establish throughout the site. No new concentrated flow drainage features are proposed for this project.

9.0 Conclusion

Construction phase stormwater requirements of this project are met by obtaining the NPDES permit required by the MassDEP, which includes generating a SWPPP and implementing erosion control BMPs sufficient to satisfy the permit requirements. Post construction phase stormwater requirements are met by having no net increase in our curve number and by implementing erosion control measures.
Stormwater Report
Appendix A
Drainage Exhibits
Stormwater Report
Appendix B
HydroCAD Models
## Area Listing (all nodes)

<table>
<thead>
<tr>
<th>Area</th>
<th>CN</th>
<th>Description</th>
<th>Subcatchment-numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.220</td>
<td>30</td>
<td>Meadow, non-grazed, HSG A</td>
<td>(1S, 2S)</td>
</tr>
<tr>
<td>75.830</td>
<td>30</td>
<td>Woods, Good, HSG A</td>
<td>(1S, 2S)</td>
</tr>
<tr>
<td><strong>91.050</strong></td>
<td><strong>30</strong></td>
<td><strong>TOTAL AREA</strong></td>
<td></td>
</tr>
</tbody>
</table>
Soil Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (acres)</th>
<th>Soil Group</th>
<th>Subcatchment Numbers</th>
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<tbody>
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<td>91.050</td>
<td>HSG A</td>
<td>1S, 2S</td>
</tr>
<tr>
<td>0.000</td>
<td>HSG B</td>
<td></td>
</tr>
<tr>
<td>0.000</td>
<td>HSG C</td>
<td></td>
</tr>
<tr>
<td>0.000</td>
<td>HSG D</td>
<td></td>
</tr>
<tr>
<td>0.000</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td><strong>91.050</strong></td>
<td><strong>TOTAL AREA</strong></td>
<td></td>
</tr>
</tbody>
</table>
Ground Covers (all nodes)

<table>
<thead>
<tr>
<th>HSG-A (acres)</th>
<th>HSG-B (acres)</th>
<th>HSG-C (acres)</th>
<th>HSG-D (acres)</th>
<th>Other (acres)</th>
<th>Total (acres)</th>
<th>Ground Cover</th>
<th>Subcatchment Numbers</th>
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</thead>
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<td>Woods, Good</td>
<td>1S, 2S</td>
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<tr>
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<td>0.000</td>
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<td>91.050</td>
<td>TOTAL AREA</td>
<td></td>
</tr>
</tbody>
</table>
Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: East Site
Runoff Area=41.750 ac  0.00% Impervious  Runoff Depth=0.00"
Flow Length=1,334'  Slope=0.0734 '/'  Tc=57.4 min  CN=30  Runoff=0.00 cfs  0.000 af

Subcatchment 2S: West Site
Runoff Area=49.300 ac  0.00% Impervious  Runoff Depth=0.00"
Flow Length=1,820'  Slope=0.0742 '/'  Tc=73.2 min  CN=30  Runoff=0.00 cfs  0.000 af

Link 1L: Off site east
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Link 2L: Off site west
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Link 3L: Total off-site
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Total Runoff Area = 91.050 ac  Runoff Volume = 0.000 af  Average Runoff Depth = 0.00"
100.00% Pervious = 91.050 ac  0.00% Impervious = 0.000 ac
Summary for Subcatchment 1S: East Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C  2-Year Rainfall=3.07"

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<th>Area (ac)</th>
<th>CN</th>
<th>Description</th>
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<td>27.140</td>
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<td>Woods, Good, HSG A</td>
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<tr>
<td>41.750</td>
<td>30</td>
<td>Weighted Average</td>
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<tr>
<td>41.750</td>
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<td>Pervious Area</td>
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Tc Length Slope Velocity Capacity Description

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<tr>
<th>(min)</th>
<th>(feet)</th>
<th>(ft/ft)</th>
<th>(ft/sec)</th>
<th>(cfs)</th>
<th>Description</th>
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<td>1,334</td>
<td>0.0734</td>
<td>0.39</td>
<td></td>
<td>Lag/CN Method,</td>
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</table>

Subcatchment 1S: East Site

Hydrograph

NRCC 24-hr C 2-Year Rainfall=3.07"
Runoff Area=41.750 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,334'
Slope=0.0734 '/'
Tc=57.4 min
CN=30
Summary for Subcatchment 2S: West Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

NRCC 24-hr C  2-Year Rainfall=3.07"

<table>
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<td>30</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>49.300</td>
<td>100</td>
<td>100.00% Pervious Area</td>
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</tbody>
</table>

Lag/CN Method,

Subcatchment 2S: West Site

NRCC 24-hr C
2-Year Rainfall=3.07"
Runoff Area=49.300 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,820' Slope=0.0742 '/'
Tc=73.2 min CN=30
Summary for Link 1L: Off site east

Inflow Area = 41.750 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: Off site east

Inflow Area=41.750 ac
Summary for Link 2L: Off site west

Inflow Area = 49.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event

Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 2L: Off site west

Hydrograph

Inflow Area = 49.300 ac
Summary for Link 3L: Total off-site

Inflow Area = 91.050 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event

Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af

Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 3L: Total off-site

Hydrograph

Inflow Area = 91.050 ac
Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: East Site
Runoff Area=41.750 ac  0.00% Impervious  Runoff Depth=0.00"
Flow Length=1,334'  Slope=0.0734 '/'  Tc=57.4 min  CN=30  Runoff=0.00 cfs  0.000 af

Subcatchment 2S: West Site
Runoff Area=49.300 ac  0.00% Impervious  Runoff Depth=0.00"
Flow Length=1,820'  Slope=0.0742 '/'  Tc=73.2 min  CN=30  Runoff=0.00 cfs  0.000 af

Link 1L: Off site east
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Link 2L: Off site west
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Link 3L: Total off-site
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Total Runoff Area = 91.050 ac  Runoff Volume = 0.000 af  Average Runoff Depth = 0.00"
100.00% Pervious = 91.050 ac  0.00% Impervious = 0.000 ac
Summary for Subcatchment 1S: East Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

NRCC 24-hr C 10-Year Rainfall=4.47"

<table>
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<th>Area (ac)</th>
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<td>30</td>
<td>Woods, Good, HSG A</td>
</tr>
<tr>
<td>41.750</td>
<td>30</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>41.750</td>
<td>100.00%</td>
<td>Pervious Area</td>
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</tbody>
</table>

Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)

57.4 1,334 0.0734 0.39 Lag/CN Method,

Subcatchment 1S: East Site

Hydrograph

NRCC 24-hr C
10-Year Rainfall=4.47"
Runoff Area=41.750 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,334'
Slope=0.0734 '/'
Tc=57.4 min
CN=30
Summary for Subcatchment 2S: West Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.47"

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<td>Weighted Average</td>
</tr>
<tr>
<td>49.300</td>
<td>100.00% Pervious Area</td>
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</tr>
</tbody>
</table>

Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)
73.2 1,820 0.0742 0.41 Lag/CN Method,

Subcatchment 2S: West Site

Hydrograph

NRCC 24-hr C
10-Year Rainfall=4.47"
Runoff Area=49.300 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,820'
Slope=0.0742 '/"'
Tc=73.2 min
CN=30
Summary for Link 1L: Off site east

Inflow Area = 41.750 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 1L: Off site east

Hydrograph

Inflow Area = 41.750 ac
Summary for Link 2L: Off site west

Inflow Area = 49.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Attenuation = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 2L: Off site west

Hydrograph

Inflow Area = 49.300 ac
Summary for Link 3L: Total off-site

Inflow Area = 91.050 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Subcatchment 1S: East Site  
Runoff Area = 41.750 ac  0.00% Impervious  Runoff Depth = 0.34”
Flow Length = 1,334’  Slope = 0.0734 ′/″  Tc = 57.4 min  CN = 30  Runoff = 2.09 cfs  1.199 af

Subcatchment 2S: West Site  
Runoff Area = 49.300 ac  0.00% Impervious  Runoff Depth = 0.34”
Flow Length = 1,820’  Slope = 0.0742 ′/″  Tc = 73.2 min  CN = 30  Runoff = 2.33 cfs  1.416 af

Link 1L: Off site east  
Inflow = 2.09 cfs  1.199 af
Primary = 2.09 cfs  1.199 af

Link 2L: Off site west  
Inflow = 2.33 cfs  1.416 af
Primary = 2.33 cfs  1.416 af

Link 3L: Total off-site  
Inflow = 4.38 cfs  2.615 af
Primary = 4.38 cfs  2.615 af

Total Runoff Area = 91.050 ac  Runoff Volume = 2.615 af  Average Runoff Depth = 0.34”
100.00% Pervious = 91.050 ac  0.00% Impervious = 0.000 ac
Summary for Subcatchment 1S: East Site

Runoff = 2.09 cfs @ 13.79 hrs, Volume= 1.199 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 100-Year Rainfall=7.68"

<table>
<thead>
<tr>
<th>Area (ac)</th>
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<th>Description</th>
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<tbody>
<tr>
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<tr>
<td>27.140</td>
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<td>Pervious Area</td>
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<th>Tc (min)</th>
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<th>Capacity (cfs)</th>
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<td>0.39</td>
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<td>Lag/CN Method,</td>
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</table>

Subcatchment 1S: East Site

NRCC 24-hr C 100-Year Rainfall=7.68"
Runoff Area=41.750 ac
Runoff Volume=1.199 af
Runoff Depth=0.34"
Flow Length=1,334’
Slope=0.0734 ‘/”
Tc=57.4 min
CN=30
Summary for Subcatchment 2S: West Site

Runoff = 2.33 cfs @ 14.08 hrs, Volume= 1.416 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

NRCC 24-hr C  100-Year Rainfall=7.68"

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<td>100.00% Pervious Area</td>
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<td>1,820</td>
<td>0.0742</td>
<td>0.41</td>
<td></td>
<td>Lag/CN Method,</td>
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</tbody>
</table>

Subcatchment 2S: West Site

Hydrograph

NRCC 24-hr C  100-Year Rainfall=7.68"
Runoff Area=49.300 ac
Runoff Volume=1.416 af
Runoff Depth=0.34"
Flow Length=1,820'
Slope=0.0742 '/'
Tc=73.2 min
CN=30
Summary for Link 1L: Off site east

Inflow Area = 41.750 ac, 0.00% Impervious, Inflow Depth = 0.34" for 100-Year event
Inflow = 2.09 cfs @ 13.79 hrs, Volume= 1.199 af
Primary = 2.09 cfs @ 13.79 hrs, Volume= 1.199 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: Off site east

![Hydrograph](image)
Summary for Link 2L: Off site west

Inflow Area = 49.300 ac, 0.00% Impervious, Inflow Depth = 0.34” for 100-Year event
Inflow = 2.33 cfs @ 14.08 hrs, Volume = 1.416 af
Primary = 2.33 cfs @ 14.08 hrs, Volume = 1.416 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 2L: Off site west

Hydrograph

Inflow Area = 49.300 ac
Summary for Link 3L: Total off-site

Inflow Area = 91.050 ac, 0.00% Impervious, Inflow Depth = 0.34" for 100-Year event
Inflow = 4.38 cfs @ 13.94 hrs, Volume= 2.615 af
Primary = 4.38 cfs @ 13.94 hrs, Volume= 2.615 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: Total off-site

Inflow Area=91.050 ac
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<thead>
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<th>Area (acres)</th>
<th>CN</th>
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<tr>
<td>0.030</td>
<td>98</td>
<td>Concrete Pads (1S)</td>
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<tr>
<td>0.220</td>
<td>96</td>
<td>Gravel surface, HSG D (1S)</td>
</tr>
<tr>
<td>28.650</td>
<td>30</td>
<td>Meadow, non-grazed, HSG A (1S, 2S)</td>
</tr>
<tr>
<td>62.150</td>
<td>30</td>
<td>Woods, Good, HSG A (1S, 2S)</td>
</tr>
<tr>
<td><strong>91.050</strong></td>
<td><strong>30</strong></td>
<td><strong>TOTAL AREA</strong></td>
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Soil Listing (all nodes)

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<th>Area (acres)</th>
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<td>90.800</td>
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<td>1S, 2S</td>
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<tr>
<td>0.000</td>
<td>HSG B</td>
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</tr>
<tr>
<td>0.000</td>
<td>HSG C</td>
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<tr>
<td>0.220</td>
<td>HSG D</td>
<td>1S</td>
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<td>1S</td>
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<tr>
<td><strong>91.050</strong></td>
<td><strong>TOTAL AREA</strong></td>
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<tr>
<td>HSG-A (acres)</td>
<td>HSG-B (acres)</td>
<td>HSG-C (acres)</td>
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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: East Site
Runoff Area=41.750 ac  0.07% Impervious  Runoff Depth=0.00"  
Flow Length=1,334'  Slope=0.0734 '/'  Tc=57.4 min  CN=30  Runoff=0.00 cfs  0.000 af

Subcatchment 2S: West Site
Runoff Area=49.300 ac  0.00% Impervious  Runoff Depth=0.00" 
Flow Length=1,820'  Slope=0.0742 '/'  Tc=73.2 min  CN=30  Runoff=0.00 cfs  0.000 af

Link 1L: Off site east
Inflow=0.00 cfs  0.000 af  
Primary=0.00 cfs  0.000 af

Link 2L: Off site west
Inflow=0.00 cfs  0.000 af  
Primary=0.00 cfs  0.000 af

Link 3L: Total off-site
Inflow=0.00 cfs  0.000 af  
Primary=0.00 cfs  0.000 af

Total Runoff Area = 91.050 ac  Runoff Volume = 0.000 af  Average Runoff Depth = 0.00"
99.97% Pervious = 91.020 ac  0.03% Impervious = 0.030 ac
Summary for Subcatchment 1S: East Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

NRCC 24-hr C 2-Year Rainfall=3.07”

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<tr>
<td>0.220</td>
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<td>Gravel surface, HSG D</td>
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<tr>
<td>* 0.030</td>
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<td>Concrete Pads</td>
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<tr>
<td>41.750</td>
<td>30</td>
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<td>41.720</td>
<td>99.93%</td>
<td>Pervious Area</td>
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<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
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<td></td>
<td>Lag/CN Method,</td>
</tr>
</tbody>
</table>

Subcatchment 1S: East Site

NRCC 24-hr C 2-Year Rainfall=3.07"
Runoff Area=41.750 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,334'
Slope=0.0734 '/'
Tc=57.4 min
CN=30
Summary for Subcatchment 2S: West Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C  2-Year Rainfall=3.07"

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<td>0.0742</td>
<td>0.41</td>
<td></td>
<td>Lag/CN Method,</td>
</tr>
</tbody>
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Subcatchment 2S: West Site

Hydrograph

NRCC 24-hr C
2-Year Rainfall=3.07"
Runoff Area=49.300 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,820'
Slope=0.0742 '/'
Tc=73.2 min
CN=30
Summary for Link 1L: Off site east

Inflow Area = 41.750 ac, 0.07% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 1L: Off site east

Hydrograph

Inflow Area = 41.750 ac
Summary for Link 2L: Off site west

Inflow Area = 49.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Attenuation = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 2L: Off site west

Hydrograph

Inflow Area = 49.300 ac
Summary for Link 3L: Total off-site

Inflow Area = 91.050 ac, 0.03% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: Total off-site

Hydrograph

Inflow Area=91.050 ac
Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: East Site
Runoff Area=41.750 ac  0.07% Impervious  Runoff Depth=0.00"
Flow Length=1,334'  Slope=0.0734 '/'  Tc=57.4 min  CN=30  Runoff=0.00 cfs  0.000 af

Subcatchment 2S: West Site
Runoff Area=49.300 ac  0.00% Impervious  Runoff Depth=0.00"
Flow Length=1,820'  Slope=0.0742 '/'  Tc=73.2 min  CN=30  Runoff=0.00 cfs  0.000 af

Link 1L: Off site east
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Link 2L: Off site west
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Link 3L: Total off-site
Inflow=0.00 cfs  0.000 af
Primary=0.00 cfs  0.000 af

Total Runoff Area = 91.050 ac  Runoff Volume = 0.000 af  Average Runoff Depth = 0.00"
99.97% Pervious = 91.020 ac  0.03% Impervious = 0.030 ac
Summary for Subcatchment 1S: East Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.47"

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Subcatchment 1S: East Site

Hydrograph

NRCC 24-hr C 10-Year Rainfall=4.47"
Runoff Area=41.750 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,334'
Slope=0.0734 '/'
Tc=57.4 min
CN=30
Summary for Subcatchment 2S: West Site

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.47"

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Subcatchment 2S: West Site

NRCC 24-hr C 10-Year Rainfall=4.47"
Runoff Area=49.300 ac
Runoff Volume=0.000 af
Runoff Depth=0.00"
Flow Length=1,820'
Slope=0.0742 '/"'
Tc=73.2 min
CN=30
Summary for Link 1L: Off site east

Inflow Area = 41.750 ac, 0.07% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 1L: Off site east

Inflow Area=41.750 ac
Summary for Link 2L: Off site west

Inflow Area = 49.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: Off site west

![Hydrograph](image)
Summary for Link 3L: Total off-site

Inflow Area = 91.050 ac, 0.03% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 3L: Total off-site
Subcatchment 1S: East Site

Runoff Area = 41.750 ac  0.07% Impervious  Runoff Depth = 0.34"
Flow Length = 1,334’  Slope = 0.0734 '/'  Tc = 57.4 min  CN = 30  Runoff = 2.09 cfs  1.199 af

Subcatchment 2S: West Site

Runoff Area = 49.300 ac  0.00% Impervious  Runoff Depth = 0.34"
Flow Length = 1,820’  Slope = 0.0742 '/'  Tc = 73.2 min  CN = 30  Runoff = 2.33 cfs  1.416 af

Inflow = 2.09 cfs  1.199 af
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Inflow = 4.38 cfs  2.615 af
Primary = 4.38 cfs  2.615 af

Total Runoff Area = 91.050 ac  Runoff Volume = 2.615 af  Average Runoff Depth = 0.34"
99.97% Pervious = 91.020 ac  0.03% Impervious = 0.030 ac
Summary for Subcatchment 1S: East Site

Runoff = 2.09 cfs @ 13.79 hrs, Volume= 1.199 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 100-Year Rainfall=7.68"

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<tr>
<td>18.810</td>
<td>30</td>
<td>Woods, Good, HSG A</td>
</tr>
<tr>
<td>0.220</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>* 0.030</td>
<td>98</td>
<td>Concrete Pads</td>
</tr>
<tr>
<td>41.750</td>
<td>30</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>41.720</td>
<td>99.93% Pervious Area</td>
<td></td>
</tr>
<tr>
<td>0.030</td>
<td>0.07% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)          
57.4 1,334 0.0734 0.39 Lag/CN Method, 

Subcatchment 1S: East Site

Hydrograph

NRCC 24-hr C 100-Year Rainfall=7.68"
Runoff Area=41.750 ac
Runoff Volume=1.199 af
Runoff Depth=0.34"
Flow Length=1,334'
Slope=0.0734 '/'
Tc=57.4 min
CN=30
Summary for Subcatchment 2S: West Site

Runoff = 2.33 cfs @ 14.08 hrs, Volume = 1.416 af, Depth = 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 100-Year Rainfall=7.68"

<table>
<thead>
<tr>
<th>Area (ac)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 5.960</td>
<td>30</td>
<td>Meadow, non-grazed, HSG A</td>
</tr>
<tr>
<td>43.340</td>
<td>30</td>
<td>Woods, Good, HSG A</td>
</tr>
<tr>
<td>49.300</td>
<td>30</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>49.300</td>
<td>100.00%</td>
<td>Pervious Area</td>
</tr>
</tbody>
</table>

Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs) Lag/CN Method, Subcatchment 2S: West Site

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>73.2</td>
<td>1,820</td>
<td>0.0742</td>
<td>0.41</td>
<td></td>
<td>Lag/CN Method,</td>
</tr>
</tbody>
</table>

NRCC 24-hr C 100-Year Rainfall=7.68"
Runoff Area=49.300 ac
Runoff Volume=1.416 af
Runoff Depth=0.34"
Flow Length=1,820'
Slope=0.0742 '/'
Tc=73.2 min
CN=30
Summary for Link 1L: Off site east

Inflow Area = 41.750 ac, 0.07% Impervious, Inflow Depth = 0.34” for 100-Year event
Inflow = 2.09 cfs @ 13.79 hrs, Volume = 1.199 af
Primary = 2.09 cfs @ 13.79 hrs, Volume = 1.199 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs
Summary for Link 2L: Off site west

Inflow Area = 49.300 ac, 0.00% Impervious, Inflow Depth = 0.34" for 100-Year event
Inflow = 2.33 cfs @ 14.08 hrs, Volume = 1.416 af
Primary = 2.33 cfs @ 14.08 hrs, Volume = 1.416 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs
Summary for Link 3L: Total off-site

Inflow Area = 91.050 ac, 0.03% Impervious, Inflow Depth = 0.34” for 100-Year event
Inflow = 4.38 cfs @ 13.94 hrs, Volume = 2.615 af
Primary = 4.38 cfs @ 13.94 hrs, Volume = 2.615 af, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span = 0.00-48.00 hrs, dt = 0.05 hrs

Link 3L: Total off-site

Hydrograph

Inflow Area = 91.050 ac
Stormwater Report
Appendix C
Civil Plans

March 5, 2019
EXISTING CONDITIONS AND REMOVALS PLAN

1. Tree Removal in Resource Area to Create Minimal Ground Disturbance.

2. See Landscape Plan (L-101) for Seeding Details.

TREE REMOVAL NOTES:

- For tree removal and resource area creation.

LEGEND:

- Property Line
- Centerline of Road
- Edge of Road
- Overhead Power
- TREELINE
- Major Contour
- Minor Contour
- Wetland
- Non Jurisdictional Wetland
- CATCH BASIN
- Utility Pole

EXISTING FEATURES

- OHU
- PROPERTY LINE
- CENTERLINE OF ROAD
- EDGE OF ROAD
- OVERHEAD POWER
- TREELINE
- MAJOR CONTOUR
- MINOR CONTOUR
- WETLAND
- NON JURISDICTIONAL WETLAND
- CATCH BASIN
- UTILITY POLE
EXISTING FEATURES

EROSION CONTROL FEATURES
- PROPERTY LINE
- EDGE OF ROAD
- OVERHEAD POWER
- TREELINE
- MAJOR CONTOUR
- MINOR CONTOUR
- WETLAND
- NON JURISDICTIONAL WETLAND
- CATCH BASIN
- UTILITY POLE
- X

AGGREGATE ROAD
- TEMPORARY AGGREGATE
- CHAIN LINK FENCE
- SETBACK LINE
- CULVERT
- WETLAND BUFFER
- LEASE BOUNDARY
- SILT FENCE/HAY BALE COMBO
- ROCK CONSTRUCTION
- ENTRANCE
- FIBER LOG
- STORMWATER BERM

OHU

1. SEE SWPPP AND SHEET L-101 FOR SEED AND STABILIZATION REQUIREMENTS.
2. SEE SWPPP FOR CONSTRUCTION ACTIVITY SEQUENCING.
3. CARE SHOULD BE TAKEN TO MAINTAIN SOIL STABILITY THROUGH DELAYED RECLAMATION TO THE EXTENT POSSIBLE. AVOID WORKING ON TOP OF VEGETATION UNDER CONDITIONS THAT MIGHT PERMIT CONSTRUCTION TO THE EXTENT POSSIBLE TO AVOID VEGETATION TO ESTABLISH AND RECOVER.

NOTES:

PLANNING BOARD CHAIRMAN DATE

CERTIFICATION OF APPROVAL

EW PW

03.05.19 2018-257.1

C-301
NOTES:
1. Construct ditch as shown above only where indicated by contours on the grading plan.
2. In the absence of a roadside ditch, slope from edge of gravel to existing ground @3:1.
3. 2% cross slope is typical, but can be adjusted down to match existing ground slope in order to promote continued sheet drainage across road.
4. Road grades are typically intended to match adjacent grade allowing drainage to sheet on and off of roads evenly. Care should be taken to field adjust road grades or ditch locations as necessary to prevent runoff from concentrating along road edges causing erosion.
5. Aggregate section shown represents a typical road section for this type of project. Actual section will be based on geotechnical report recommendations.

NOTE: C-601
4' X 4' MINIMUM LENGTH
3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT TO THE TRENCH.
2. EXCAVATE A 4"X4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.
1. SET THE STAKES.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.
5. ADD HAY BALES AGAINST SILT FABRIC AND STAKE HAY BALES.

FLOW DIRECTION
EROSION CONTROL BLANKET ON 3:1 MAX. TIE-IN SLOPE
CONCRETE PAD (DESIGN BY OTHERS)

PROFILE

PLAN

CONCRETE EQUIPMENT PAD GRADING

NOTE: CONTRACTOR SHALL REFER TO THE STRUCTURAL PLAN FOR THE PCS SUBGRADE PREPARATION.
1. Fence fabric shall be 6" above finished grade to allow for wildlife to pass through.
2. Fabric - 9 gauge, 2" mesh; galvanized ASTM A392, Class 1; twisted selvage on bottom, knuckled selvage on top.
4. Line posts shall be 2 7/8" O.D. pipe, 3.65 lbs per ft.
5. Terminal posts shall be 2 7/8" O.D. pipe, 5.79 lbs per ft.
6. All rail, wire and gates shall be galvanized.
7. Brace panel bracing sizes and location shall be referenced manufacturer's specifications.
1. See grading plan for berm locations.
2. Berms are to be constructed perpendicular to finished ground slope.
3. Berm to slope ratio to be determined by designer of slope and use of tapers.
4. Compact berm with state-approved soil on approved plant mix and do not compact adjacent finished grade.
5. Berm to be periodically maintained to designed dimensions as they are disturbed by construction activity.
6. Upon completion of berm construction, stabilize with permanent vegetation according to seed specification on sheet C001.
7. Berms are to remain as a permanent stormwater feature.
Stormwater Report
Appendix D
Solar Array Ground Cover Analysis

March 5, 2019
Ground Cover Analysis

The seed mixes selected for the Belchertown Solar Project have been modeled as meadow, non-grazed HSG A soils with a CN of 30.

The USDA Natural Resources Conservation Service defines meadow as “continuous grass, protected from grazing and generally mowed for hay.”

The NPDES General Permit requires 70% establishment prior to closing the permit.

An operation and maintenance plan will establish a schedule for annual mowing.

Below are the seed mixes selected for the Project:

- The solar array area will be seeded with a native meadow grass seed mix consisting of:

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>PER BULK POUND (LB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHEEP FESCUE</td>
<td>0.25</td>
</tr>
<tr>
<td>LITTLE BLUESTEM ‘CAMPER’</td>
<td>0.2</td>
</tr>
<tr>
<td>BROOMSEDGE</td>
<td>0.12</td>
</tr>
<tr>
<td>ANNUAL RYEGRASS</td>
<td>0.15</td>
</tr>
<tr>
<td>LANCELEAF COREOPSIS</td>
<td>0.08</td>
</tr>
<tr>
<td>PLAINS COREOPSIS</td>
<td>0.08</td>
</tr>
<tr>
<td>BLACKEYED SUSAN</td>
<td>0.05</td>
</tr>
<tr>
<td>COMMON YARROW</td>
<td>0.05</td>
</tr>
<tr>
<td>BUTTERFLY MILKWEED</td>
<td>0.05</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1 LB</strong></td>
</tr>
</tbody>
</table>

- The non-jurisdictional wetlands will be seeded with a New England Conservation / Wildlife Seed Mix consisting of:

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIG BLUESTEM</td>
<td>20</td>
</tr>
<tr>
<td>LITTLE BLUESTEM</td>
<td>20</td>
</tr>
<tr>
<td>SWITCHGRASS</td>
<td>20</td>
</tr>
<tr>
<td>FOX SEDGE</td>
<td>10</td>
</tr>
<tr>
<td>SILKY WILD RYE</td>
<td>8</td>
</tr>
<tr>
<td>COMMON MILKWEED</td>
<td>5</td>
</tr>
<tr>
<td>DEERTONGUE</td>
<td>5</td>
</tr>
<tr>
<td>PENNSYLVANIA SMARTWEED</td>
<td>5</td>
</tr>
<tr>
<td>PARTRIDGE PEA</td>
<td>4</td>
</tr>
<tr>
<td>SILKY SMOOTH ASTER</td>
<td>1.5</td>
</tr>
<tr>
<td>NODDING BUR-MARIGOLD</td>
<td>1</td>
</tr>
<tr>
<td>FLAT-TOP ASTER</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Prairie Restoration, Inc.
Example Projects
Appendix A
This site is from central MN in a sandy area 1.2 miles from the Mississippi.
The top photo is September when Prairie Restoration, Inc. was on site to seed this site in Downsville. The lower left is from the following early summer and lower right is in early July.
This site is from southern MN, near Farmington, and shows the site in July after it was seeded the fall prior.