BURNS McDONNELL

Stormwater Management Plan

Medway Grid, LLC

Medway Grid Energy Storage Project
Project No. 124220

Revision 0
12/07/2021

Stormwater Management Plan

prepared for

Medway Grid, LLC
Medway Grid Energy Storage Project
Norfolk County, Massachusetts

Project No. 124220

Revision 0
12/07/2021

prepared by

Burns & McDonnell Engineering Co, Inc.

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Medway Grid, LLC
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1.0 SITE CONDITIONS

1.1 Project Description

Medway Grid, LLC (Medway Grid) proposes to install a new battery storage system (BESS) called Medway Grid Energy Storage Project (Project) on an existing 10.6-acre parcel located along Milford Street. The parcel is partially wooded and partially developed with homes and an auto shop business. See Figure 1-1 for Project general vicinity map. The area of the property Medway Grid is proposing to disturb during construction is approximately 5.2 acres. The stormwater management design will meet or exceed the Massachusetts Stormwater Policy recommendations, and the Project will comply with MassDEP Stormwater Standards.

1.2 Existing Conditions

The Project site is in the Charles River Watershed. Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel No. 25021C0139E (July 17, 2021), the parcel is not located in the 100-year floodplain. However, the property does have Federal, state, and local wetland considerations. There is a stream on the eastern edge of the property that has a 100' wetland buffer. There is also a 200' Riverfront Area buffer overlapping the wetland buffer that makes up approximately half of the property.

The Project site is mostly an undisturbed wooded area with a few existing buildings and paving and a wetland stream on the eastern edge of the property. Currently 0.85 acres of the property has already been developed with buildings and pavement. The Project has been located to reuse these developed portions of the site to the maximum extent possible, reusing 0.79 acres of the 0.85 acres previously developed.

The site currently has two drainage areas that make up the Project site. The first drainage area is made up of 4.2 acres on the east side of the site, draining to the east into the existing stream bed. The second drainage area is one acre in the northwest corner of the site and drains to the northwest. The elevation ranges from 266 feet in the center of the site to 224 feet near the southeast end of the property.

1.2.1 Soil Types

From the site Web Soil Survey developed by the USDA, there are two soil types on the proposed Project site. There is a Canton fine sandy loam which has a hydrological soil group (HSG) classification of Type B and a Charlton-Hollis-Rock outcrop complex which has a hydrological soil group (HSG) classification of Type A. The soil resource report is included in Appendix B.

1.2.2 Rainfall Data

The Executive Order 569 directs the coordination of efforts across the Commonwealth to strengthen the resilience of communities, prepare for the impacts of climate change, and proactive plan for and mitigate damage from extreme weather events. The Massachusetts Environmental Policy Act (MEPA) Interim Protocol on Climate Change Adaptation and Resiliency complies with this Executive Order. The Interim Protocol includes the efforts of the Resilient Massachusetts Action Team (RMAT). The RMAT is advancing the "Climate Resilience Design Standards and Guidelines" project. The project is developing resilience standards, guidelines, and a project risk screening tool using climate science data and projections for Massachusetts in three critical areas: sea level rise/storm surge, extreme precipitation, and extreme heat.

The design standards for extreme precipitation include Total Precipitation Depth and Peak Intensity Design Criteria. For Tier 2 projects, a percent increase is applied to the National Oceanic and Atmospheric Administration (NOAA) median values based on the design life of the project. The Medway Grid Energy Storage Project has a design life of 20 years, so the Mid-Century (2030/2050) percent increases were used.

Table 1.1 Design Storm Frequency-Depth

Recurrence Interval (years)	NOAA Atlas 14 Present Baseline - 24hr (in)	Mid-Century (2030/2050) (in)
2	3.37	3.64
5	4.41	4.76
10	5.27	5.69
25	6.45	6.97
50	7.32	7.91
100	8.28	9.19

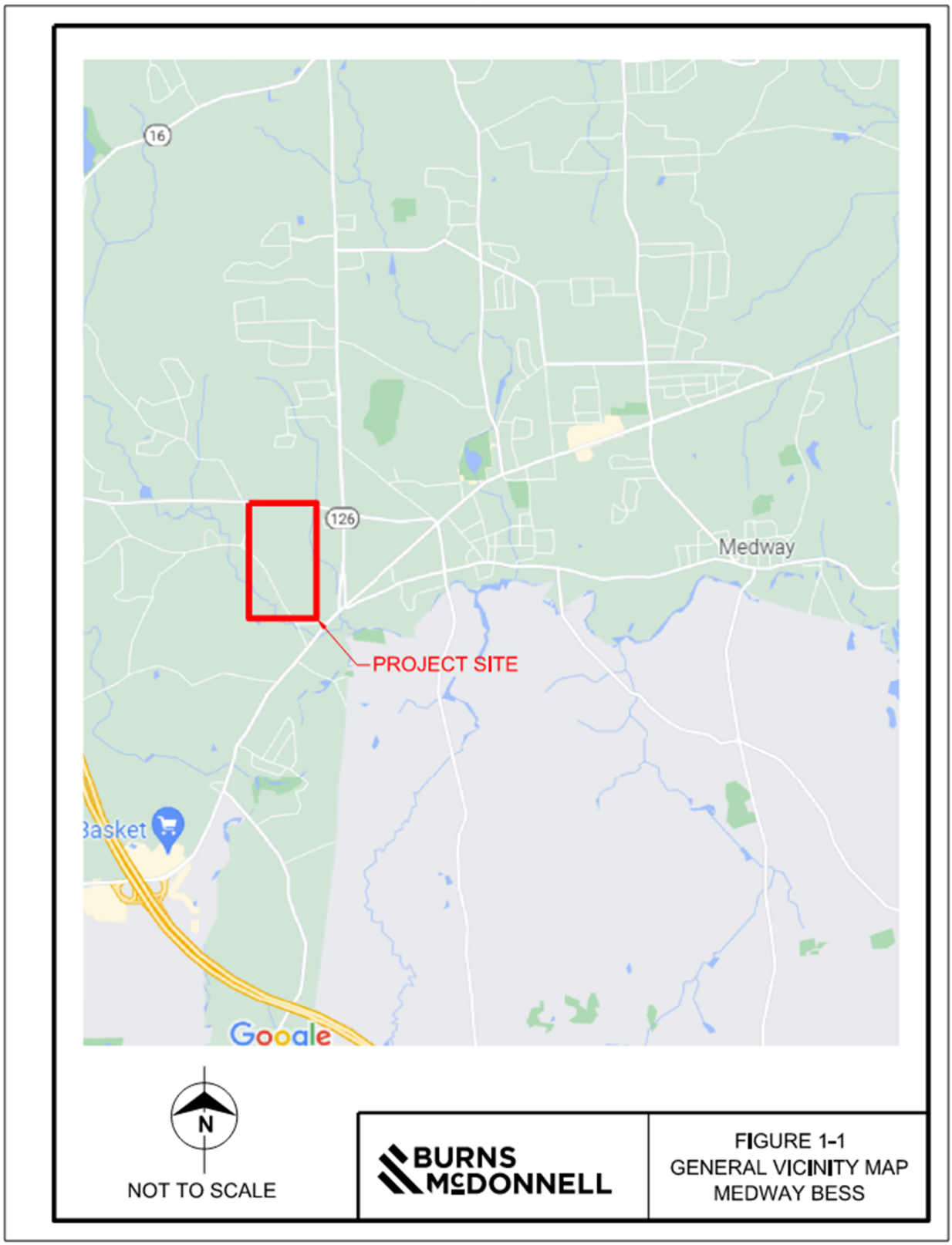
Rainfall depths for Medway, Massachusetts were obtained from the National Oceanic and Atmospheric Administration. The SCS rainfall distribution for this Project is Type III. The NOAA values were then increased by 8% for more frequent design storms, including the 2-yr, 5-yr, 10-yr, 25-yr, and 50-yr design

storms. For the 100-year design storm, the NOAA value was increased by 11%. See Table 1.1 for rainfall data. The Mid-Century design storm depths were used to design the stormwater systems to accommodate the more frequent and severe storm events occurring with climate change.

1.3 Proposed Conditions

Medway Grid is proposing to revise the property by installing a battery energy storage system. The Project site will be 5.2 acres, including 1.8 acres of impervious surfaces, 2.1 acres of crushed rock surfacing and roads, and 1.3 acre of vegetation. Grading of the substation and battery storage areas will have no greater than a 1.5% slope to facilitate operations and maintenance. There will be retaining walls needed on both the east and west sides of the Project site. Stormwater Best Management Practices (BMPs) will be implemented on site to control the quality and quantity of the stormwater discharge from the site. There will be perforated under-drains installed throughout the site that will catch runoff that has percolated through the crushed rock surfacing and direct it towards deep-sump catch basins that will pretreat the water. From these catch basins, the runoff will flow into subsurface infiltration structures which will recharge clean stormwater back into the ground. The treatment train of the deep-sump catch basins and the infiltration basins are expected to provide the required 80% TSS removal for the 0.5" Water Quality Volume. Excess runoff that does not infiltrate will be routed to a dry detention basin that will provide peak flow attenuation. The outfall of the dry detention basin will have rip rap lining to protect the channel from erosion as the stormwater leaves the site.

Prior to construction, the property has 0.85 acres of developed, impervious land. The construction of this Project will repurpose 0.79 acres of the property's impervious land along with adding some additional impervious surfaces, bringing the total impervious area for the Project site to 1.80 acres and the total impervious area for the property to 1.86 acres. The Project will install water treatment devices to treat the water per the Massachusetts Stormwater Handbook.


16
126
Medway
PROJECT SITE
Basket
Google
N
NOT TO SCALE
BURNS McDONNELL
FIGURE 1-1
GENERAL VICINITY MAP
MEDWAY BESS

2.0 HYDROLOGY AND HYDRAULICS

The stormwater management design for the Project has been developed to minimize the downstream effects of development at the Site. The stormwater management design will meet or exceed the Massachusetts Stormwater Policy recommendations, and the Project will comply with MassDEP Stormwater Standards.

2.1 Runoff Data

Bentley PondPack software was utilized to model the stormwater runoff at the site. The SCS TR-55 methodology was used for this model to calculate the pre and post developed runoff rates for storage design. Tables 2.1 & 2.2 provide detailed information regarding curve numbers, land coverages and times of concentration for the Project. See Figures 2-1 and 2-2 in Appendix E for pre-construction and post-construction drainage areas and flow paths.

Table 2.1 Land Coverages

Land Coverage	Pre-Developed Area (ac)	Pre-Developed Curve Number (CN)	Post-Developed Area (ac)	Post-Developed Curve Number (CN)
Impervious	0.8	98	1.8	98
Crushed Rock – HSG A	0	76	0.7	76
Crushed Rock – HSG B	0	85	1.4	85
Woods – HSG A	0.9	57	0	57
Woods – HSG B	3.5	73	0	73
Landscaped – HSG B	0	61	1.3	61
Total Area	5.2		5.2	
Weighted CN		74		82

Table 2.2 Times of Concentrations

Pre-Developed Time of Concentration (hrs)	Post-Developed Time of Concentration (hrs)
0.424	0.099

2.2 Stormwater Management Facilities

A dry detention basin is proposed to be used as a stormwater management facility (SMF) at the site to attenuate the effects of higher runoff rates from the development of the site. The trapezoidal basin will be excavated soil and vegetated with a grass bottom and side slopes for erosion protection.

The basin will have a bottom elevation of 236' and a top elevation of 243'. The basin will have a concrete outfall structure with orifices strategically positioned to manage the outflow for the 2-year, 10-year, and 100-year design storms. A single 24" corrugated high density polyethylene pipe will gravity drain the stormwater from the outfall of the pond to the east of the Project site, where the site naturally drained prior to construction. The outlet will be protected with rip rap for erosion control.

2.3 Massachusetts Department of Environmental Protection Checklist

Standard 1: No New Untreated Discharges

The proposed Project will not discharge untreated stormwater from the site. The stormwater BMPs will provide treatment in compliance with the Massachusetts Stormwater Handbook and the outfalls of all BMPs will be designed to prevent erosion as stormwater leaves the site.

Standard 2: Peak Rate Attenuation

The proposed dry detention basins will provide peak attenuation for the 2-year, 24-hour, 10-year, 24-hour, and 100-year, 24-hour design storms. Table 2.6 below shows the pre- and post-development peak flows. The PondPack report is provided in Appendix D.

Table 2.3 Site Flow Modeling Results

Return Frequency (yr)	Pre-Developed Flow (cfs)	Post-Developed Flow without SMF (cfs)	Post-Developed Flow with SMF (cfs)	Peak Pond Elevation with SMF (feet)
2	5.02	10.37	4.69	238.15
10	11.25	19.63	11.14	239.34
100	22.84	35.64	20.96	240.91

Standard 3: Recharge

Loss of annual recharge to groundwater shall be minimized for this Project through the use of stormwater BMPs. Calculations are included in Appendix C.

Standard 4: Water Quality

The Project site has been designed with treatment BMPs that will meet the 80% TSS removal requirement based on the 0.5" Water Quality Volume. Calculations are provided in Appendix C.

Standard 5: Land Uses With Higher Potential Pollutant Loads

The Project site is not a designated site with high potential pollutant loads and therefore this standard does not apply.

Standard 6: Critical Areas

The Project site is not within an area determined to be critical and therefore this standard does not apply.

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

This Project is not a redevelopment and therefore this standard does not apply.

Standard 8: Construction Period Pollution Prevention and Erosion and Sediment Control

Soil erosion and sediment control measures will be implemented on site and a Stormwater Pollution Prevention Plan (SWPPP) with BMP devices will be prepared for the site and presented at a later date.

Standard 9: Operation and Maintenance Plan

Medway Grid is responsible for the operation and maintenance of the proposed Project. A long-term operation and maintenance plan will be prepared for the site and presented at a later date.

Standard 10: Prohibition of Illicit Discharges

There will be no illicit discharges on the Project site. Medway Grid will be responsible for adhering to the Maintenance and Operations Plan and preventing illicit discharges. Medway Grid will also file an Illicit Discharge Compliance Statement verifying that no unauthorized discharges exist on site and will include measures in the SWPPP to prevent illicit discharges into the stormwater system.

3.0 SOIL EROSION AND SEDIMENT CONTROL MEASURES

A soil erosion and sediment control plan and associated details have been developed to control sediment during construction activities. Silt fence will be installed around the perimeter of the areas to be disturbed prior to beginning construction. The silt fence will also be placed along the stormwater pond and around the soil stockpiles. The Project entrance will be stabilized with a 1.5" to 3" stone vehicle tracking pad to minimize sediment transport away from the site. Erosion control practices will be kept in place until the area has been permanently stabilized.

4.0 CONCLUSIONS

To accommodate the change in stormwater runoff by this Project, low-impact development strategies were selected in accordance with Volume 2, Chapter 2 of the Massachusetts Stormwater Handbook. The LID treatment train includes a network of perforated curtain drains, deep-sump catch basins, subsurface infiltration structures, a dry detention basin, and proprietary vortex units. Combined with the deep sump catch basins for pre-treatment, the subsurface infiltration structures are designed to attain the required 80% TSS removal rates and provide groundwater recharge. The dry detention basin is sized to attenuate peak discharges from the 2-, 10-, and 100-year storm events and will not exceed pre-development flow rates. The basin has an emergency spillway designed to safely pass stormwater from a storm greater than a 100-year, 24-hour storm event.

The rainfall depths used for the stormwater design for the Medway Grid Energy Storage Project were increased in accordance with the "Climate Resilience Design Standards and Guidelines" published by Massachusetts Environmental Policy Act. Rainfall depths for Medway, Massachusetts were obtained from the National Oceanic and Atmospheric Administration. The NOAA values were then increased by specific percentages based on the design life of the Project. The design life of the Project is expected to be 20 years, therefore the Mid-Century (2030/2050) percent increases were used to design the stormwater systems to accommodate the more frequent and severe storm events occurring with climate change.

APPENDIX A – FEMA FIRM PANEL

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Massachusetts State Plane Mainland Zone (FIPS zone 2001). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from digital orthophotography. Base map files were provided in digital format by Massachusetts Geographic Information Systems (MassGIS). Ortho imagery was produced at a scale of 1:5,000. Aerial photography is dated April 2005.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

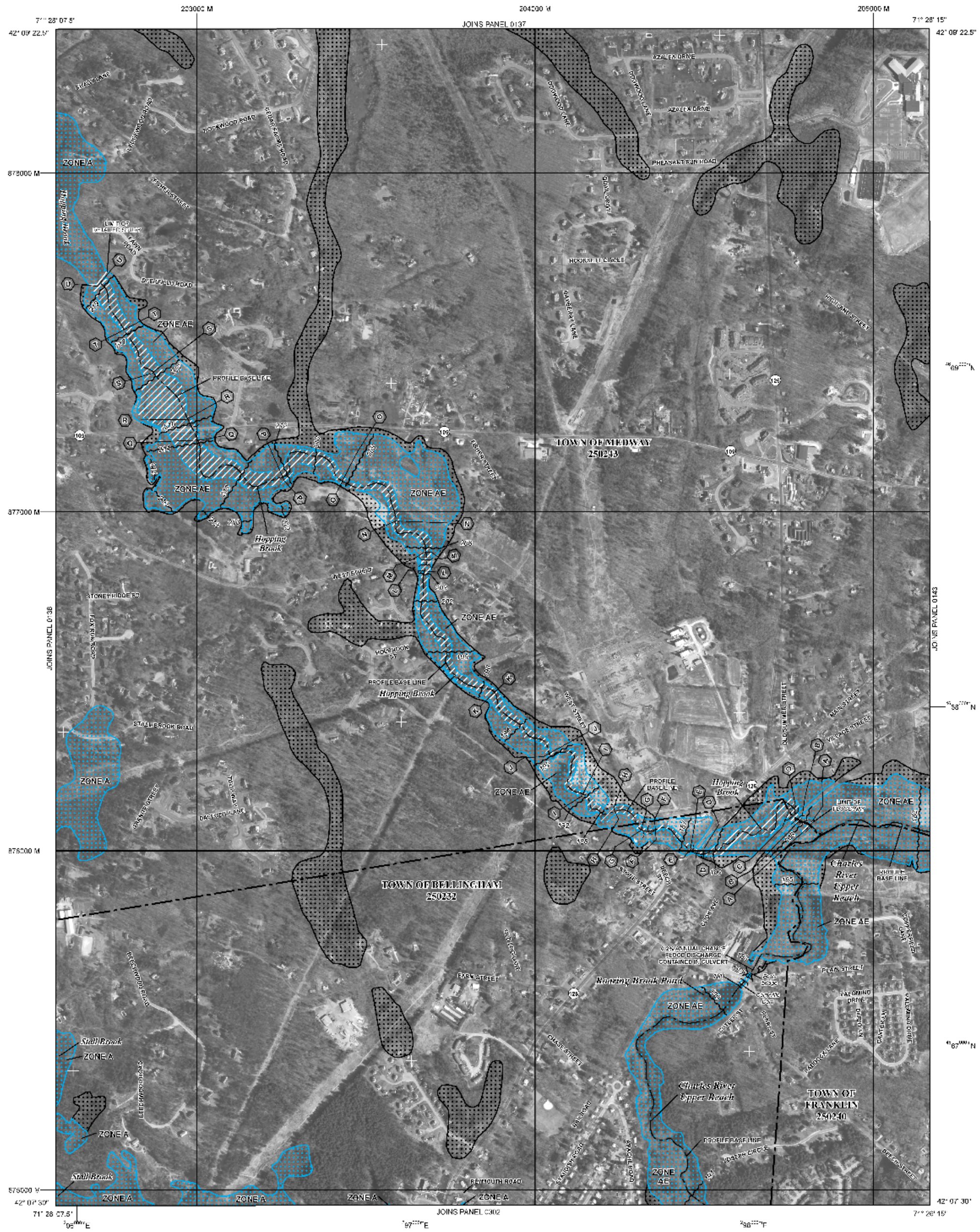
Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center** (MSC) website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A: Cross section line
23 — 23: Transect line
Culvert
Bridge
45° 02' 08", 93° 02' 12": Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
4989000 M: 1000-meter ticks: Massachusetts State Plane Mainland Zone (FIPS Zone 2001), Lambert Conformal Conic projection
^{47}89^{000m}N: 1000-meter Universal Transverse Mercator grid values, zone 19N
DX5510 ×: Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5: River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 17, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0139E

FIRM
FLOOD INSURANCE RATE MAP
NORFOLK COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)

PANEL 139 OF 430
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BELLINGHAM, TOWN OF	[illegible]	0139	E
FRANKLIN, TOWN OF	[illegible]	0139	E
MEDWAY, TOWN OF	[illegible]	0139	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

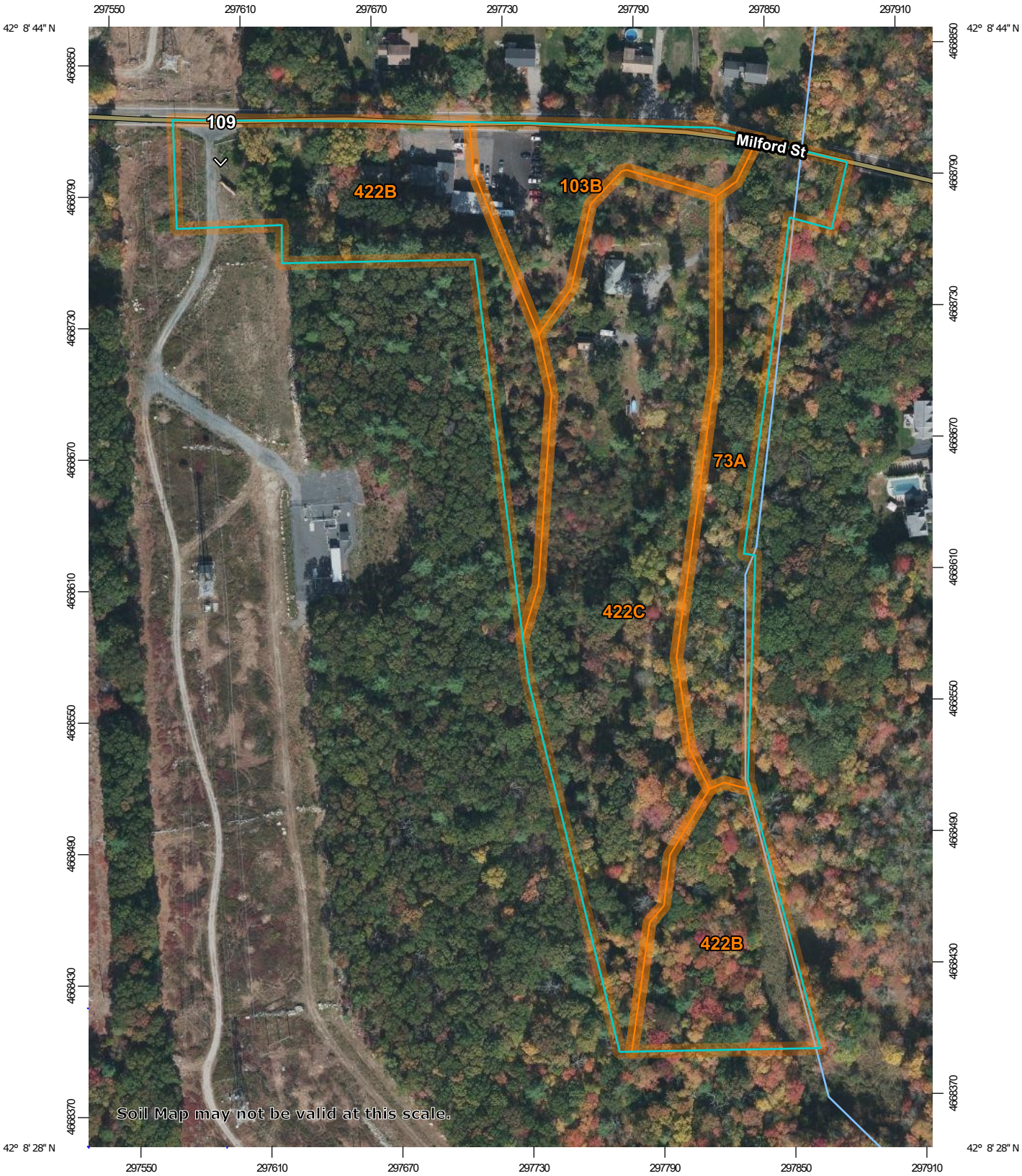
MAP NUMBER
25021C0139E

EFFECTIVE DATE
JULY 17, 2012

Federal Emergency Management Agency

APPENDIX B – SOIL RESOURCE REPORT

Soil Map—Norfolk and Suffolk Counties, Massachusetts
(Medway Grid Energy Storage Project)



Map Scale: 1:2,490 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

Soil Map—Norfolk and Suffolk Counties, Massachusetts
(Medway Grid Energy Storage 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 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 17, Sep 3, 2021

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

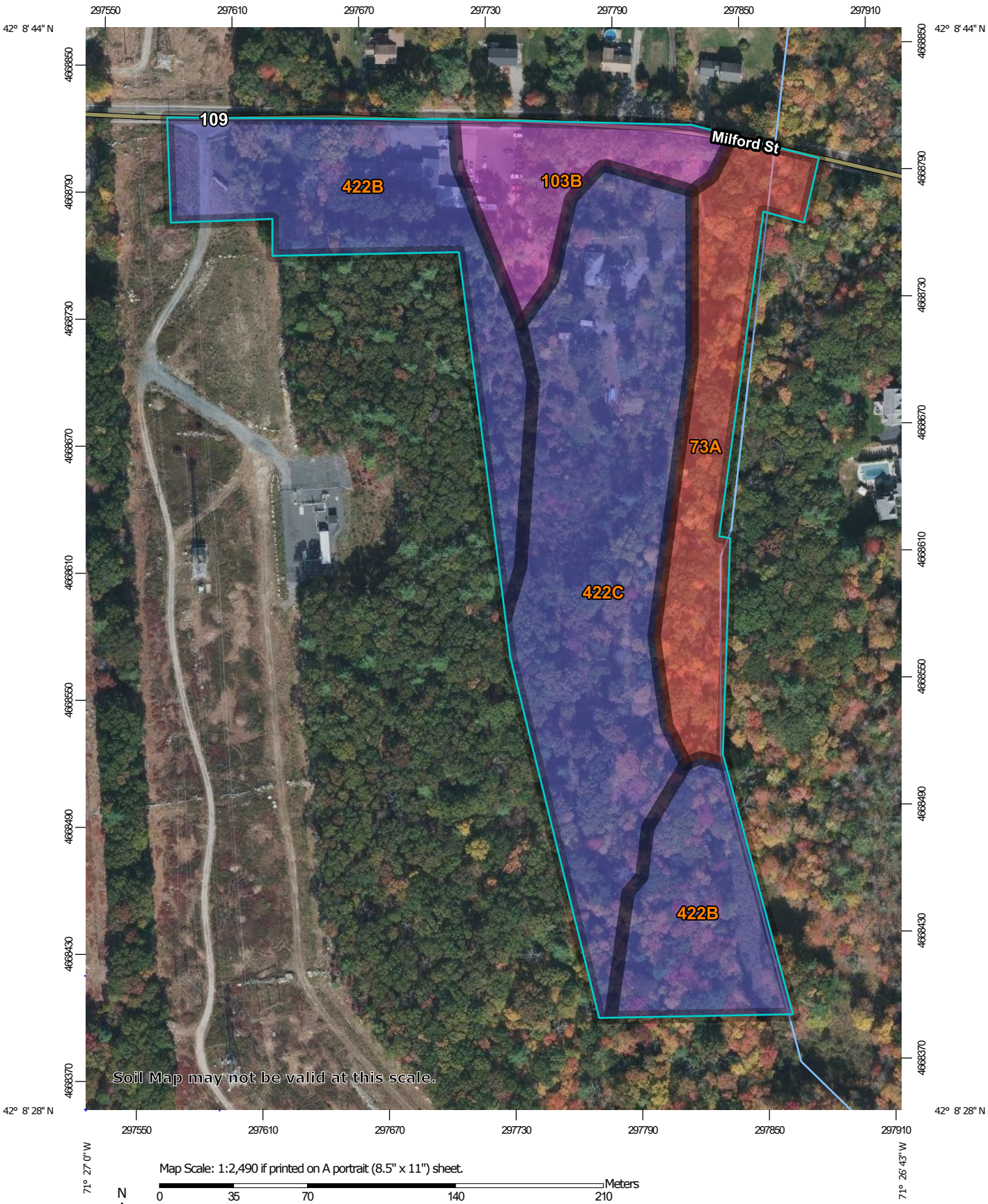
Date(s) aerial images were photographed: Aug 31, 2020—Oct 22, 2020

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
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	2.2	15.9%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	1.3	9.7%
422B	Canton fine sandy loam, 0 to 8 percent slopes, extremely stony	4.6	33.0%
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony	5.7	41.4%
Totals for Area of Interest		**13.8**	**100.0%**

Hydrologic Soil Group—Norfolk and Suffolk Counties, Massachusetts
(Medway Grid Energy Storage Project)



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N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

Hydrologic Soil Group—Norfolk and Suffolk Counties, Massachusetts
(Medway Grid Energy Storage Project)

MAP LEGEND

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

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

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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.

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Survey Area Data: Version 17, Sep 3, 2021

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

Date(s) aerial images were photographed: Aug 31, 2020—Oct 22, 2020

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	D	2.2	15.9%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	A	1.3	9.7%
422B	Canton fine sandy loam, 0 to 8 percent slopes, extremely stony	B	4.6	33.0%
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony	B	5.7	41.4%
Totals for Area of Interest			**13.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C – STORMWATER QUALITY CALCULATIONS

BURNS McDONNELL

Client *Medway Grid* Page _____ of *1*
Project *Medway BESS* Date 12/06/21 Made By *ERA*
Checked By _____
WATER QUALITY CALCULATIONS Preliminary x Final _____

1. REQUIREMENT

PER STANDARD 4, STORMWATER MANAGEMENT SYSTEMS SHALL BE DESIGNED TO REMOVE 80% OF THE AVERAGE ANNUAL POST-CONSTRUCTION LOAD OF TSS. BMPS MUST BE SIZED TO CAPTURE THE REQUIRED WQV.

2. WQv CALCULATION

REQUIRED WATER QUALITY VOLUME EQUALS 0.5 INCHES OF RUNOFF TIMES THE TOTAL IMPERVIOUS AREA OF THE POST-DEVELOPMENT SITE.

IMPERVIOUS AREA= 1.8 ACRES

WQv = 3,267 CF

3. GROUNDWATER RECHARGE VOLUME

THE NRCS HYDROLOGIC GROUP FOR THE SITE SOIL IS A COMBINATION OF A AND B. THEREFORE, A WEIGHTED INFILTRATION RATE OF 0.41 INCHES WAS USED PER THE MASSACHUSETTS STORMWATER HANDBOOK.

THE REQUIRED RECHARGE VOLUME IS CALCULATED BY MULTIPLYING THE TOTAL IMPERVOUS AREA BY THE INFILTRATION RATE.

RRv= 2,679 CF

APPENDIX D – PONDPACK REPORT

Stormwater Report

Project Summary	
Title	Medway Grid Energy Storage Project
Engineer	E. Asnicar
Company	Burns & McDonnell
Date	12/9/2021

Notes

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Stormwater Report

Subsection: User Notifications

User Notifications

Message Id	15
Scenario	100yr, 24hr
Element Type	Composite Outlet Structure
Element Id	49
Label	BESS Outlet Structure
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning
Message Id	15
Scenario	10yr, 24hr
Element Type	Composite Outlet Structure
Element Id	49
Label	BESS Outlet Structure
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning
Message Id	15
Scenario	2yr, 24hr
Element Type	Composite Outlet Structure
Element Id	49
Label	BESS Outlet Structure
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning

Stormwater Report

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
West-Pre	2yr, 24hr	2	0.133	12.150	1.44
West-Pre	10yr, 24hr	10	0.269	12.150	2.94
West-Pre	100yr, 24hr	100	0.524	12.150	5.61
EastPre	2yr, 24hr	2	0.444	12.350	3.58
EastPre	10yr, 24hr	10	0.988	12.300	8.31
EastPre	100yr, 24hr	100	2.050	12.300	17.23
Substation-Post	2yr, 24hr	2	0.179	12.100	2.23
Substation-Post	10yr, 24hr	10	0.340	12.100	4.12
Substation-Post	100yr, 24hr	100	0.629	12.100	7.37
Main BESS	2yr, 24hr	2	0.507	12.100	6.23
Main BESS	10yr, 24hr	10	1.002	12.100	12.16
Main BESS	100yr, 24hr	100	1.911	12.100	22.51
West-Post	2yr, 24hr	2	0.156	12.100	1.91
West-Post	10yr, 24hr	10	0.282	12.100	3.35
West-Post	100yr, 24hr	100	0.505	12.100	5.76

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
01-WestPre	2yr, 24hr	2	0.133	12.150	1.44
01-WestPre	10yr, 24hr	10	0.269	12.150	2.94
01-WestPre	100yr, 24hr	100	0.524	12.150	5.61
02-EastPre	2yr, 24hr	2	0.444	12.350	3.58
02-EastPre	10yr, 24hr	10	0.988	12.300	8.31
02-EastPre	100yr, 24hr	100	2.050	12.300	17.23
04-BESS-Post	2yr, 24hr	2	0.797	12.300	4.69
04-BESS-Post	10yr, 24hr	10	1.577	12.250	11.14
04-BESS-Post	100yr, 24hr	100	2.996	12.200	20.96

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
MainPond (IN)	2yr, 24hr	2	0.842	12.100	10.37	(N/A)	(N/A)
MainPond (OUT)	2yr, 24hr	2	0.797	12.300	4.69	238.15	0.214
MainPond (IN)	10yr, 24hr	10	1.624	12.100	19.63	(N/A)	(N/A)

Stormwater Report

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
MainPond (OUT)	10yr, 24hr	10	1.577	12.250	11.14	239.34	0.373
MainPond (IN)	100yr, 24hr	100	3.046	12.100	35.64	(N/A)	(N/A)
MainPond (OUT)	100yr, 24hr	100	2.996	12.200	20.96	240.91	0.633

Stormwater Report

Subsection: Time-Depth Curve
Label: 24hr
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time-Depth Curve: 100yr, 24hr	
Label	100yr, 24hr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.3	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.9	0.9	0.9	0.9
7.500	0.9	1.0	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.2
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.4	5.8	6.1	6.3
12.500	6.5	6.6	6.7	6.7	6.8
13.000	6.9	7.0	7.0	7.1	7.1
13.500	7.2	7.3	7.3	7.4	7.4
14.000	7.5	7.5	7.5	7.6	7.6
14.500	7.7	7.7	7.7	7.8	7.8
15.000	7.9	7.9	7.9	7.9	8.0
15.500	8.0	8.0	8.1	8.1	8.1
16.000	8.1	8.2	8.2	8.2	8.2
16.500	8.3	8.3	8.3	8.3	8.3

Stormwater Report

Subsection: Time-Depth Curve
Label: 24hr
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.4	8.4	8.4	8.4	8.4
17.500	8.4	8.5	8.5	8.5	8.5
18.000	8.5	8.5	8.6	8.6	8.6
18.500	8.6	8.6	8.6	8.6	8.7
19.000	8.7	8.7	8.7	8.7	8.7
19.500	8.7	8.7	8.8	8.8	8.8
20.000	8.8	8.8	8.8	8.8	8.8
20.500	8.9	8.9	8.9	8.9	8.9
21.000	8.9	8.9	8.9	8.9	9.0
21.500	9.0	9.0	9.0	9.0	9.0
22.000	9.0	9.0	9.0	9.0	9.1
22.500	9.1	9.1	9.1	9.1	9.1
23.000	9.1	9.1	9.1	9.1	9.1
23.500	9.1	9.2	9.2	9.2	9.2
24.000	9.2	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time-Depth Curve
Label: 24hr
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time-Depth Curve: 10yr, 24hr	
Label	10yr, 24hr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.4
5.500	0.4	0.4	0.4	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.5	0.5	0.5	0.5	0.5
7.000	0.5	0.5	0.5	0.6	0.6
7.500	0.6	0.6	0.6	0.6	0.6
8.000	0.6	0.7	0.7	0.7	0.7
8.500	0.7	0.7	0.8	0.8	0.8
9.000	0.8	0.9	0.9	0.9	0.9
9.500	0.9	1.0	1.0	1.0	1.0
10.000	1.1	1.1	1.1	1.2	1.2
10.500	1.2	1.3	1.3	1.3	1.4
11.000	1.4	1.5	1.5	1.6	1.6
11.500	1.7	1.8	1.9	2.1	2.4
12.000	2.8	3.3	3.6	3.8	3.9
12.500	4.0	4.1	4.1	4.2	4.2
13.000	4.3	4.3	4.3	4.4	4.4
13.500	4.5	4.5	4.5	4.6	4.6
14.000	4.6	4.6	4.7	4.7	4.7
14.500	4.7	4.8	4.8	4.8	4.8
15.000	4.9	4.9	4.9	4.9	4.9
15.500	5.0	5.0	5.0	5.0	5.0
16.000	5.0	5.1	5.1	5.1	5.1
16.500	5.1	5.1	5.1	5.2	5.2

Stormwater Report

Subsection: Time-Depth Curve
Label: 24hr
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	5.2	5.2	5.2	5.2	5.2
17.500	5.2	5.2	5.3	5.3	5.3
18.000	5.3	5.3	5.3	5.3	5.3
18.500	5.3	5.3	5.3	5.4	5.4
19.000	5.4	5.4	5.4	5.4	5.4
19.500	5.4	5.4	5.4	5.4	5.4
20.000	5.4	5.5	5.5	5.5	5.5
20.500	5.5	5.5	5.5	5.5	5.5
21.000	5.5	5.5	5.5	5.5	5.5
21.500	5.5	5.6	5.6	5.6	5.6
22.000	5.6	5.6	5.6	5.6	5.6
22.500	5.6	5.6	5.6	5.6	5.6
23.000	5.6	5.6	5.6	5.7	5.7
23.500	5.7	5.7	5.7	5.7	5.7
24.000	5.7	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time-Depth Curve
Label: 24hr
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time-Depth Curve: 2yr, 24hr	
Label	2yr, 24hr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.3	0.3
6.000	0.3	0.3	0.3	0.3	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.3	0.3	0.3	0.4	0.4
7.500	0.4	0.4	0.4	0.4	0.4
8.000	0.4	0.4	0.4	0.4	0.5
8.500	0.5	0.5	0.5	0.5	0.5
9.000	0.5	0.5	0.6	0.6	0.6
9.500	0.6	0.6	0.6	0.7	0.7
10.000	0.7	0.7	0.7	0.7	0.8
10.500	0.8	0.8	0.8	0.9	0.9
11.000	0.9	0.9	1.0	1.0	1.0
11.500	1.1	1.1	1.2	1.4	1.5
12.000	1.8	2.1	2.3	2.4	2.5
12.500	2.6	2.6	2.6	2.7	2.7
13.000	2.7	2.8	2.8	2.8	2.8
13.500	2.9	2.9	2.9	2.9	2.9
14.000	3.0	3.0	3.0	3.0	3.0
14.500	3.0	3.1	3.1	3.1	3.1
15.000	3.1	3.1	3.1	3.1	3.2
15.500	3.2	3.2	3.2	3.2	3.2
16.000	3.2	3.2	3.2	3.3	3.3
16.500	3.3	3.3	3.3	3.3	3.3

Stormwater Report

Subsection: Time-Depth Curve
Label: 24hr
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.3	3.3	3.3	3.3	3.3
17.500	3.3	3.4	3.4	3.4	3.4
18.000	3.4	3.4	3.4	3.4	3.4
18.500	3.4	3.4	3.4	3.4	3.4
19.000	3.4	3.4	3.4	3.4	3.5
19.500	3.5	3.5	3.5	3.5	3.5
20.000	3.5	3.5	3.5	3.5	3.5
20.500	3.5	3.5	3.5	3.5	3.5
21.000	3.5	3.5	3.5	3.5	3.5
21.500	3.5	3.6	3.6	3.6	3.6
22.000	3.6	3.6	3.6	3.6	3.6
22.500	3.6	3.6	3.6	3.6	3.6
23.000	3.6	3.6	3.6	3.6	3.6
23.500	3.6	3.6	3.6	3.6	3.6
24.000	3.6	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time of Concentration Calculations
Label: EastPre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	49.50 ft
Manning's n	0.200
Slope	0.180 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.29 ft/s
Segment Time of Concentration	0.047 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	188.00 ft
Is Paved?	False
Slope	0.010 ft/ft
Average Velocity	1.61 ft/s
Segment Time of Concentration	0.032 hours

Segment #3: TR-55 Sheet Flow	
Hydraulic Length	139.00 ft
Manning's n	0.200
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.344 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.424 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: EastPre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: EastPre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	49.50 ft
Manning's n	0.200
Slope	0.180 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.29 ft/s
Segment Time of Concentration	0.047 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	188.00 ft
Is Paved?	False
Slope	0.010 ft/ft
Average Velocity	1.61 ft/s
Segment Time of Concentration	0.032 hours

Segment #3: TR-55 Sheet Flow	
Hydraulic Length	139.00 ft
Manning's n	0.200
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.344 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.424 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: EastPre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: EastPre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	49.50 ft
Manning's n	0.200
Slope	0.180 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.29 ft/s
Segment Time of Concentration	0.047 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	188.00 ft
Is Paved?	False
Slope	0.010 ft/ft
Average Velocity	1.61 ft/s
Segment Time of Concentration	0.032 hours

Segment #3: TR-55 Sheet Flow	
Hydraulic Length	139.00 ft
Manning's n	0.200
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.344 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.424 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: EastPre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Main BESS
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	158.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.73 ft/s
Segment Time of Concentration	0.060 hours

Segment #2: TR-55 Channel Flow	
Flow Area	0.9 ft²
Hydraulic Length	372.00 ft
Manning's n	0.020
Slope	0.005 ft/ft
Wetted Perimeter	2.48 ft
Average Velocity	2.68 ft/s
Segment Time of Concentration	0.039 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.099 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Main BESS
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

==== SCS Channel Flow

Tc =	R = Qa / Wp
	V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n
	(Lf / V) / 3600
Where:	R= Hydraulic radius
	Aq= Flow area, square feet
	Wp= Wetted perimeter, feet
	V= Velocity, ft/sec
	Sf= Slope, ft/ft
	n= Manning's n
	Tc= Time of concentration, hours
	Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours
	n= Manning's n
	Lf= Flow length, feet
	P= 2yr, 24hr Rain depth, inches
	Sf= Slope, %

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Main BESS
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	158.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.73 ft/s
Segment Time of Concentration	0.060 hours

Segment #2: TR-55 Channel Flow	
Flow Area	0.9 ft²
Hydraulic Length	372.00 ft
Manning's n	0.020
Slope	0.005 ft/ft
Wetted Perimeter	2.48 ft
Average Velocity	2.68 ft/s
Segment Time of Concentration	0.039 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.099 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Main BESS
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

==== SCS Channel Flow

Tc =	R = Qa / Wp
	V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n
	(Lf / V) / 3600
Where:	R= Hydraulic radius
	Aq= Flow area, square feet
	Wp= Wetted perimeter, feet
	V= Velocity, ft/sec
	Sf= Slope, ft/ft
	n= Manning's n
	Tc= Time of concentration, hours
	Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours
	n= Manning's n
	Lf= Flow length, feet
	P= 2yr, 24hr Rain depth, inches
	Sf= Slope, %

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Main BESS
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	158.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.73 ft/s
Segment Time of Concentration	0.060 hours

Segment #2: TR-55 Channel Flow	
Flow Area	0.9 ft²
Hydraulic Length	372.00 ft
Manning's n	0.020
Slope	0.005 ft/ft
Wetted Perimeter	2.48 ft
Average Velocity	2.68 ft/s
Segment Time of Concentration	0.039 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.099 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Main BESS
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

==== SCS Channel Flow

Tc =	R = Qa / Wp
	V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n
	(Lf / V) / 3600
Where:	R= Hydraulic radius
	Aq= Flow area, square feet
	Wp= Wetted perimeter, feet
	V= Velocity, ft/sec
	Sf= Slope, ft/ft
	n= Manning's n
	Tc= Time of concentration, hours
	Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours
	n= Manning's n
	Lf= Flow length, feet
	P= 2yr, 24hr Rain depth, inches
	Sf= Slope, %

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Substation-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	107.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.67 ft/s
Segment Time of Concentration	0.044 hours

Segment #2: TR-55 Channel Flow	
Flow Area	0.9 ft²
Hydraulic Length	231.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	2.48 ft
Average Velocity	3.55 ft/s
Segment Time of Concentration	0.018 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Substation-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

==== SCS Channel Flow

Tc =	R = Qa / Wp
	V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n
	(Lf / V) / 3600
Where:	R= Hydraulic radius
	Aq= Flow area, square feet
	Wp= Wetted perimeter, feet
	V= Velocity, ft/sec
	Sf= Slope, ft/ft
	n= Manning's n
	Tc= Time of concentration, hours
	Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours
	n= Manning's n
	Lf= Flow length, feet
	P= 2yr, 24hr Rain depth, inches
	Sf= Slope, %

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Substation-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	107.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.67 ft/s
Segment Time of Concentration	0.044 hours

Segment #2: TR-55 Channel Flow	
Flow Area	0.9 ft²
Hydraulic Length	231.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	2.48 ft
Average Velocity	3.55 ft/s
Segment Time of Concentration	0.018 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Substation-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

==== SCS Channel Flow

Tc =	R = Qa / Wp
	V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n
	(Lf / V) / 3600
Where:	R= Hydraulic radius
	Aq= Flow area, square feet
	Wp= Wetted perimeter, feet
	V= Velocity, ft/sec
	Sf= Slope, ft/ft
	n= Manning's n
	Tc= Time of concentration, hours
	Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours
	n= Manning's n
	Lf= Flow length, feet
	P= 2yr, 24hr Rain depth, inches
	Sf= Slope, %

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Substation-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	107.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.67 ft/s
Segment Time of Concentration	0.044 hours

Segment #2: TR-55 Channel Flow	
Flow Area	0.9 ft²
Hydraulic Length	231.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	2.48 ft
Average Velocity	3.55 ft/s
Segment Time of Concentration	0.018 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: Substation-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

==== SCS Channel Flow

Tc =	R = Qa / Wp
	V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n
	(Lf / V) / 3600
Where:	R= Hydraulic radius
	Aq= Flow area, square feet
	Wp= Wetted perimeter, feet
	V= Velocity, ft/sec
	Sf= Slope, ft/ft
	n= Manning's n
	Tc= Time of concentration, hours
	Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours
	n= Manning's n
	Lf= Flow length, feet
	P= 2yr, 24hr Rain depth, inches
	Sf= Slope, %

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	179.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.75 ft/s
Segment Time of Concentration	0.067 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	179.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.75 ft/s
Segment Time of Concentration	0.067 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	179.00 ft
Manning's n	0.020
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.75 ft/s
Segment Time of Concentration	0.067 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Pre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	87.00 ft
Manning's n	0.400
Slope	0.069 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.13 ft/s
Segment Time of Concentration	0.190 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	80.00 ft
Is Paved?	False
Slope	0.063 ft/ft
Average Velocity	4.03 ft/s
Segment Time of Concentration	0.006 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.196 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Pre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Pre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	87.00 ft
Manning's n	0.400
Slope	0.069 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.13 ft/s
Segment Time of Concentration	0.190 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	80.00 ft
Is Paved?	False
Slope	0.063 ft/ft
Average Velocity	4.03 ft/s
Segment Time of Concentration	0.006 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.196 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Pre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Pre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	87.00 ft
Manning's n	0.400
Slope	0.069 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.13 ft/s
Segment Time of Concentration	0.190 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	80.00 ft
Is Paved?	False
Slope	0.063 ft/ft
Average Velocity	4.03 ft/s
Segment Time of Concentration	0.006 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.196 hours

Stormwater Report

Subsection: Time of Concentration Calculations
Label: West-Pre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Report

Subsection: Runoff CN-Area
Label: EastPre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.543	0.0	0.0	98.000
woods - group A	57.000	0.862	0.0	0.0	57.000
woods - group B	73.000	2.798	0.0	0.0	73.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	4.203	(N/A)	(N/A)	72.950

Stormwater Report

Subsection: Runoff CN-Area
Label: EastPre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.543	0.0	0.0	98.000
woods - group A	57.000	0.862	0.0	0.0	57.000
woods - group B	73.000	2.798	0.0	0.0	73.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	4.203	(N/A)	(N/A)	72.950

Stormwater Report

Subsection: Runoff CN-Area
Label: EastPre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.543	0.0	0.0	98.000
woods - group A	57.000	0.862	0.0	0.0	57.000
woods - group B	73.000	2.798	0.0	0.0	73.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	4.203	(N/A)	(N/A)	72.950

Stormwater Report

Subsection: Runoff CN-Area
Label: Main BESS
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
landscaping/trees	61.000	0.258	0.0	0.0	61.000
grass	61.000	0.718	0.0	0.0	61.000
impervious	98.000	0.718	0.0	0.0	98.000
crushed rock - group A	76.000	0.742	0.0	0.0	76.000
crushed rock - group B	85.000	0.416	0.0	0.0	85.000
paved roads	98.000	0.490	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.341	(N/A)	(N/A)	80.697

Stormwater Report

Subsection: Runoff CN-Area
Label: Main BESS
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
landscaping/trees	61.000	0.258	0.0	0.0	61.000
grass	61.000	0.718	0.0	0.0	61.000
impervious	98.000	0.718	0.0	0.0	98.000
crushed rock - group A	76.000	0.742	0.0	0.0	76.000
crushed rock - group B	85.000	0.416	0.0	0.0	85.000
paved roads	98.000	0.490	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.341	(N/A)	(N/A)	80.697

Stormwater Report

Subsection: Runoff CN-Area
Label: Main BESS
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
landscaping/trees	61.000	0.258	0.0	0.0	61.000
grass	61.000	0.718	0.0	0.0	61.000
impervious	98.000	0.718	0.0	0.0	98.000
crushed rock - group A	76.000	0.742	0.0	0.0	76.000
crushed rock - group B	85.000	0.416	0.0	0.0	85.000
paved roads	98.000	0.490	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.341	(N/A)	(N/A)	80.697

Stormwater Report

Subsection: Runoff CN-Area
Label: Substation-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.102	0.0	0.0	98.000
grass	61.000	0.186	0.0	0.0	61.000
crushed rock	85.000	0.624	0.0	0.0	85.000
paved roads	98.000	0.132	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.044	(N/A)	(N/A)	83.642

Stormwater Report

Subsection: Runoff CN-Area
Label: Substation-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.102	0.0	0.0	98.000
grass	61.000	0.186	0.0	0.0	61.000
crushed rock	85.000	0.624	0.0	0.0	85.000
paved roads	98.000	0.132	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.044	(N/A)	(N/A)	83.642

Stormwater Report

Subsection: Runoff CN-Area
Label: Substation-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.102	0.0	0.0	98.000
grass	61.000	0.186	0.0	0.0	61.000
crushed rock	85.000	0.624	0.0	0.0	85.000
paved roads	98.000	0.132	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.044	(N/A)	(N/A)	83.642

Stormwater Report

Subsection: Runoff CN-Area
Label: West-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
landscaped	61.000	0.098	0.0	0.0	61.000
impervious	98.000	0.164	0.0	0.0	98.000
crushed rock - grp B	85.000	0.335	0.0	0.0	85.000
asphalt road	98.000	0.187	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.784	(N/A)	(N/A)	87.799

Stormwater Report

Subsection: Runoff CN-Area
Label: West-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
landscaped	61.000	0.098	0.0	0.0	61.000
impervious	98.000	0.164	0.0	0.0	98.000
crushed rock - grp B	85.000	0.335	0.0	0.0	85.000
asphalt road	98.000	0.187	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.784	(N/A)	(N/A)	87.799

Stormwater Report

Subsection: Runoff CN-Area
Label: West-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
landscaped	61.000	0.098	0.0	0.0	61.000
impervious	98.000	0.164	0.0	0.0	98.000
crushed rock - grp B	85.000	0.335	0.0	0.0	85.000
asphalt road	98.000	0.187	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.784	(N/A)	(N/A)	87.799

Stormwater Report

Subsection: Runoff CN-Area
Label: West-Pre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.245	0.0	0.0	98.000
woods/grass	73.000	0.707	0.0	0.0	73.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.952	(N/A)	(N/A)	79.437

Stormwater Report

Subsection: Runoff CN-Area
Label: West-Pre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.245	0.0	0.0	98.000
woods/grass	73.000	0.707	0.0	0.0	73.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.952	(N/A)	(N/A)	79.437

Stormwater Report

Subsection: Runoff CN-Area
Label: West-Pre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
impervious	98.000	0.245	0.0	0.0	98.000
woods/grass	73.000	0.707	0.0	0.0	73.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.952	(N/A)	(N/A)	79.437

Stormwater Report

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method (Computational Notes)

Definition of Terms

At	Total area (acres): At = Ai+Ap
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate (time^-1)
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of 0.1333Tc, rtm, and th (Smallest dt is then adjusted to match up with Tp)
UDdt	User specified override computational main time increment (only used if UDdt is => .1333Tc)
D(t)	Point on distribution curve (fraction of P) for time step t
K	2 / (1 + (Tr/Tp)): default K = 0.75: (for Tr/Tp = 1.67)
Ks	Hydrograph shape factor = Unit Conversions * K: = ((1hr/3600sec) * (1ft/12in) * ((5280ft)**2/sq.mi)) * K Default Ks = 645.333 * 0.75 = 484
Lag	Lag time from center of excess runoff (dt) to Tp: Lag = 0.6Tc
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pi(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = (Ks * A * Q) / Tp (where Q = 1in. runoff, A=sq.mi.)
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: Si = (1000/CNi) - 10
Sp	S for pervious area: Sp = (1000/CNp) - 10
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: Tb = Tp + Tr
Tp	Time (hrs) to peak of a unit hydrograph: Tp = (dt/2) + Lag
Tr	Time (hrs) of receding limb of unit hydrograph: Tr = ratio of Tp

Stormwater Report

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method
Computational Notes
Precipitation

Column (1)	Time for time step t
Column (2)	D(t) = Point on distribution curve for time step t
Column (3)	Pi(t) = Pa(t) - Pa(t-1): Col.(4) - Preceding Col.(4)
Column (4)	Pa(t) = D(t) x P: Col.(2) x P

Pervious Area Runoff (using SCS Runoff CN Method)

Column (5)	Rap(t) = Accumulated pervious runoff for time step t
	If (Pa(t) is <= 0.2Sp) then use: Rap(t) = 0.0
	If (Pa(t) is > 0.2Sp) then use:
	
	Rap(t) = (Col.(4)-0.2Sp)**2 / (Col.(4)+0.8Sp)

Column (6)	Rip(t) = Incremental pervious runoff for time step t Rip(t) = Rap(t) - Rap(t-1) Rip(t) = Col.(5) for current row - Col.(5) for preceding row.

Impervious Area Runoff

Column (7 & 8)...	Did not specify to use impervious areas.

Incremental Weighted Runoff

Column (9)	R(t) = (Ap/At) x Rip(t) + (Ai/At) x Rii(t) R(t) = (Ap/At) x Col.(6) + (Ai/At) x Col.(8)

SCS Unit Hydrograph Method

Column (10)	Q(t) is computed with the SCS unit hydrograph method using R(t) and Qu(t).

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: EastPre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.424 hours
Area (User Defined)	4.203 acres

Computational Time Increment	0.056 hours
Time to Peak (Computed)	12.316 hours
Flow (Peak, Computed)	3.62 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	3.58 ft³/s

Drainage Area	
SCS CN (Composite)	73.000
Area (User Defined)	4.203 acres
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.3 in
Runoff Volume (Pervious)	0.446 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.444 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.424 hours
Computational Time Increment	0.056 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: EastPre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.24 ft³/s
Unit peak time, Tp	0.282 hours
Unit receding limb, Tr	1.130 hours
Total unit time, Tb	1.412 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: EastPre Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.424 hours
Area (User Defined)	4.203 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.450	0.00	0.00	0.00	0.01	0.01
10.700	0.01	0.02	0.02	0.03	0.03
10.950	0.04	0.05	0.05	0.06	0.07
11.200	0.08	0.09	0.10	0.11	0.13
11.450	0.14	0.16	0.18	0.20	0.24
11.700	0.28	0.35	0.44	0.55	0.70
11.950	0.91	1.20	1.58	2.06	2.58
12.200	3.07	3.41	3.57	3.58	3.47
12.450	3.27	3.02	2.76	2.49	2.23
12.700	1.98	1.75	1.56	1.40	1.26
12.950	1.15	1.06	0.98	0.92	0.86
13.200	0.81	0.77	0.74	0.71	0.68
13.450	0.66	0.64	0.63	0.61	0.60
13.700	0.59	0.58	0.57	0.56	0.55
13.950	0.54	0.53	0.52	0.51	0.50
14.200	0.49	0.48	0.47	0.47	0.46
14.450	0.45	0.45	0.44	0.44	0.43
14.700	0.43	0.42	0.42	0.41	0.41
14.950	0.40	0.40	0.39	0.39	0.38
15.200	0.38	0.37	0.37	0.36	0.36
15.450	0.35	0.35	0.34	0.34	0.33
15.700	0.33	0.32	0.32	0.31	0.30
15.950	0.30	0.29	0.29	0.28	0.28
16.200	0.27	0.27	0.27	0.26	0.26
16.450	0.25	0.25	0.25	0.25	0.24
16.700	0.24	0.24	0.24	0.23	0.23
16.950	0.23	0.23	0.22	0.22	0.22
17.200	0.22	0.22	0.21	0.21	0.21
17.450	0.21	0.20	0.20	0.20	0.20
17.700	0.19	0.19	0.19	0.19	0.18
17.950	0.18	0.18	0.18	0.17	0.17
18.200	0.17	0.17	0.17	0.16	0.16
18.450	0.16	0.16	0.16	0.16	0.16

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: EastPre Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.700	0.16	0.16	0.16	0.16	0.15
18.950	0.15	0.15	0.15	0.15	0.15
19.200	0.15	0.15	0.15	0.15	0.15
19.450	0.15	0.15	0.15	0.15	0.14
19.700	0.14	0.14	0.14	0.14	0.14
19.950	0.14	0.14	0.14	0.14	0.14
20.200	0.14	0.14	0.14	0.13	0.13
20.450	0.13	0.13	0.13	0.13	0.13
20.700	0.13	0.13	0.13	0.13	0.13
20.950	0.13	0.13	0.13	0.13	0.13
21.200	0.13	0.12	0.12	0.12	0.12
21.450	0.12	0.12	0.12	0.12	0.12
21.700	0.12	0.12	0.12	0.12	0.12
21.950	0.12	0.12	0.12	0.12	0.11
22.200	0.11	0.11	0.11	0.11	0.11
22.450	0.11	0.11	0.11	0.11	0.11
22.700	0.11	0.11	0.11	0.11	0.11
22.950	0.11	0.11	0.10	0.10	0.10
23.200	0.10	0.10	0.10	0.10	0.10
23.450	0.10	0.10	0.10	0.10	0.10
23.700	0.10	0.10	0.10	0.10	0.09
23.950	0.09	0.09	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: EastPre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.424 hours
Area (User Defined)	4.203 acres

Computational Time Increment	0.056 hours
Time to Peak (Computed)	12.316 hours
Flow (Peak, Computed)	8.35 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	8.31 ft³/s

Drainage Area	
SCS CN (Composite)	73.000
Area (User Defined)	4.203 acres
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	0.992 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.988 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.424 hours
Computational Time Increment	0.056 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: EastPre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.24 ft³/s
Unit peak time, Tp	0.282 hours
Unit receding limb, Tr	1.130 hours
Total unit time, Tb	1.412 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EastPre Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.424 hours
Area (User Defined)	4.203 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.700	0.00	0.00	0.00	0.00	0.01
8.950	0.01	0.01	0.02	0.02	0.03
9.200	0.03	0.03	0.04	0.05	0.05
9.450	0.06	0.06	0.07	0.08	0.08
9.700	0.09	0.10	0.10	0.11	0.12
9.950	0.12	0.13	0.14	0.15	0.16
10.200	0.17	0.18	0.19	0.20	0.21
10.450	0.22	0.23	0.25	0.26	0.27
10.700	0.29	0.30	0.32	0.33	0.35
10.950	0.37	0.38	0.40	0.42	0.44
11.200	0.46	0.49	0.52	0.56	0.60
11.450	0.64	0.69	0.74	0.81	0.91
11.700	1.04	1.22	1.46	1.78	2.17
11.950	2.68	3.36	4.24	5.31	6.44
12.200	7.44	8.07	8.31	8.19	7.81
12.450	7.26	6.64	5.99	5.36	4.75
12.700	4.19	3.69	3.26	2.91	2.61
12.950	2.38	2.18	2.01	1.87	1.75
13.200	1.65	1.56	1.48	1.42	1.36
13.450	1.32	1.28	1.25	1.22	1.19
13.700	1.17	1.15	1.12	1.10	1.08
13.950	1.06	1.04	1.02	1.00	0.98
14.200	0.96	0.94	0.93	0.91	0.90
14.450	0.89	0.87	0.86	0.85	0.84
14.700	0.83	0.82	0.81	0.80	0.79
14.950	0.78	0.77	0.76	0.75	0.74
15.200	0.73	0.72	0.71	0.70	0.69
15.450	0.68	0.67	0.66	0.65	0.64
15.700	0.63	0.62	0.61	0.60	0.59
15.950	0.57	0.56	0.55	0.54	0.53
16.200	0.52	0.52	0.51	0.50	0.49
16.450	0.49	0.48	0.48	0.47	0.47
16.700	0.46	0.46	0.45	0.45	0.44

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EastPre Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.950	0.44	0.43	0.43	0.42	0.42
17.200	0.41	0.41	0.40	0.40	0.40
17.450	0.39	0.39	0.38	0.38	0.37
17.700	0.37	0.36	0.36	0.35	0.35
17.950	0.34	0.34	0.34	0.33	0.33
18.200	0.32	0.32	0.31	0.31	0.31
18.450	0.31	0.31	0.30	0.30	0.30
18.700	0.30	0.30	0.30	0.29	0.29
18.950	0.29	0.29	0.29	0.29	0.29
19.200	0.28	0.28	0.28	0.28	0.28
19.450	0.28	0.28	0.27	0.27	0.27
19.700	0.27	0.27	0.27	0.27	0.26
19.950	0.26	0.26	0.26	0.26	0.26
20.200	0.26	0.26	0.25	0.25	0.25
20.450	0.25	0.25	0.25	0.25	0.25
20.700	0.25	0.24	0.24	0.24	0.24
20.950	0.24	0.24	0.24	0.24	0.24
21.200	0.23	0.23	0.23	0.23	0.23
21.450	0.23	0.23	0.23	0.23	0.23
21.700	0.22	0.22	0.22	0.22	0.22
21.950	0.22	0.22	0.22	0.22	0.21
22.200	0.21	0.21	0.21	0.21	0.21
22.450	0.21	0.21	0.21	0.20	0.20
22.700	0.20	0.20	0.20	0.20	0.20
22.950	0.20	0.20	0.20	0.19	0.19
23.200	0.19	0.19	0.19	0.19	0.19
23.450	0.19	0.19	0.18	0.18	0.18
23.700	0.18	0.18	0.18	0.18	0.18
23.950	0.18	0.17	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: EastPre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.424 hours
Area (User Defined)	4.203 acres

Computational Time Increment	0.056 hours
Time to Peak (Computed)	12.316 hours
Flow (Peak, Computed)	17.27 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	17.23 ft³/s

Drainage Area	
SCS CN (Composite)	73.000
Area (User Defined)	4.203 acres
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	2.058 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.050 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.424 hours
Computational Time Increment	0.056 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: EastPre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.24 ft³/s
Unit peak time, Tp	0.282 hours
Unit receding limb, Tr	1.130 hours
Total unit time, Tb	1.412 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: EastPre Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.424 hours
Area (User Defined)	4.203 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.650	0.00	0.00	0.00	0.00	0.01
6.900	0.01	0.01	0.01	0.02	0.02
7.150	0.02	0.03	0.03	0.04	0.04
7.400	0.05	0.05	0.06	0.06	0.06
7.650	0.07	0.08	0.08	0.09	0.09
7.900	0.10	0.10	0.11	0.11	0.12
8.150	0.13	0.13	0.14	0.15	0.16
8.400	0.16	0.17	0.18	0.19	0.20
8.650	0.21	0.22	0.23	0.24	0.25
8.900	0.27	0.28	0.29	0.30	0.32
9.150	0.33	0.34	0.36	0.37	0.39
9.400	0.40	0.41	0.43	0.45	0.46
9.650	0.48	0.49	0.51	0.53	0.55
9.900	0.56	0.58	0.60	0.62	0.64
10.150	0.66	0.68	0.70	0.72	0.75
10.400	0.77	0.80	0.83	0.86	0.89
10.650	0.93	0.96	0.99	1.03	1.06
10.900	1.10	1.14	1.17	1.21	1.25
11.150	1.30	1.35	1.41	1.48	1.57
11.400	1.66	1.76	1.87	1.99	2.15
11.650	2.37	2.67	3.08	3.64	4.34
11.900	5.21	6.31	7.74	9.56	11.72
12.150	13.94	15.83	16.94	17.23	16.81
12.400	15.89	14.65	13.28	11.92	10.59
12.650	9.35	8.21	7.20	6.34	5.63
12.900	5.04	4.56	4.17	3.84	3.56
13.150	3.32	3.12	2.94	2.79	2.67
13.400	2.56	2.48	2.40	2.34	2.29
13.650	2.23	2.19	2.14	2.10	2.06
13.900	2.01	1.97	1.93	1.90	1.86
14.150	1.82	1.78	1.75	1.72	1.69
14.400	1.66	1.64	1.62	1.60	1.58
14.650	1.55	1.53	1.51	1.50	1.48

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: EastPre Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.900	1.46	1.44	1.42	1.40	1.38
15.150	1.36	1.34	1.32	1.30	1.28
15.400	1.26	1.25	1.23	1.21	1.19
15.650	1.17	1.15	1.13	1.11	1.09
15.900	1.07	1.05	1.03	1.01	0.99
16.150	0.98	0.96	0.94	0.93	0.91
16.400	0.90	0.89	0.88	0.87	0.86
16.650	0.85	0.84	0.83	0.82	0.81
16.900	0.81	0.80	0.79	0.78	0.77
17.150	0.76	0.75	0.75	0.74	0.73
17.400	0.72	0.71	0.70	0.69	0.69
17.650	0.68	0.67	0.66	0.65	0.64
17.900	0.63	0.63	0.62	0.61	0.60
18.150	0.59	0.58	0.58	0.57	0.57
18.400	0.56	0.56	0.55	0.55	0.55
18.650	0.54	0.54	0.54	0.54	0.53
18.900	0.53	0.53	0.52	0.52	0.52
19.150	0.52	0.51	0.51	0.51	0.51
19.400	0.50	0.50	0.50	0.50	0.49
19.650	0.49	0.49	0.49	0.48	0.48
19.900	0.48	0.48	0.47	0.47	0.47
20.150	0.47	0.46	0.46	0.46	0.46
20.400	0.45	0.45	0.45	0.45	0.45
20.650	0.44	0.44	0.44	0.44	0.44
20.900	0.43	0.43	0.43	0.43	0.43
21.150	0.42	0.42	0.42	0.42	0.42
21.400	0.42	0.41	0.41	0.41	0.41
21.650	0.41	0.40	0.40	0.40	0.40
21.900	0.40	0.39	0.39	0.39	0.39
22.150	0.39	0.38	0.38	0.38	0.38
22.400	0.38	0.37	0.37	0.37	0.37
22.650	0.37	0.36	0.36	0.36	0.36
22.900	0.36	0.35	0.35	0.35	0.35
23.150	0.35	0.34	0.34	0.34	0.34
23.400	0.34	0.34	0.33	0.33	0.33
23.650	0.33	0.33	0.32	0.32	0.32
23.900	0.32	0.32	0.31	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Main BESS
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.099 hours
Area (User Defined)	3.341 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.112 hours
Flow (Peak, Computed)	6.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.23 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	3.341 acres
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.8 in
Runoff Volume (Pervious)	0.507 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.507 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.099 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Main BESS
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	38.25 ft³/s
Unit peak time, Tp	0.066 hours
Unit receding limb, Tr	0.264 hours
Total unit time, Tb	0.330 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: Main BESS Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.099 hours
Area (User Defined)	3.341 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.600	0.00	0.00	0.00	0.01	0.01
8.850	0.01	0.01	0.02	0.02	0.02
9.100	0.02	0.03	0.03	0.03	0.04
9.350	0.04	0.04	0.05	0.05	0.05
9.600	0.06	0.06	0.07	0.07	0.07
9.850	0.08	0.08	0.09	0.09	0.10
10.100	0.10	0.11	0.11	0.12	0.13
10.350	0.13	0.14	0.15	0.16	0.16
10.600	0.17	0.18	0.19	0.20	0.21
10.850	0.22	0.23	0.23	0.25	0.26
11.100	0.28	0.29	0.32	0.34	0.37
11.350	0.40	0.43	0.46	0.49	0.57
11.600	0.70	0.88	1.14	1.40	1.72
11.850	2.03	2.41	3.37	4.95	5.76
12.100	6.23	5.66	4.24	3.55	3.09
12.350	2.75	2.36	2.03	1.63	1.37
12.600	1.13	1.03	0.96	0.92	0.88
12.850	0.85	0.80	0.77	0.72	0.70
13.100	0.67	0.65	0.64	0.63	0.62
13.350	0.61	0.60	0.59	0.58	0.57
13.600	0.56	0.55	0.54	0.53	0.52
13.850	0.51	0.50	0.49	0.48	0.47
14.100	0.46	0.45	0.45	0.44	0.44
14.350	0.43	0.43	0.42	0.42	0.41
14.600	0.41	0.40	0.40	0.39	0.39
14.850	0.38	0.38	0.37	0.37	0.36
15.100	0.36	0.35	0.35	0.34	0.33
15.350	0.33	0.32	0.32	0.31	0.31
15.600	0.30	0.30	0.29	0.29	0.28
15.850	0.28	0.27	0.27	0.26	0.26
16.100	0.25	0.25	0.25	0.24	0.24
16.350	0.24	0.24	0.23	0.23	0.23
16.600	0.23	0.22	0.22	0.22	0.22

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: Main BESS Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.850	0.22	0.21	0.21	0.21	0.21
17.100	0.20	0.20	0.20	0.20	0.19
17.350	0.19	0.19	0.19	0.18	0.18
17.600	0.18	0.18	0.18	0.17	0.17
17.850	0.17	0.17	0.16	0.16	0.16
18.100	0.16	0.16	0.16	0.15	0.15
18.350	0.15	0.15	0.15	0.15	0.15
18.600	0.15	0.15	0.15	0.15	0.15
18.850	0.15	0.15	0.14	0.14	0.14
19.100	0.14	0.14	0.14	0.14	0.14
19.350	0.14	0.14	0.14	0.14	0.14
19.600	0.14	0.14	0.13	0.13	0.13
19.850	0.13	0.13	0.13	0.13	0.13
20.100	0.13	0.13	0.13	0.13	0.13
20.350	0.13	0.13	0.12	0.12	0.12
20.600	0.12	0.12	0.12	0.12	0.12
20.850	0.12	0.12	0.12	0.12	0.12
21.100	0.12	0.12	0.12	0.12	0.12
21.350	0.12	0.11	0.11	0.11	0.11
21.600	0.11	0.11	0.11	0.11	0.11
21.850	0.11	0.11	0.11	0.11	0.11
22.100	0.11	0.11	0.11	0.11	0.10
22.350	0.10	0.10	0.10	0.10	0.10
22.600	0.10	0.10	0.10	0.10	0.10
22.850	0.10	0.10	0.10	0.10	0.10
23.100	0.10	0.10	0.10	0.09	0.09
23.350	0.09	0.09	0.09	0.09	0.09
23.600	0.09	0.09	0.09	0.09	0.09
23.850	0.09	0.09	0.09	0.09	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Main BESS
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.099 hours
Area (User Defined)	3.341 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.112 hours
Flow (Peak, Computed)	12.20 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	12.16 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	3.341 acres
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.6 in
Runoff Volume (Pervious)	1.003 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.002 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.099 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Main BESS
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	38.25 ft³/s
Unit peak time, Tp	0.066 hours
Unit receding limb, Tr	0.264 hours
Total unit time, Tb	0.330 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: Main BESS Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.099 hours
Area (User Defined)	3.341 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.650	0.00	0.00	0.00	0.00	0.01
6.900	0.01	0.01	0.01	0.01	0.02
7.150	0.02	0.02	0.02	0.03	0.03
7.400	0.03	0.03	0.04	0.04	0.04
7.650	0.04	0.05	0.05	0.05	0.05
7.900	0.06	0.06	0.06	0.07	0.07
8.150	0.07	0.08	0.08	0.09	0.09
8.400	0.10	0.10	0.11	0.11	0.12
8.650	0.12	0.13	0.14	0.14	0.15
8.900	0.15	0.16	0.17	0.17	0.18
9.150	0.19	0.20	0.20	0.21	0.22
9.400	0.23	0.23	0.24	0.25	0.26
9.650	0.27	0.28	0.29	0.29	0.30
9.900	0.31	0.32	0.33	0.34	0.35
10.150	0.37	0.38	0.40	0.41	0.43
10.400	0.44	0.46	0.48	0.49	0.51
10.650	0.53	0.55	0.56	0.58	0.60
10.900	0.62	0.64	0.66	0.69	0.73
11.150	0.77	0.83	0.88	0.94	1.00
11.400	1.06	1.12	1.20	1.38	1.66
11.650	2.06	2.63	3.16	3.82	4.43
11.900	5.16	7.04	10.09	11.49	12.16
12.150	10.87	8.04	6.68	5.76	5.09
12.400	4.35	3.73	2.98	2.51	2.06
12.650	1.87	1.75	1.68	1.60	1.53
12.900	1.45	1.39	1.31	1.26	1.20
13.150	1.17	1.15	1.13	1.11	1.10
13.400	1.08	1.06	1.04	1.02	1.00
13.650	0.98	0.96	0.94	0.92	0.91
13.900	0.88	0.87	0.85	0.83	0.81
14.150	0.80	0.79	0.79	0.78	0.77
14.400	0.76	0.75	0.74	0.73	0.72
14.650	0.71	0.70	0.69	0.68	0.67

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: Main BESS Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.900	0.66	0.66	0.65	0.64	0.63
15.150	0.62	0.61	0.60	0.59	0.58
15.400	0.57	0.56	0.55	0.54	0.53
15.650	0.52	0.51	0.50	0.49	0.49
15.900	0.47	0.47	0.46	0.45	0.44
16.150	0.44	0.43	0.43	0.42	0.42
16.400	0.41	0.41	0.41	0.40	0.40
16.650	0.39	0.39	0.39	0.38	0.38
16.900	0.37	0.37	0.36	0.36	0.36
17.150	0.35	0.35	0.34	0.34	0.34
17.400	0.33	0.33	0.32	0.32	0.31
17.650	0.31	0.31	0.30	0.30	0.29
17.900	0.29	0.29	0.28	0.28	0.27
18.150	0.27	0.27	0.27	0.27	0.27
18.400	0.27	0.26	0.26	0.26	0.26
18.650	0.26	0.26	0.26	0.26	0.25
18.900	0.25	0.25	0.25	0.25	0.25
19.150	0.25	0.25	0.24	0.24	0.24
19.400	0.24	0.24	0.24	0.24	0.24
19.650	0.23	0.23	0.23	0.23	0.23
19.900	0.23	0.23	0.23	0.22	0.22
20.150	0.22	0.22	0.22	0.22	0.22
20.400	0.22	0.22	0.22	0.21	0.21
20.650	0.21	0.21	0.21	0.21	0.21
20.900	0.21	0.21	0.21	0.21	0.20
21.150	0.20	0.20	0.20	0.20	0.20
21.400	0.20	0.20	0.20	0.20	0.20
21.650	0.19	0.19	0.19	0.19	0.19
21.900	0.19	0.19	0.19	0.19	0.19
22.150	0.18	0.18	0.18	0.18	0.18
22.400	0.18	0.18	0.18	0.18	0.18
22.650	0.18	0.17	0.17	0.17	0.17
22.900	0.17	0.17	0.17	0.17	0.17
23.150	0.16	0.16	0.16	0.16	0.16
23.400	0.16	0.16	0.16	0.16	0.16
23.650	0.16	0.15	0.15	0.15	0.15
23.900	0.15	0.15	0.15	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Main BESS
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.099 hours
Area (User Defined)	3.341 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.112 hours
Flow (Peak, Computed)	22.51 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	22.51 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	3.341 acres
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.9 in
Runoff Volume (Pervious)	1.913 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.911 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.099 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Main BESS
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	38.25 ft³/s
Unit peak time, Tp	0.066 hours
Unit receding limb, Tr	0.264 hours
Total unit time, Tb	0.330 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: Main BESS Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.099 hours
Area (User Defined)	3.341 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
4.650	0.00	0.00	0.00	0.01	0.01
4.900	0.01	0.01	0.02	0.02	0.02
5.150	0.02	0.03	0.03	0.03	0.03
5.400	0.04	0.04	0.04	0.04	0.05
5.650	0.05	0.05	0.05	0.06	0.06
5.900	0.06	0.07	0.07	0.07	0.07
6.150	0.08	0.08	0.09	0.09	0.09
6.400	0.10	0.10	0.11	0.11	0.11
6.650	0.12	0.12	0.13	0.13	0.14
6.900	0.14	0.15	0.15	0.16	0.17
7.150	0.17	0.18	0.18	0.19	0.19
7.400	0.20	0.20	0.21	0.22	0.22
7.650	0.23	0.24	0.24	0.25	0.26
7.900	0.26	0.27	0.28	0.28	0.29
8.150	0.30	0.31	0.32	0.34	0.35
8.400	0.36	0.37	0.38	0.40	0.41
8.650	0.42	0.44	0.45	0.46	0.48
8.900	0.49	0.51	0.52	0.53	0.55
9.150	0.56	0.58	0.60	0.61	0.63
9.400	0.64	0.66	0.68	0.69	0.71
9.650	0.73	0.74	0.76	0.78	0.80
9.900	0.81	0.83	0.85	0.87	0.89
10.150	0.92	0.95	0.98	1.01	1.04
10.400	1.08	1.11	1.14	1.17	1.21
10.650	1.24	1.28	1.31	1.35	1.38
10.900	1.42	1.45	1.49	1.54	1.62
11.150	1.71	1.82	1.93	2.05	2.16
11.400	2.29	2.41	2.54	2.90	3.49
11.650	4.28	5.41	6.44	7.69	8.81
11.900	10.15	13.64	19.25	21.58	22.51
12.150	19.91	14.62	12.05	10.34	9.11
12.400	7.76	6.63	5.29	4.45	3.65
12.650	3.30	3.10	2.96	2.82	2.70

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: Main BESS Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.900	2.56	2.44	2.30	2.20	2.11
13.150	2.06	2.02	1.99	1.95	1.92
13.400	1.88	1.85	1.81	1.78	1.75
13.650	1.71	1.68	1.65	1.61	1.58
13.900	1.54	1.51	1.47	1.45	1.42
14.150	1.40	1.38	1.37	1.35	1.33
14.400	1.32	1.30	1.28	1.27	1.25
14.650	1.24	1.22	1.20	1.18	1.17
14.900	1.15	1.14	1.12	1.10	1.09
15.150	1.07	1.05	1.04	1.02	1.00
15.400	0.99	0.97	0.95	0.94	0.92
15.650	0.90	0.89	0.87	0.85	0.84
15.900	0.82	0.80	0.79	0.77	0.76
16.150	0.75	0.74	0.74	0.73	0.72
16.400	0.71	0.71	0.70	0.69	0.68
16.650	0.68	0.67	0.66	0.66	0.65
16.900	0.64	0.64	0.63	0.62	0.61
17.150	0.61	0.60	0.59	0.58	0.58
17.400	0.57	0.56	0.56	0.55	0.54
17.650	0.53	0.53	0.52	0.51	0.50
17.900	0.50	0.49	0.48	0.47	0.47
18.150	0.47	0.47	0.46	0.46	0.46
18.400	0.46	0.45	0.45	0.45	0.45
18.650	0.45	0.44	0.44	0.44	0.44
18.900	0.43	0.43	0.43	0.43	0.43
19.150	0.42	0.42	0.42	0.42	0.41
19.400	0.41	0.41	0.41	0.41	0.40
19.650	0.40	0.40	0.40	0.40	0.39
19.900	0.39	0.39	0.39	0.38	0.38
20.150	0.38	0.38	0.38	0.38	0.37
20.400	0.37	0.37	0.37	0.37	0.37
20.650	0.36	0.36	0.36	0.36	0.36
20.900	0.36	0.35	0.35	0.35	0.35
21.150	0.35	0.35	0.34	0.34	0.34
21.400	0.34	0.34	0.33	0.33	0.33
21.650	0.33	0.33	0.33	0.33	0.33
21.900	0.32	0.32	0.32	0.32	0.32
22.150	0.32	0.31	0.31	0.31	0.31
22.400	0.31	0.31	0.30	0.30	0.30
22.650	0.30	0.30	0.29	0.29	0.29
22.900	0.29	0.29	0.29	0.29	0.28
23.150	0.28	0.28	0.28	0.28	0.28

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: Main BESS Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.400	0.27	0.27	0.27	0.27	0.27
23.650	0.27	0.26	0.26	0.26	0.26
23.900	0.26	0.25	0.25	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Substation-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.042 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	2.23 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.23 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	1.042 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.1 in
Runoff Volume (Pervious)	0.179 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.179 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Substation-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	14.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: Substation-Post Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.042 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.800	0.00	0.00	0.00	0.00	0.00
8.050	0.00	0.00	0.00	0.01	0.01
8.300	0.01	0.01	0.01	0.01	0.01
8.550	0.01	0.01	0.01	0.01	0.01
8.800	0.01	0.02	0.02	0.02	0.02
9.050	0.02	0.02	0.02	0.02	0.02
9.300	0.03	0.03	0.03	0.03	0.03
9.550	0.03	0.03	0.04	0.04	0.04
9.800	0.04	0.04	0.04	0.04	0.05
10.050	0.05	0.05	0.05	0.05	0.06
10.300	0.06	0.06	0.07	0.07	0.07
10.550	0.07	0.08	0.08	0.08	0.09
10.800	0.09	0.09	0.10	0.10	0.10
11.050	0.11	0.12	0.12	0.13	0.14
11.300	0.15	0.16	0.17	0.19	0.20
11.550	0.24	0.28	0.36	0.46	0.56
11.800	0.67	0.79	0.92	1.35	1.89
12.050	2.11	2.23	1.88	1.37	1.16
12.300	1.03	0.90	0.78	0.65	0.53
12.550	0.44	0.37	0.34	0.32	0.31
12.800	0.30	0.28	0.27	0.26	0.24
13.050	0.23	0.22	0.22	0.21	0.21
13.300	0.21	0.20	0.20	0.20	0.19
13.550	0.19	0.19	0.18	0.18	0.18
13.800	0.17	0.17	0.17	0.16	0.16
14.050	0.16	0.15	0.15	0.15	0.15
14.300	0.15	0.14	0.14	0.14	0.14
14.550	0.14	0.14	0.13	0.13	0.13
14.800	0.13	0.13	0.13	0.12	0.12
15.050	0.12	0.12	0.12	0.11	0.11
15.300	0.11	0.11	0.11	0.11	0.10
15.550	0.10	0.10	0.10	0.10	0.09
15.800	0.09	0.09	0.09	0.09	0.09

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: Substation-Post Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.050	0.08	0.08	0.08	0.08	0.08
16.300	0.08	0.08	0.08	0.08	0.08
16.550	0.08	0.08	0.07	0.07	0.07
16.800	0.07	0.07	0.07	0.07	0.07
17.050	0.07	0.07	0.07	0.07	0.07
17.300	0.06	0.06	0.06	0.06	0.06
17.550	0.06	0.06	0.06	0.06	0.06
17.800	0.06	0.06	0.05	0.05	0.05
18.050	0.05	0.05	0.05	0.05	0.05
18.300	0.05	0.05	0.05	0.05	0.05
18.550	0.05	0.05	0.05	0.05	0.05
18.800	0.05	0.05	0.05	0.05	0.05
19.050	0.05	0.05	0.05	0.05	0.05
19.300	0.05	0.05	0.05	0.05	0.05
19.550	0.05	0.04	0.04	0.04	0.04
19.800	0.04	0.04	0.04	0.04	0.04
20.050	0.04	0.04	0.04	0.04	0.04
20.300	0.04	0.04	0.04	0.04	0.04
20.550	0.04	0.04	0.04	0.04	0.04
20.800	0.04	0.04	0.04	0.04	0.04
21.050	0.04	0.04	0.04	0.04	0.04
21.300	0.04	0.04	0.04	0.04	0.04
21.550	0.04	0.04	0.04	0.04	0.04
21.800	0.04	0.04	0.04	0.04	0.04
22.050	0.04	0.04	0.04	0.03	0.03
22.300	0.03	0.03	0.03	0.03	0.03
22.550	0.03	0.03	0.03	0.03	0.03
22.800	0.03	0.03	0.03	0.03	0.03
23.050	0.03	0.03	0.03	0.03	0.03
23.300	0.03	0.03	0.03	0.03	0.03
23.550	0.03	0.03	0.03	0.03	0.03
23.800	0.03	0.03	0.03	0.03	0.03

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Substation-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.042 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	4.12 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.12 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	1.042 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.9 in
Runoff Volume (Pervious)	0.340 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.340 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Substation-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	14.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: Substation-Post Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.042 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
5.850	0.00	0.00	0.00	0.00	0.00
6.100	0.00	0.00	0.00	0.00	0.01
6.350	0.01	0.01	0.01	0.01	0.01
6.600	0.01	0.01	0.01	0.01	0.01
6.850	0.01	0.01	0.01	0.01	0.02
7.100	0.02	0.02	0.02	0.02	0.02
7.350	0.02	0.02	0.02	0.02	0.02
7.600	0.03	0.03	0.03	0.03	0.03
7.850	0.03	0.03	0.03	0.03	0.04
8.100	0.04	0.04	0.04	0.04	0.04
8.350	0.05	0.05	0.05	0.05	0.05
8.600	0.06	0.06	0.06	0.06	0.06
8.850	0.07	0.07	0.07	0.07	0.08
9.100	0.08	0.08	0.08	0.09	0.09
9.350	0.09	0.10	0.10	0.10	0.10
9.600	0.11	0.11	0.11	0.12	0.12
9.850	0.12	0.13	0.13	0.13	0.14
10.100	0.14	0.14	0.15	0.15	0.16
10.350	0.17	0.17	0.18	0.18	0.19
10.600	0.19	0.20	0.21	0.21	0.22
10.850	0.23	0.23	0.24	0.25	0.26
11.100	0.27	0.29	0.31	0.33	0.35
11.350	0.37	0.39	0.41	0.43	0.51
11.600	0.61	0.78	0.97	1.17	1.38
11.850	1.60	1.83	2.64	3.64	3.97
12.100	4.12	3.43	2.48	2.09	1.83
12.350	1.61	1.38	1.16	0.93	0.78
12.600	0.65	0.60	0.57	0.54	0.52
12.850	0.49	0.47	0.45	0.42	0.40
13.100	0.39	0.38	0.37	0.37	0.36
13.350	0.36	0.35	0.34	0.34	0.33
13.600	0.32	0.32	0.31	0.31	0.30
13.850	0.29	0.29	0.28	0.27	0.27

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: Substation-Post Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.100	0.26	0.26	0.26	0.25	0.25
14.350	0.25	0.25	0.24	0.24	0.24
14.600	0.23	0.23	0.23	0.22	0.22
14.850	0.22	0.21	0.21	0.21	0.21
15.100	0.20	0.20	0.20	0.19	0.19
15.350	0.19	0.18	0.18	0.18	0.17
15.600	0.17	0.17	0.17	0.16	0.16
15.850	0.16	0.15	0.15	0.15	0.14
16.100	0.14	0.14	0.14	0.14	0.14
16.350	0.13	0.13	0.13	0.13	0.13
16.600	0.13	0.13	0.13	0.12	0.12
16.850	0.12	0.12	0.12	0.12	0.12
17.100	0.11	0.11	0.11	0.11	0.11
17.350	0.11	0.11	0.11	0.10	0.10
17.600	0.10	0.10	0.10	0.10	0.10
17.850	0.09	0.09	0.09	0.09	0.09
18.100	0.09	0.09	0.09	0.09	0.09
18.350	0.09	0.09	0.09	0.08	0.08
18.600	0.08	0.08	0.08	0.08	0.08
18.850	0.08	0.08	0.08	0.08	0.08
19.100	0.08	0.08	0.08	0.08	0.08
19.350	0.08	0.08	0.08	0.08	0.08
19.600	0.08	0.08	0.07	0.07	0.07
19.850	0.07	0.07	0.07	0.07	0.07
20.100	0.07	0.07	0.07	0.07	0.07
20.350	0.07	0.07	0.07	0.07	0.07
20.600	0.07	0.07	0.07	0.07	0.07
20.850	0.07	0.07	0.07	0.07	0.07
21.100	0.07	0.07	0.07	0.06	0.06
21.350	0.06	0.06	0.06	0.06	0.06
21.600	0.06	0.06	0.06	0.06	0.06
21.850	0.06	0.06	0.06	0.06	0.06
22.100	0.06	0.06	0.06	0.06	0.06
22.350	0.06	0.06	0.06	0.06	0.06
22.600	0.06	0.06	0.06	0.06	0.06
22.850	0.05	0.05	0.05	0.05	0.05
23.100	0.05	0.05	0.05	0.05	0.05
23.350	0.05	0.05	0.05	0.05	0.05
23.600	0.05	0.05	0.05	0.05	0.05
23.850	0.05	0.05	0.05	0.05	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Substation-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.042 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	7.37 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.37 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	1.042 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.2 in
Runoff Volume (Pervious)	0.630 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.629 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: Substation-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	14.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: Substation-Post Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.042 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
4.000	0.00	0.00	0.00	0.00	0.00
4.250	0.00	0.01	0.01	0.01	0.01
4.500	0.01	0.01	0.01	0.01	0.01
4.750	0.01	0.01	0.01	0.02	0.02
5.000	0.02	0.02	0.02	0.02	0.02
5.250	0.02	0.02	0.02	0.02	0.03
5.500	0.03	0.03	0.03	0.03	0.03
5.750	0.03	0.03	0.03	0.03	0.03
6.000	0.04	0.04	0.04	0.04	0.04
6.250	0.04	0.04	0.05	0.05	0.05
6.500	0.05	0.05	0.05	0.06	0.06
6.750	0.06	0.06	0.06	0.06	0.07
7.000	0.07	0.07	0.07	0.07	0.08
7.250	0.08	0.08	0.08	0.08	0.09
7.500	0.09	0.09	0.09	0.09	0.10
7.750	0.10	0.10	0.10	0.11	0.11
8.000	0.11	0.11	0.12	0.12	0.12
8.250	0.13	0.13	0.14	0.14	0.14
8.500	0.15	0.15	0.16	0.16	0.17
8.750	0.17	0.18	0.18	0.19	0.19
9.000	0.20	0.20	0.21	0.21	0.22
9.250	0.22	0.23	0.23	0.24	0.24
9.500	0.25	0.25	0.26	0.26	0.27
9.750	0.28	0.28	0.29	0.29	0.30
10.000	0.30	0.31	0.32	0.33	0.34
10.250	0.35	0.36	0.37	0.38	0.39
10.500	0.40	0.41	0.42	0.44	0.45
10.750	0.46	0.47	0.48	0.49	0.50
11.000	0.52	0.54	0.56	0.59	0.63
11.250	0.67	0.71	0.75	0.79	0.83
11.500	0.87	1.02	1.21	1.53	1.88
11.750	2.26	2.64	3.03	3.44	4.89
12.000	6.66	7.18	7.37	6.08	4.38

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: Substation-Post Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.250	3.67	3.20	2.80	2.40	2.01
12.500	1.61	1.35	1.12	1.03	0.98
12.750	0.93	0.89	0.85	0.81	0.77
13.000	0.72	0.69	0.67	0.65	0.64
13.250	0.63	0.62	0.61	0.60	0.59
13.500	0.58	0.57	0.55	0.54	0.53
13.750	0.52	0.51	0.50	0.49	0.48
14.000	0.47	0.46	0.45	0.44	0.44
14.250	0.43	0.43	0.42	0.42	0.41
14.500	0.41	0.40	0.40	0.39	0.39
14.750	0.38	0.38	0.37	0.36	0.36
15.000	0.35	0.35	0.34	0.34	0.33
15.250	0.33	0.32	0.32	0.31	0.31
15.500	0.30	0.30	0.29	0.29	0.28
15.750	0.28	0.27	0.26	0.26	0.25
16.000	0.25	0.24	0.24	0.24	0.24
16.250	0.23	0.23	0.23	0.23	0.22
16.500	0.22	0.22	0.22	0.21	0.21
16.750	0.21	0.21	0.21	0.20	0.20
17.000	0.20	0.20	0.19	0.19	0.19
17.250	0.19	0.19	0.18	0.18	0.18
17.500	0.18	0.17	0.17	0.17	0.17
17.750	0.16	0.16	0.16	0.16	0.15
18.000	0.15	0.15	0.15	0.15	0.15
18.250	0.15	0.15	0.15	0.14	0.14
18.500	0.14	0.14	0.14	0.14	0.14
18.750	0.14	0.14	0.14	0.14	0.14
19.000	0.14	0.14	0.13	0.13	0.13
19.250	0.13	0.13	0.13	0.13	0.13
19.500	0.13	0.13	0.13	0.13	0.13
19.750	0.13	0.13	0.12	0.12	0.12
20.000	0.12	0.12	0.12	0.12	0.12
20.250	0.12	0.12	0.12	0.12	0.12
20.500	0.12	0.12	0.12	0.12	0.11
20.750	0.11	0.11	0.11	0.11	0.11
21.000	0.11	0.11	0.11	0.11	0.11
21.250	0.11	0.11	0.11	0.11	0.11
21.500	0.11	0.11	0.11	0.10	0.10
21.750	0.10	0.10	0.10	0.10	0.10
22.000	0.10	0.10	0.10	0.10	0.10
22.250	0.10	0.10	0.10	0.10	0.10
22.500	0.10	0.10	0.10	0.09	0.09

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: Substation-Post Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.750	0.09	0.09	0.09	0.09	0.09
23.000	0.09	0.09	0.09	0.09	0.09
23.250	0.09	0.09	0.09	0.09	0.09
23.500	0.09	0.08	0.08	0.08	0.08
23.750	0.08	0.08	0.08	0.08	0.08
24.000	0.08	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.784 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	1.91 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.91 ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	0.784 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.4 in
Runoff Volume (Pervious)	0.157 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.156 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.66 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: West-Post Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.784 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.450	0.00	0.00	0.00	0.00	0.00
6.700	0.00	0.00	0.00	0.00	0.00
6.950	0.00	0.00	0.00	0.00	0.01
7.200	0.01	0.01	0.01	0.01	0.01
7.450	0.01	0.01	0.01	0.01	0.01
7.700	0.01	0.01	0.01	0.01	0.01
7.950	0.01	0.01	0.01	0.01	0.01
8.200	0.02	0.02	0.02	0.02	0.02
8.450	0.02	0.02	0.02	0.02	0.02
8.700	0.02	0.02	0.03	0.03	0.03
8.950	0.03	0.03	0.03	0.03	0.03
9.200	0.03	0.04	0.04	0.04	0.04
9.450	0.04	0.04	0.04	0.04	0.05
9.700	0.05	0.05	0.05	0.05	0.05
9.950	0.05	0.06	0.06	0.06	0.06
10.200	0.06	0.07	0.07	0.07	0.07
10.450	0.08	0.08	0.08	0.08	0.09
10.700	0.09	0.09	0.10	0.10	0.10
10.950	0.11	0.11	0.11	0.12	0.13
11.200	0.14	0.14	0.15	0.16	0.17
11.450	0.18	0.19	0.23	0.28	0.35
11.700	0.44	0.53	0.63	0.73	0.84
11.950	1.21	1.68	1.84	1.91	1.60
12.200	1.16	0.98	0.86	0.75	0.65
12.450	0.54	0.44	0.37	0.30	0.28
12.700	0.27	0.25	0.24	0.23	0.22
12.950	0.21	0.20	0.19	0.18	0.18
13.200	0.18	0.17	0.17	0.17	0.16
13.450	0.16	0.16	0.16	0.15	0.15
13.700	0.15	0.14	0.14	0.14	0.13
13.950	0.13	0.13	0.13	0.12	0.12
14.200	0.12	0.12	0.12	0.12	0.12
14.450	0.11	0.11	0.11	0.11	0.11

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: West-Post Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.700	0.11	0.11	0.10	0.10	0.10
14.950	0.10	0.10	0.10	0.10	0.09
15.200	0.09	0.09	0.09	0.09	0.09
15.450	0.09	0.08	0.08	0.08	0.08
15.700	0.08	0.08	0.08	0.07	0.07
15.950	0.07	0.07	0.07	0.07	0.07
16.200	0.07	0.06	0.06	0.06	0.06
16.450	0.06	0.06	0.06	0.06	0.06
16.700	0.06	0.06	0.06	0.06	0.06
16.950	0.06	0.06	0.05	0.05	0.05
17.200	0.05	0.05	0.05	0.05	0.05
17.450	0.05	0.05	0.05	0.05	0.05
17.700	0.05	0.05	0.05	0.04	0.04
17.950	0.04	0.04	0.04	0.04	0.04
18.200	0.04	0.04	0.04	0.04	0.04
18.450	0.04	0.04	0.04	0.04	0.04
18.700	0.04	0.04	0.04	0.04	0.04
18.950	0.04	0.04	0.04	0.04	0.04
19.200	0.04	0.04	0.04	0.04	0.04
19.450	0.04	0.04	0.04	0.04	0.04
19.700	0.04	0.04	0.04	0.03	0.03
19.950	0.03	0.03	0.03	0.03	0.03
20.200	0.03	0.03	0.03	0.03	0.03
20.450	0.03	0.03	0.03	0.03	0.03
20.700	0.03	0.03	0.03	0.03	0.03
20.950	0.03	0.03	0.03	0.03	0.03
21.200	0.03	0.03	0.03	0.03	0.03
21.450	0.03	0.03	0.03	0.03	0.03
21.700	0.03	0.03	0.03	0.03	0.03
21.950	0.03	0.03	0.03	0.03	0.03
22.200	0.03	0.03	0.03	0.03	0.03
22.450	0.03	0.03	0.03	0.03	0.03
22.700	0.03	0.03	0.03	0.03	0.03
22.950	0.03	0.03	0.03	0.03	0.03
23.200	0.03	0.02	0.02	0.02	0.02
23.450	0.02	0.02	0.02	0.02	0.02
23.700	0.02	0.02	0.02	0.02	0.02
23.950	0.02	0.02	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.784 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	3.35 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.35 ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	0.784 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.3 in
Runoff Volume (Pervious)	0.283 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.282 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.66 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: West-Post Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.784 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
4.550	0.00	0.00	0.00	0.00	0.00
4.800	0.00	0.00	0.00	0.00	0.00
5.050	0.00	0.00	0.01	0.01	0.01
5.300	0.01	0.01	0.01	0.01	0.01
5.550	0.01	0.01	0.01	0.01	0.01
5.800	0.01	0.01	0.01	0.01	0.01
6.050	0.01	0.01	0.01	0.01	0.01
6.300	0.02	0.02	0.02	0.02	0.02
6.550	0.02	0.02	0.02	0.02	0.02
6.800	0.02	0.02	0.02	0.02	0.03
7.050	0.03	0.03	0.03	0.03	0.03
7.300	0.03	0.03	0.03	0.03	0.03
7.550	0.03	0.04	0.04	0.04	0.04
7.800	0.04	0.04	0.04	0.04	0.04
8.050	0.04	0.05	0.05	0.05	0.05
8.300	0.05	0.05	0.06	0.06	0.06
8.550	0.06	0.06	0.07	0.07	0.07
8.800	0.07	0.07	0.08	0.08	0.08
9.050	0.08	0.09	0.09	0.09	0.09
9.300	0.09	0.10	0.10	0.10	0.10
9.550	0.11	0.11	0.11	0.11	0.12
9.800	0.12	0.12	0.12	0.13	0.13
10.050	0.13	0.14	0.14	0.15	0.15
10.300	0.15	0.16	0.16	0.17	0.17
10.550	0.18	0.18	0.19	0.19	0.20
10.800	0.20	0.21	0.21	0.22	0.22
11.050	0.23	0.24	0.26	0.28	0.29
11.300	0.31	0.33	0.35	0.36	0.38
11.550	0.45	0.54	0.68	0.84	1.00
11.800	1.18	1.36	1.54	2.20	3.00
12.050	3.25	3.35	2.77	1.99	1.67
12.300	1.46	1.28	1.10	0.92	0.74
12.550	0.62	0.51	0.47	0.45	0.43

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: West-Post Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.800	0.41	0.39	0.37	0.35	0.33
13.050	0.32	0.31	0.30	0.29	0.29
13.300	0.28	0.28	0.27	0.27	0.26
13.550	0.26	0.25	0.25	0.24	0.24
13.800	0.23	0.23	0.22	0.22	0.21
14.050	0.21	0.21	0.20	0.20	0.20
14.300	0.20	0.19	0.19	0.19	0.19
14.550	0.18	0.18	0.18	0.18	0.18
14.800	0.17	0.17	0.17	0.17	0.16
15.050	0.16	0.16	0.16	0.15	0.15
15.300	0.15	0.15	0.14	0.14	0.14
15.550	0.14	0.13	0.13	0.13	0.13
15.800	0.12	0.12	0.12	0.12	0.11
16.050	0.11	0.11	0.11	0.11	0.11
16.300	0.11	0.11	0.10	0.10	0.10
16.550	0.10	0.10	0.10	0.10	0.10
16.800	0.10	0.09	0.09	0.09	0.09
17.050	0.09	0.09	0.09	0.09	0.09
17.300	0.09	0.08	0.08	0.08	0.08
17.550	0.08	0.08	0.08	0.08	0.08
17.800	0.07	0.07	0.07	0.07	0.07
18.050	0.07	0.07	0.07	0.07	0.07
18.300	0.07	0.07	0.07	0.07	0.07
18.550	0.07	0.07	0.06	0.06	0.06
18.800	0.06	0.06	0.06	0.06	0.06
19.050	0.06	0.06	0.06	0.06	0.06
19.300	0.06	0.06	0.06	0.06	0.06
19.550	0.06	0.06	0.06	0.06	0.06
19.800	0.06	0.06	0.06	0.06	0.06
20.050	0.06	0.06	0.06	0.06	0.06
20.300	0.05	0.05	0.05	0.05	0.05
20.550	0.05	0.05	0.05	0.05	0.05
20.800	0.05	0.05	0.05	0.05	0.05
21.050	0.05	0.05	0.05	0.05	0.05
21.300	0.05	0.05	0.05	0.05	0.05
21.550	0.05	0.05	0.05	0.05	0.05
21.800	0.05	0.05	0.05	0.05	0.05
22.050	0.05	0.05	0.05	0.05	0.05
22.300	0.04	0.04	0.04	0.04	0.04
22.550	0.04	0.04	0.04	0.04	0.04
22.800	0.04	0.04	0.04	0.04	0.04
23.050	0.04	0.04	0.04	0.04	0.04

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: West-Post Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.300	0.04	0.04	0.04	0.04	0.04
23.550	0.04	0.04	0.04	0.04	0.04
23.800	0.04	0.04	0.04	0.04	0.04

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.784 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	5.76 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.76 ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	0.784 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.7 in
Runoff Volume (Pervious)	0.505 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.505 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.66 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: West-Post Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.784 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
3.050	0.00	0.00	0.00	0.00	0.00
3.300	0.00	0.00	0.01	0.01	0.01
3.550	0.01	0.01	0.01	0.01	0.01
3.800	0.01	0.01	0.01	0.01	0.01
4.050	0.01	0.02	0.02	0.02	0.02
4.300	0.02	0.02	0.02	0.02	0.02
4.550	0.02	0.02	0.02	0.02	0.03
4.800	0.03	0.03	0.03	0.03	0.03
5.050	0.03	0.03	0.03	0.03	0.03
5.300	0.03	0.03	0.04	0.04	0.04
5.550	0.04	0.04	0.04	0.04	0.04
5.800	0.04	0.04	0.04	0.04	0.04
6.050	0.05	0.05	0.05	0.05	0.05
6.300	0.05	0.05	0.05	0.06	0.06
6.550	0.06	0.06	0.06	0.06	0.07
6.800	0.07	0.07	0.07	0.07	0.07
7.050	0.08	0.08	0.08	0.08	0.08
7.300	0.08	0.09	0.09	0.09	0.09
7.550	0.09	0.09	0.10	0.10	0.10
7.800	0.10	0.10	0.11	0.11	0.11
8.050	0.11	0.11	0.12	0.12	0.12
8.300	0.13	0.13	0.14	0.14	0.14
8.550	0.15	0.15	0.15	0.16	0.16
8.800	0.17	0.17	0.17	0.18	0.18
9.050	0.19	0.19	0.19	0.20	0.20
9.300	0.21	0.21	0.21	0.22	0.22
9.550	0.23	0.23	0.24	0.24	0.24
9.800	0.25	0.25	0.26	0.26	0.27
10.050	0.27	0.28	0.29	0.29	0.30
10.300	0.31	0.32	0.33	0.34	0.34
10.550	0.35	0.36	0.37	0.38	0.39
10.800	0.40	0.41	0.41	0.42	0.43
11.050	0.45	0.47	0.50	0.53	0.56

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: West-Post Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.300	0.59	0.62	0.65	0.68	0.71
11.550	0.84	0.99	1.24	1.53	1.82
11.800	2.13	2.43	2.74	3.88	5.26
12.050	5.64	5.76	4.74	3.40	2.84
12.300	2.48	2.16	1.86	1.55	1.24
12.550	1.04	0.86	0.79	0.75	0.72
12.800	0.69	0.65	0.62	0.59	0.56
13.050	0.53	0.51	0.50	0.49	0.48
13.300	0.48	0.47	0.46	0.45	0.44
13.550	0.43	0.43	0.42	0.41	0.40
13.800	0.39	0.38	0.37	0.37	0.36
14.050	0.35	0.34	0.34	0.34	0.33
14.300	0.33	0.32	0.32	0.32	0.31
14.550	0.31	0.30	0.30	0.30	0.29
14.800	0.29	0.28	0.28	0.28	0.27
15.050	0.27	0.26	0.26	0.26	0.25
15.300	0.25	0.24	0.24	0.23	0.23
15.550	0.23	0.22	0.22	0.21	0.21
15.800	0.21	0.20	0.20	0.19	0.19
16.050	0.19	0.18	0.18	0.18	0.18
16.300	0.18	0.17	0.17	0.17	0.17
16.550	0.17	0.17	0.16	0.16	0.16
16.800	0.16	0.16	0.16	0.15	0.15
17.050	0.15	0.15	0.15	0.14	0.14
17.300	0.14	0.14	0.14	0.14	0.13
17.550	0.13	0.13	0.13	0.13	0.13
17.800	0.12	0.12	0.12	0.12	0.12
18.050	0.11	0.11	0.11	0.11	0.11
18.300	0.11	0.11	0.11	0.11	0.11
18.550	0.11	0.11	0.11	0.11	0.11
18.800	0.11	0.11	0.10	0.10	0.10
19.050	0.10	0.10	0.10	0.10	0.10
19.300	0.10	0.10	0.10	0.10	0.10
19.550	0.10	0.10	0.10	0.10	0.10
19.800	0.10	0.09	0.09	0.09	0.09
20.050	0.09	0.09	0.09	0.09	0.09
20.300	0.09	0.09	0.09	0.09	0.09
20.550	0.09	0.09	0.09	0.09	0.09
20.800	0.09	0.09	0.09	0.09	0.09
21.050	0.09	0.08	0.08	0.08	0.08
21.300	0.08	0.08	0.08	0.08	0.08
21.550	0.08	0.08	0.08	0.08	0.08

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: West-Post Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
21.800	0.08	0.08	0.08	0.08	0.08
22.050	0.08	0.08	0.08	0.08	0.08
22.300	0.07	0.07	0.07	0.07	0.07
22.550	0.07	0.07	0.07	0.07	0.07
22.800	0.07	0.07	0.07	0.07	0.07
23.050	0.07	0.07	0.07	0.07	0.07
23.300	0.07	0.07	0.07	0.07	0.07
23.550	0.06	0.06	0.06	0.06	0.06
23.800	0.06	0.06	0.06	0.06	0.06

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Pre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.196 hours
Area (User Defined)	0.952 acres

Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.161 hours
Flow (Peak, Computed)	1.45 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.44 ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	0.952 acres
Maximum Retention (Pervious)	2.7 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.7 in
Runoff Volume (Pervious)	0.133 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.133 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.196 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Pre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.51 ft³/s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.522 hours
Total unit time, Tb	0.652 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: West-Pre Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

Storm Event	2yr, 24hr
Return Event	2 years
Duration	24.000 hours
Depth	3.6 in
Time of Concentration (Composite)	0.196 hours
Area (User Defined)	0.952 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.200	0.00	0.00	0.00	0.00	0.00
9.450	0.00	0.01	0.01	0.01	0.01
9.700	0.01	0.01	0.01	0.01	0.01
9.950	0.01	0.01	0.02	0.02	0.02
10.200	0.02	0.02	0.02	0.02	0.03
10.450	0.03	0.03	0.03	0.03	0.04
10.700	0.04	0.04	0.04	0.04	0.05
10.950	0.05	0.05	0.05	0.06	0.06
11.200	0.07	0.07	0.08	0.08	0.09
11.450	0.10	0.11	0.12	0.13	0.16
11.700	0.20	0.26	0.32	0.39	0.47
11.950	0.60	0.82	1.10	1.33	1.44
12.200	1.38	1.21	1.04	0.91	0.80
12.450	0.70	0.60	0.50	0.42	0.36
12.700	0.31	0.28	0.26	0.25	0.23
12.950	0.22	0.21	0.20	0.19	0.19
13.200	0.18	0.18	0.17	0.17	0.17
13.450	0.16	0.16	0.16	0.16	0.15
13.700	0.15	0.15	0.14	0.14	0.14
13.950	0.14	0.13	0.13	0.13	0.13
14.200	0.12	0.12	0.12	0.12	0.12
14.450	0.12	0.12	0.11	0.11	0.11
14.700	0.11	0.11	0.11	0.11	0.10
14.950	0.10	0.10	0.10	0.10	0.10
15.200	0.10	0.09	0.09	0.09	0.09
15.450	0.09	0.09	0.09	0.08	0.08
15.700	0.08	0.08	0.08	0.08	0.08
15.950	0.07	0.07	0.07	0.07	0.07
16.200	0.07	0.07	0.07	0.07	0.07
16.450	0.06	0.06	0.06	0.06	0.06
16.700	0.06	0.06	0.06	0.06	0.06
16.950	0.06	0.06	0.06	0.06	0.06
17.200	0.06	0.05	0.05	0.05	0.05

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: West-Pre Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
17.450	0.05	0.05	0.05	0.05	0.05
17.700	0.05	0.05	0.05	0.05	0.05
17.950	0.05	0.04	0.04	0.04	0.04
18.200	0.04	0.04	0.04	0.04	0.04
18.450	0.04	0.04	0.04	0.04	0.04
18.700	0.04	0.04	0.04	0.04	0.04
18.950	0.04	0.04	0.04	0.04	0.04
19.200	0.04	0.04	0.04	0.04	0.04
19.450	0.04	0.04	0.04	0.04	0.04
19.700	0.04	0.04	0.04	0.04	0.04
19.950	0.04	0.04	0.04	0.04	0.04
20.200	0.04	0.04	0.03	0.03	0.03
20.450	0.03	0.03	0.03	0.03	0.03
20.700	0.03	0.03	0.03	0.03	0.03
20.950	0.03	0.03	0.03	0.03	0.03
21.200	0.03	0.03	0.03	0.03	0.03
21.450	0.03	0.03	0.03	0.03	0.03
21.700	0.03	0.03	0.03	0.03	0.03
21.950	0.03	0.03	0.03	0.03	0.03
22.200	0.03	0.03	0.03	0.03	0.03
22.450	0.03	0.03	0.03	0.03	0.03
22.700	0.03	0.03	0.03	0.03	0.03
22.950	0.03	0.03	0.03	0.03	0.03
23.200	0.03	0.03	0.03	0.03	0.03
23.450	0.03	0.03	0.03	0.03	0.02
23.700	0.02	0.02	0.02	0.02	0.02
23.950	0.02	0.02	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Pre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.196 hours
Area (User Defined)	0.952 acres

Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.161 hours
Flow (Peak, Computed)	2.95 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.94 ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	0.952 acres
Maximum Retention (Pervious)	2.7 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.4 in
Runoff Volume (Pervious)	0.270 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.269 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.196 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Pre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.51 ft³/s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.522 hours
Total unit time, Tb	0.652 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: West-Pre Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

Storm Event	10yr, 24hr
Return Event	10 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.196 hours
Area (User Defined)	0.952 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.350	0.00	0.00	0.00	0.00	0.00
7.600	0.00	0.00	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.350	0.02	0.02	0.02	0.02	0.02
8.600	0.02	0.02	0.02	0.03	0.03
8.850	0.03	0.03	0.03	0.03	0.04
9.100	0.04	0.04	0.04	0.04	0.04
9.350	0.05	0.05	0.05	0.05	0.05
9.600	0.06	0.06	0.06	0.06	0.07
9.850	0.07	0.07	0.07	0.08	0.08
10.100	0.08	0.08	0.09	0.09	0.09
10.350	0.10	0.10	0.11	0.11	0.12
10.600	0.12	0.12	0.13	0.13	0.14
10.850	0.14	0.15	0.15	0.16	0.16
11.100	0.17	0.18	0.19	0.20	0.22
11.350	0.23	0.25	0.26	0.28	0.31
11.600	0.35	0.41	0.51	0.63	0.77
11.850	0.92	1.09	1.34	1.80	2.34
12.100	2.77	2.94	2.77	2.40	2.04
12.350	1.77	1.54	1.33	1.13	0.95
12.600	0.79	0.67	0.58	0.53	0.49
12.850	0.46	0.44	0.41	0.39	0.37
13.100	0.36	0.34	0.33	0.32	0.32
13.350	0.31	0.31	0.30	0.29	0.29
13.600	0.28	0.28	0.27	0.27	0.26
13.850	0.26	0.25	0.25	0.24	0.24
14.100	0.23	0.23	0.22	0.22	0.22
14.350	0.22	0.21	0.21	0.21	0.21
14.600	0.20	0.20	0.20	0.20	0.19
14.850	0.19	0.19	0.19	0.18	0.18
15.100	0.18	0.18	0.17	0.17	0.17
15.350	0.16	0.16	0.16	0.16	0.15

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: West-Pre Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.600	0.15	0.15	0.15	0.14	0.14
15.850	0.14	0.14	0.13	0.13	0.13
16.100	0.13	0.12	0.12	0.12	0.12
16.350	0.12	0.12	0.12	0.11	0.11
16.600	0.11	0.11	0.11	0.11	0.11
16.850	0.11	0.11	0.10	0.10	0.10
17.100	0.10	0.10	0.10	0.10	0.10
17.350	0.09	0.09	0.09	0.09	0.09
17.600	0.09	0.09	0.09	0.09	0.08
17.850	0.08	0.08	0.08	0.08	0.08
18.100	0.08	0.08	0.08	0.08	0.08
18.350	0.07	0.07	0.07	0.07	0.07
18.600	0.07	0.07	0.07	0.07	0.07
18.850	0.07	0.07	0.07	0.07	0.07
19.100	0.07	0.07	0.07	0.07	0.07
19.350	0.07	0.07	0.07	0.07	0.07
19.600	0.07	0.07	0.07	0.07	0.06
19.850	0.06	0.06	0.06	0.06	0.06
20.100	0.06	0.06	0.06	0.06	0.06
20.350	0.06	0.06	0.06	0.06	0.06
20.600	0.06	0.06	0.06	0.06	0.06
20.850	0.06	0.06	0.06	0.06	0.06
21.100	0.06	0.06	0.06	0.06	0.06
21.350	0.06	0.06	0.06	0.06	0.05
21.600	0.05	0.05	0.05	0.05	0.05
21.850	0.05	0.05	0.05	0.05	0.05
22.100	0.05	0.05	0.05	0.05	0.05
22.350	0.05	0.05	0.05	0.05	0.05
22.600	0.05	0.05	0.05	0.05	0.05
22.850	0.05	0.05	0.05	0.05	0.05
23.100	0.05	0.05	0.05	0.05	0.05
23.350	0.05	0.05	0.04	0.04	0.04
23.600	0.04	0.04	0.04	0.04	0.04
23.850	0.04	0.04	0.04	0.04	(N/A)

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Pre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.196 hours
Area (User Defined)	0.952 acres

Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.135 hours
Flow (Peak, Computed)	5.62 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	5.61 ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	0.952 acres
Maximum Retention (Pervious)	2.7 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.6 in
Runoff Volume (Pervious)	0.525 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.524 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.196 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Report

Subsection: Unit Hydrograph Summary
Label: West-Pre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.51 ft³/s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.522 hours
Total unit time, Tb	0.652 hours

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: West-Pre Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

Storm Event	100yr, 24hr
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.196 hours
Area (User Defined)	0.952 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
5.250	0.00	0.00	0.00	0.00	0.00
5.500	0.00	0.00	0.00	0.01	0.01
5.750	0.01	0.01	0.01	0.01	0.01
6.000	0.01	0.01	0.01	0.01	0.01
6.250	0.01	0.02	0.02	0.02	0.02
6.500	0.02	0.02	0.02	0.02	0.02
6.750	0.03	0.03	0.03	0.03	0.03
7.000	0.03	0.03	0.03	0.04	0.04
7.250	0.04	0.04	0.04	0.04	0.04
7.500	0.05	0.05	0.05	0.05	0.05
7.750	0.05	0.06	0.06	0.06	0.06
8.000	0.06	0.06	0.07	0.07	0.07
8.250	0.07	0.08	0.08	0.08	0.09
8.500	0.09	0.09	0.10	0.10	0.10
8.750	0.11	0.11	0.11	0.12	0.12
9.000	0.12	0.13	0.13	0.14	0.14
9.250	0.14	0.15	0.15	0.16	0.16
9.500	0.17	0.17	0.17	0.18	0.18
9.750	0.19	0.19	0.20	0.20	0.21
10.000	0.21	0.22	0.22	0.23	0.24
10.250	0.24	0.25	0.26	0.27	0.28
10.500	0.29	0.29	0.30	0.31	0.32
10.750	0.33	0.34	0.35	0.36	0.37
11.000	0.38	0.39	0.41	0.42	0.45
11.250	0.47	0.50	0.53	0.56	0.60
11.500	0.63	0.68	0.77	0.91	1.10
11.750	1.35	1.63	1.93	2.25	2.72
12.000	3.59	4.59	5.35	5.61	5.23
12.250	4.50	3.79	3.26	2.82	2.43
12.500	2.06	1.72	1.43	1.20	1.05
12.750	0.95	0.88	0.83	0.78	0.74
13.000	0.70	0.67	0.64	0.61	0.59
13.250	0.58	0.56	0.55	0.54	0.53

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: West-Pre Storm Event: 100yr, 24hr
Scenario: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
13.500	0.52	0.51	0.50	0.50	0.49
13.750	0.48	0.47	0.46	0.45	0.44
14.000	0.43	0.42	0.41	0.40	0.40
14.250	0.39	0.39	0.38	0.38	0.37
14.500	0.37	0.36	0.36	0.35	0.35
14.750	0.34	0.34	0.34	0.33	0.33
15.000	0.32	0.32	0.31	0.31	0.30
15.250	0.30	0.29	0.29	0.28	0.28
15.500	0.28	0.27	0.27	0.26	0.26
15.750	0.25	0.25	0.24	0.24	0.23
16.000	0.23	0.22	0.22	0.22	0.21
16.250	0.21	0.21	0.21	0.20	0.20
16.500	0.20	0.20	0.20	0.19	0.19
16.750	0.19	0.19	0.19	0.18	0.18
17.000	0.18	0.18	0.18	0.17	0.17
17.250	0.17	0.17	0.17	0.16	0.16
17.500	0.16	0.16	0.16	0.15	0.15
17.750	0.15	0.15	0.14	0.14	0.14
18.000	0.14	0.14	0.13	0.13	0.13
18.250	0.13	0.13	0.13	0.13	0.13
18.500	0.13	0.13	0.13	0.13	0.13
18.750	0.13	0.12	0.12	0.12	0.12
19.000	0.12	0.12	0.12	0.12	0.12
19.250	0.12	0.12	0.12	0.12	0.12
19.500	0.12	0.12	0.11	0.11	0.11
19.750	0.11	0.11	0.11	0.11	0.11
20.000	0.11	0.11	0.11	0.11	0.11
20.250	0.11	0.11	0.11	0.11	0.11
20.500	0.10	0.10	0.10	0.10	0.10
20.750	0.10	0.10	0.10	0.10	0.10
21.000	0.10	0.10	0.10	0.10	0.10
21.250	0.10	0.10	0.10	0.10	0.10
21.500	0.10	0.09	0.09	0.09	0.09
21.750	0.09	0.09	0.09	0.09	0.09
22.000	0.09	0.09	0.09	0.09	0.09
22.250	0.09	0.09	0.09	0.09	0.09
22.500	0.09	0.09	0.09	0.08	0.08
22.750	0.08	0.08	0.08	0.08	0.08
23.000	0.08	0.08	0.08	0.08	0.08
23.250	0.08	0.08	0.08	0.08	0.08
23.500	0.08	0.08	0.08	0.08	0.08
23.750	0.07	0.07	0.07	0.07	0.07

Stormwater Report

Subsection: Unit Hydrograph (Hydrograph Table)
Label: West-Pre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
24.000	0.07	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Addition Summary
Label: 01-WestPre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Summary for Hydrograph Addition at '01-WestPre'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	West-Pre

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	West-Pre	0.133	12.150	1.44
Flow (In)	01-WestPre	0.133	12.150	1.44

Stormwater Report

Subsection: Addition Summary
Label: 01-WestPre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Summary for Hydrograph Addition at '01-WestPre'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	West-Pre

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	West-Pre	0.269	12.150	2.94
Flow (In)	01-WestPre	0.269	12.150	2.94

Stormwater Report

Subsection: Addition Summary
Label: 01-WestPre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Summary for Hydrograph Addition at '01-WestPre'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	West-Pre

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	West-Pre	0.524	12.150	5.61
Flow (In)	01-WestPre	0.524	12.150	5.61

Stormwater Report

Subsection: Addition Summary
Label: 02-EastPre
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Summary for Hydrograph Addition at '02-EastPre'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EastPre

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EastPre	0.444	12.350	3.58
Flow (In)	02-EastPre	0.444	12.350	3.58

Stormwater Report

Subsection: Addition Summary
Label: 02-EastPre
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Summary for Hydrograph Addition at '02-EastPre'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EastPre

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EastPre	0.988	12.300	8.31
Flow (In)	02-EastPre	0.988	12.300	8.31

Stormwater Report

Subsection: Addition Summary
Label: 02-EastPre
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Summary for Hydrograph Addition at '02-EastPre'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EastPre

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EastPre	2.050	12.300	17.23
Flow (In)	02-EastPre	2.050	12.300	17.23

Stormwater Report

Subsection: Addition Summary
Label: 04-BESS-Post
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Summary for Hydrograph Addition at '04-BESS-Post'

Upstream Link	Upstream Node
Outlet-3	MainPond

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-3	0.797	12.300	4.69
Flow (In)	04-BESS-Post	0.797	12.300	4.69

Stormwater Report

Subsection: Addition Summary
Label: 04-BESS-Post
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Summary for Hydrograph Addition at '04-BESS-Post'

Upstream Link	Upstream Node
Outlet-3	MainPond

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-3	1.577	12.250	11.14
Flow (In)	04-BESS-Post	1.577	12.250	11.14

Stormwater Report

Subsection: Addition Summary
Label: 04-BESS-Post
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Summary for Hydrograph Addition at '04-BESS-Post'

Upstream Link	Upstream Node
Outlet-3	MainPond

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-3	2.996	12.200	20.96
Flow (In)	04-BESS-Post	2.996	12.200	20.96

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	236.00	236.00	236.00	236.00	236.00
0.250	236.00	236.00	236.00	236.00	236.00
0.500	236.00	236.00	236.00	236.00	236.00
0.750	236.00	236.00	236.00	236.00	236.00
1.000	236.00	236.00	236.00	236.00	236.00
1.250	236.00	236.00	236.00	236.00	236.00
1.500	236.00	236.00	236.00	236.00	236.00
1.750	236.00	236.00	236.00	236.00	236.00
2.000	236.00	236.00	236.00	236.00	236.00
2.250	236.00	236.00	236.00	236.00	236.00
2.500	236.00	236.00	236.00	236.00	236.00
2.750	236.00	236.00	236.00	236.00	236.00
3.000	236.00	236.00	236.00	236.00	236.00
3.250	236.00	236.00	236.00	236.00	236.00
3.500	236.00	236.00	236.00	236.00	236.00
3.750	236.00	236.00	236.00	236.00	236.00
4.000	236.00	236.00	236.00	236.00	236.00
4.250	236.00	236.00	236.00	236.00	236.00
4.500	236.00	236.00	236.00	236.00	236.00
4.750	236.00	236.00	236.00	236.00	236.00
5.000	236.00	236.00	236.00	236.00	236.00
5.250	236.00	236.00	236.00	236.00	236.00
5.500	236.00	236.00	236.00	236.00	236.00
5.750	236.00	236.00	236.00	236.00	236.00
6.000	236.00	236.00	236.00	236.00	236.00
6.250	236.00	236.00	236.00	236.00	236.00
6.500	236.00	236.00	236.00	236.00	236.00
6.750	236.00	236.00	236.00	236.00	236.00
7.000	236.00	236.00	236.00	236.00	236.00
7.250	236.00	236.00	236.00	236.00	236.00
7.500	236.00	236.00	236.01	236.01	236.01
7.750	236.01	236.01	236.01	236.01	236.01
8.000	236.01	236.01	236.01	236.01	236.01
8.250	236.01	236.02	236.02	236.02	236.02
8.500	236.02	236.02	236.02	236.03	236.03
8.750	236.03	236.03	236.03	236.04	236.04
9.000	236.04	236.05	236.05	236.05	236.06
9.250	236.06	236.07	236.07	236.08	236.08
9.500	236.09	236.10	236.10	236.11	236.12
9.750	236.13	236.13	236.14	236.15	236.16

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	236.17	236.18	236.19	236.20	236.21
10.250	236.22	236.23	236.25	236.26	236.28
10.500	236.29	236.31	236.32	236.34	236.36
10.750	236.37	236.39	236.41	236.43	236.46
11.000	236.48	236.50	236.52	236.54	236.55
11.250	236.57	236.58	236.60	236.61	236.62
11.500	236.63	236.65	236.67	236.69	236.73
11.750	236.78	236.84	236.91	236.99	237.10
12.000	237.28	237.51	237.75	237.95	238.07
12.250	238.13	238.15	238.15	238.13	238.09
12.500	238.04	237.97	237.88	237.79	237.71
12.750	237.63	237.55	237.47	237.39	237.31
13.000	237.24	237.18	237.11	237.06	237.00
13.250	236.95	236.91	236.87	236.84	236.82
13.500	236.80	236.78	236.76	236.75	236.74
13.750	236.73	236.72	236.71	236.71	236.70
14.000	236.69	236.69	236.68	236.68	236.68
14.250	236.67	236.67	236.67	236.66	236.66
14.500	236.66	236.66	236.65	236.65	236.65
14.750	236.65	236.64	236.64	236.64	236.64
15.000	236.64	236.64	236.63	236.63	236.63
15.250	236.63	236.63	236.62	236.62	236.62
15.500	236.62	236.62	236.61	236.61	236.61
15.750	236.61	236.61	236.61	236.60	236.60
16.000	236.60	236.60	236.60	236.59	236.59
16.250	236.59	236.59	236.59	236.59	236.59
16.500	236.59	236.58	236.58	236.58	236.58
16.750	236.58	236.58	236.58	236.58	236.58
17.000	236.58	236.58	236.58	236.57	236.57
17.250	236.57	236.57	236.57	236.57	236.57
17.500	236.57	236.57	236.57	236.57	236.57
17.750	236.56	236.56	236.56	236.56	236.56
18.000	236.56	236.56	236.56	236.56	236.56
18.250	236.56	236.56	236.56	236.56	236.55
18.500	236.55	236.55	236.55	236.55	236.55
18.750	236.55	236.55	236.55	236.55	236.55
19.000	236.55	236.55	236.55	236.55	236.55
19.250	236.55	236.55	236.55	236.55	236.55
19.500	236.55	236.55	236.55	236.55	236.55
19.750	236.55	236.55	236.55	236.55	236.55
20.000	236.55	236.55	236.55	236.55	236.55

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	236.55	236.55	236.54	236.54	236.54
20.500	236.54	236.54	236.54	236.54	236.54
20.750	236.54	236.54	236.54	236.54	236.54
21.000	236.54	236.54	236.54	236.54	236.54
21.250	236.54	236.54	236.54	236.54	236.54
21.500	236.54	236.54	236.54	236.54	236.54
21.750	236.54	236.54	236.54	236.54	236.54
22.000	236.54	236.54	236.54	236.54	236.54
22.250	236.54	236.54	236.54	236.54	236.54
22.500	236.54	236.54	236.54	236.54	236.54
22.750	236.54	236.54	236.54	236.54	236.53
23.000	236.53	236.53	236.53	236.53	236.53
23.250	236.53	236.53	236.53	236.53	236.53
23.500	236.53	236.53	236.53	236.53	236.53
23.750	236.53	236.53	236.53	236.53	236.53
24.000	236.53	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	236.00	236.00	236.00	236.00	236.00
0.250	236.00	236.00	236.00	236.00	236.00
0.500	236.00	236.00	236.00	236.00	236.00
0.750	236.00	236.00	236.00	236.00	236.00
1.000	236.00	236.00	236.00	236.00	236.00
1.250	236.00	236.00	236.00	236.00	236.00
1.500	236.00	236.00	236.00	236.00	236.00
1.750	236.00	236.00	236.00	236.00	236.00
2.000	236.00	236.00	236.00	236.00	236.00
2.250	236.00	236.00	236.00	236.00	236.00
2.500	236.00	236.00	236.00	236.00	236.00
2.750	236.00	236.00	236.00	236.00	236.00
3.000	236.00	236.00	236.00	236.00	236.00
3.250	236.00	236.00	236.00	236.00	236.00
3.500	236.00	236.00	236.00	236.00	236.00
3.750	236.00	236.00	236.00	236.00	236.00
4.000	236.00	236.00	236.00	236.00	236.00
4.250	236.00	236.00	236.00	236.00	236.00
4.500	236.00	236.00	236.00	236.00	236.00
4.750	236.00	236.00	236.00	236.00	236.00
5.000	236.00	236.00	236.00	236.00	236.00
5.250	236.00	236.00	236.00	236.00	236.00
5.500	236.00	236.00	236.00	236.01	236.01
5.750	236.01	236.01	236.01	236.01	236.01
6.000	236.01	236.01	236.01	236.01	236.01
6.250	236.01	236.01	236.02	236.02	236.02
6.500	236.02	236.02	236.02	236.02	236.02
6.750	236.03	236.03	236.03	236.03	236.03
7.000	236.04	236.04	236.04	236.05	236.05
7.250	236.05	236.06	236.06	236.06	236.07
7.500	236.07	236.08	236.08	236.09	236.09
7.750	236.10	236.10	236.11	236.12	236.12
8.000	236.13	236.14	236.14	236.15	236.16
8.250	236.17	236.18	236.19	236.20	236.21
8.500	236.22	236.23	236.24	236.25	236.27
8.750	236.28	236.29	236.31	236.32	236.34
9.000	236.35	236.37	236.38	236.40	236.42
9.250	236.44	236.46	236.48	236.50	236.52
9.500	236.53	236.54	236.55	236.56	236.57
9.750	236.58	236.59	236.59	236.60	236.60

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	236.61	236.61	236.62	236.62	236.62
10.250	236.63	236.63	236.64	236.64	236.65
10.500	236.65	236.66	236.67	236.67	236.68
10.750	236.68	236.69	236.70	236.70	236.71
11.000	236.71	236.72	236.73	236.74	236.75
11.250	236.76	236.78	236.79	236.81	236.83
11.500	236.84	236.87	236.90	236.96	237.03
11.750	237.13	237.25	237.41	237.58	237.82
12.000	238.16	238.58	238.95	239.21	239.33
12.250	239.34	239.31	239.24	239.17	239.07
12.500	238.97	238.85	238.74	238.63	238.54
12.750	238.45	238.37	238.28	238.20	238.12
13.000	238.04	237.95	237.87	237.78	237.71
13.250	237.63	237.57	237.50	237.43	237.37
13.500	237.31	237.26	237.21	237.16	237.12
13.750	237.08	237.04	237.00	236.97	236.94
14.000	236.91	236.89	236.87	236.85	236.84
14.250	236.82	236.81	236.81	236.80	236.79
14.500	236.78	236.78	236.77	236.77	236.76
14.750	236.76	236.75	236.75	236.75	236.74
15.000	236.74	236.74	236.73	236.73	236.73
15.250	236.72	236.72	236.72	236.71	236.71
15.500	236.71	236.70	236.70	236.70	236.69
15.750	236.69	236.69	236.68	236.68	236.68
16.000	236.67	236.67	236.67	236.66	236.66
16.250	236.66	236.66	236.65	236.65	236.65
16.500	236.65	236.65	236.64	236.64	236.64
16.750	236.64	236.64	236.64	236.64	236.63
17.000	236.63	236.63	236.63	236.63	236.63
17.250	236.62	236.62	236.62	236.62	236.62
17.500	236.62	236.62	236.61	236.61	236.61
17.750	236.61	236.61	236.61	236.61	236.60
18.000	236.60	236.60	236.60	236.60	236.60
18.250	236.60	236.60	236.60	236.59	236.59
18.500	236.59	236.59	236.59	236.59	236.59
18.750	236.59	236.59	236.59	236.59	236.59
19.000	236.59	236.59	236.59	236.59	236.59
19.250	236.59	236.59	236.59	236.58	236.58
19.500	236.58	236.58	236.58	236.58	236.58
19.750	236.58	236.58	236.58	236.58	236.58
20.000	236.58	236.58	236.58	236.58	236.58

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	236.58	236.58	236.58	236.58	236.58
20.500	236.58	236.58	236.57	236.57	236.57
20.750	236.57	236.57	236.57	236.57	236.57
21.000	236.57	236.57	236.57	236.57	236.57
21.250	236.57	236.57	236.57	236.57	236.57
21.500	236.57	236.57	236.57	236.57	236.57
21.750	236.57	236.57	236.57	236.57	236.57
22.000	236.57	236.57	236.57	236.56	236.56
22.250	236.56	236.56	236.56	236.56	236.56
22.500	236.56	236.56	236.56	236.56	236.56
22.750	236.56	236.56	236.56	236.56	236.56
23.000	236.56	236.56	236.56	236.56	236.56
23.250	236.56	236.56	236.56	236.56	236.56
23.500	236.56	236.56	236.56	236.55	236.55
23.750	236.55	236.55	236.55	236.55	236.55
24.000	236.55	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	236.00	236.00	236.00	236.00	236.00
0.250	236.00	236.00	236.00	236.00	236.00
0.500	236.00	236.00	236.00	236.00	236.00
0.750	236.00	236.00	236.00	236.00	236.00
1.000	236.00	236.00	236.00	236.00	236.00
1.250	236.00	236.00	236.00	236.00	236.00
1.500	236.00	236.00	236.00	236.00	236.00
1.750	236.00	236.00	236.00	236.00	236.00
2.000	236.00	236.00	236.00	236.00	236.00
2.250	236.00	236.00	236.00	236.00	236.00
2.500	236.00	236.00	236.00	236.00	236.00
2.750	236.00	236.00	236.00	236.00	236.00
3.000	236.00	236.00	236.00	236.00	236.00
3.250	236.00	236.00	236.00	236.00	236.00
3.500	236.00	236.00	236.00	236.00	236.00
3.750	236.00	236.00	236.01	236.01	236.01
4.000	236.01	236.01	236.01	236.01	236.01
4.250	236.01	236.01	236.01	236.02	236.02
4.500	236.02	236.02	236.02	236.02	236.02
4.750	236.03	236.03	236.03	236.03	236.04
5.000	236.04	236.04	236.05	236.05	236.05
5.250	236.06	236.06	236.07	236.07	236.08
5.500	236.08	236.09	236.09	236.10	236.10
5.750	236.11	236.12	236.12	236.13	236.14
6.000	236.14	236.15	236.16	236.17	236.17
6.250	236.18	236.19	236.20	236.21	236.22
6.500	236.23	236.24	236.25	236.27	236.28
6.750	236.29	236.30	236.32	236.33	236.34
7.000	236.36	236.37	236.39	236.40	236.42
7.250	236.44	236.45	236.47	236.49	236.51
7.500	236.52	236.53	236.54	236.55	236.56
7.750	236.57	236.57	236.58	236.58	236.59
8.000	236.59	236.59	236.60	236.60	236.60
8.250	236.61	236.61	236.62	236.62	236.62
8.500	236.63	236.63	236.64	236.64	236.64
8.750	236.65	236.65	236.66	236.66	236.67
9.000	236.67	236.68	236.68	236.69	236.69
9.250	236.70	236.70	236.71	236.71	236.72
9.500	236.72	236.73	236.73	236.74	236.75
9.750	236.75	236.76	236.76	236.77	236.77

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	236.78	236.79	236.79	236.80	236.81
10.250	236.82	236.82	236.83	236.84	236.85
10.500	236.86	236.87	236.88	236.89	236.90
10.750	236.92	236.93	236.94	236.95	236.96
11.000	236.97	236.99	237.00	237.02	237.04
11.250	237.06	237.10	237.13	237.17	237.21
11.500	237.26	237.32	237.40	237.52	237.68
11.750	237.89	238.13	238.42	238.71	239.06
12.000	239.52	240.01	240.45	240.77	240.91
12.250	240.90	240.82	240.70	240.55	240.37
12.500	240.18	239.97	239.75	239.54	239.35
12.750	239.18	239.04	238.91	238.80	238.71
13.000	238.62	238.55	238.48	238.42	238.36
13.250	238.29	238.23	238.17	238.12	238.06
13.500	238.01	237.95	237.89	237.84	237.79
13.750	237.74	237.69	237.64	237.59	237.55
14.000	237.51	237.46	237.42	237.38	237.34
14.250	237.30	237.27	237.24	237.21	237.18
14.500	237.15	237.13	237.10	237.08	237.06
14.750	237.04	237.02	237.00	236.98	236.96
15.000	236.95	236.93	236.92	236.91	236.90
15.250	236.89	236.89	236.88	236.87	236.86
15.500	236.86	236.85	236.84	236.84	236.83
15.750	236.83	236.82	236.81	236.81	236.80
16.000	236.80	236.79	236.78	236.78	236.77
16.250	236.77	236.77	236.76	236.76	236.76
16.500	236.75	236.75	236.75	236.74	236.74
16.750	236.74	236.74	236.73	236.73	236.73
17.000	236.73	236.72	236.72	236.72	236.72
17.250	236.71	236.71	236.71	236.71	236.70
17.500	236.70	236.70	236.70	236.69	236.69
17.750	236.69	236.69	236.68	236.68	236.68
18.000	236.68	236.67	236.67	236.67	236.67
18.250	236.67	236.66	236.66	236.66	236.66
18.500	236.66	236.66	236.66	236.66	236.65
18.750	236.65	236.65	236.65	236.65	236.65
19.000	236.65	236.65	236.65	236.65	236.65
19.250	236.65	236.65	236.64	236.64	236.64
19.500	236.64	236.64	236.64	236.64	236.64
19.750	236.64	236.64	236.64	236.64	236.64
20.000	236.63	236.63	236.63	236.63	236.63

Stormwater Report

Subsection: Time vs. Elevation
Label: MainPond (OUT)
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	236.63	236.63	236.63	236.63	236.63
20.500	236.63	236.63	236.63	236.63	236.63
20.750	236.63	236.62	236.62	236.62	236.62
21.000	236.62	236.62	236.62	236.62	236.62
21.250	236.62	236.62	236.62	236.62	236.62
21.500	236.62	236.62	236.62	236.62	236.61
21.750	236.61	236.61	236.61	236.61	236.61
22.000	236.61	236.61	236.61	236.61	236.61
22.250	236.61	236.61	236.61	236.61	236.61
22.500	236.61	236.61	236.60	236.60	236.60
22.750	236.60	236.60	236.60	236.60	236.60
23.000	236.60	236.60	236.60	236.60	236.60
23.250	236.60	236.60	236.60	236.60	236.60
23.500	236.59	236.59	236.59	236.59	236.59
23.750	236.59	236.59	236.59	236.59	236.59
24.000	236.59	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.750	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.250	0.000	0.000	0.000	0.000	0.000
3.500	0.000	0.000	0.000	0.000	0.000
3.750	0.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000	0.000
4.250	0.000	0.000	0.000	0.000	0.000
4.500	0.000	0.000	0.000	0.000	0.000
4.750	0.000	0.000	0.000	0.000	0.000
5.000	0.000	0.000	0.000	0.000	0.000
5.250	0.000	0.000	0.000	0.000	0.000
5.500	0.000	0.000	0.000	0.000	0.000
5.750	0.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000	0.000
6.250	0.000	0.000	0.000	0.000	0.000
6.500	0.000	0.000	0.000	0.000	0.000
6.750	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000
7.250	0.000	0.000	0.000	0.000	0.000
7.500	0.000	0.000	0.000	0.000	0.001
7.750	0.001	0.001	0.001	0.001	0.001
8.000	0.001	0.001	0.001	0.001	0.001
8.250	0.001	0.001	0.001	0.001	0.002
8.500	0.002	0.002	0.002	0.002	0.002
8.750	0.002	0.003	0.003	0.003	0.003
9.000	0.003	0.004	0.004	0.004	0.005
9.250	0.005	0.005	0.006	0.006	0.007
9.500	0.007	0.008	0.008	0.009	0.009
9.750	0.010	0.011	0.011	0.012	0.013

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.000	0.014	0.014	0.015	0.016	0.017
10.250	0.018	0.019	0.020	0.021	0.022
10.500	0.024	0.025	0.026	0.028	0.029
10.750	0.031	0.033	0.034	0.036	0.038
11.000	0.040	0.042	0.044	0.045	0.047
11.250	0.048	0.049	0.050	0.051	0.053
11.500	0.054	0.055	0.057	0.059	0.063
11.750	0.067	0.073	0.079	0.087	0.098
12.000	0.116	0.141	0.167	0.190	0.205
12.250	0.211	0.214	0.214	0.211	0.207
12.500	0.200	0.192	0.182	0.172	0.162
12.750	0.153	0.144	0.136	0.128	0.120
13.000	0.113	0.106	0.100	0.094	0.089
13.250	0.084	0.079	0.076	0.073	0.071
13.500	0.069	0.067	0.066	0.065	0.063
13.750	0.063	0.062	0.061	0.060	0.060
14.000	0.059	0.059	0.058	0.058	0.058
14.250	0.057	0.057	0.057	0.056	0.056
14.500	0.056	0.056	0.055	0.055	0.055
14.750	0.055	0.055	0.055	0.054	0.054
15.000	0.054	0.054	0.054	0.054	0.053
15.250	0.053	0.053	0.053	0.053	0.053
15.500	0.052	0.052	0.052	0.052	0.052
15.750	0.052	0.051	0.051	0.051	0.051
16.000	0.051	0.051	0.050	0.050	0.050
16.250	0.050	0.050	0.050	0.050	0.050
16.500	0.049	0.049	0.049	0.049	0.049
16.750	0.049	0.049	0.049	0.049	0.049
17.000	0.049	0.049	0.048	0.048	0.048
17.250	0.048	0.048	0.048	0.048	0.048
17.500	0.048	0.048	0.048	0.048	0.048
17.750	0.047	0.047	0.047	0.047	0.047
18.000	0.047	0.047	0.047	0.047	0.047
18.250	0.047	0.047	0.047	0.047	0.047
18.500	0.047	0.047	0.047	0.047	0.046
18.750	0.046	0.046	0.046	0.046	0.046
19.000	0.046	0.046	0.046	0.046	0.046
19.250	0.046	0.046	0.046	0.046	0.046
19.500	0.046	0.046	0.046	0.046	0.046
19.750	0.046	0.046	0.046	0.046	0.046
20.000	0.046	0.046	0.046	0.046	0.046

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.250	0.046	0.046	0.046	0.046	0.046
20.500	0.046	0.046	0.046	0.046	0.046
20.750	0.046	0.046	0.046	0.046	0.046
21.000	0.046	0.046	0.046	0.045	0.045
21.250	0.045	0.045	0.045	0.045	0.045
21.500	0.045	0.045	0.045	0.045	0.045
21.750	0.045	0.045	0.045	0.045	0.045
22.000	0.045	0.045	0.045	0.045	0.045
22.250	0.045	0.045	0.045	0.045	0.045
22.500	0.045	0.045	0.045	0.045	0.045
22.750	0.045	0.045	0.045	0.045	0.045
23.000	0.045	0.045	0.045	0.045	0.045
23.250	0.045	0.045	0.045	0.045	0.045
23.500	0.045	0.045	0.045	0.045	0.045
23.750	0.045	0.045	0.045	0.045	0.045
24.000	0.045	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.750	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.250	0.000	0.000	0.000	0.000	0.000
3.500	0.000	0.000	0.000	0.000	0.000
3.750	0.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000	0.000
4.250	0.000	0.000	0.000	0.000	0.000
4.500	0.000	0.000	0.000	0.000	0.000
4.750	0.000	0.000	0.000	0.000	0.000
5.000	0.000	0.000	0.000	0.000	0.000
5.250	0.000	0.000	0.000	0.000	0.000
5.500	0.000	0.000	0.000	0.000	0.000
5.750	0.001	0.001	0.001	0.001	0.001
6.000	0.001	0.001	0.001	0.001	0.001
6.250	0.001	0.001	0.001	0.001	0.001
6.500	0.001	0.002	0.002	0.002	0.002
6.750	0.002	0.002	0.002	0.003	0.003
7.000	0.003	0.003	0.003	0.004	0.004
7.250	0.004	0.004	0.005	0.005	0.005
7.500	0.006	0.006	0.007	0.007	0.007
7.750	0.008	0.008	0.009	0.009	0.010
8.000	0.010	0.011	0.012	0.012	0.013
8.250	0.014	0.014	0.015	0.016	0.017
8.500	0.018	0.019	0.020	0.021	0.022
8.750	0.023	0.024	0.025	0.026	0.028
9.000	0.029	0.030	0.032	0.033	0.035
9.250	0.036	0.038	0.040	0.042	0.043
9.500	0.044	0.046	0.047	0.047	0.048
9.750	0.049	0.049	0.050	0.050	0.051

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.000	0.051	0.052	0.052	0.053	0.053
10.250	0.053	0.054	0.054	0.055	0.055
10.500	0.056	0.056	0.057	0.057	0.058
10.750	0.058	0.059	0.059	0.060	0.061
11.000	0.061	0.062	0.063	0.063	0.064
11.250	0.066	0.067	0.068	0.070	0.071
11.500	0.073	0.076	0.079	0.084	0.091
11.750	0.101	0.114	0.130	0.148	0.174
12.000	0.215	0.267	0.317	0.354	0.372
12.250	0.373	0.368	0.359	0.348	0.335
12.500	0.320	0.304	0.289	0.274	0.262
12.750	0.251	0.241	0.230	0.220	0.210
13.000	0.200	0.190	0.180	0.171	0.162
13.250	0.154	0.147	0.140	0.132	0.126
13.500	0.120	0.114	0.109	0.104	0.100
13.750	0.096	0.092	0.088	0.085	0.082
14.000	0.079	0.077	0.076	0.074	0.073
14.250	0.071	0.070	0.070	0.069	0.068
14.500	0.068	0.067	0.067	0.066	0.066
14.750	0.065	0.065	0.064	0.064	0.064
15.000	0.063	0.063	0.063	0.062	0.062
15.250	0.062	0.062	0.061	0.061	0.061
15.500	0.060	0.060	0.060	0.059	0.059
15.750	0.059	0.058	0.058	0.058	0.058
16.000	0.057	0.057	0.057	0.056	0.056
16.250	0.056	0.056	0.056	0.055	0.055
16.500	0.055	0.055	0.055	0.055	0.054
16.750	0.054	0.054	0.054	0.054	0.054
17.000	0.054	0.053	0.053	0.053	0.053
17.250	0.053	0.053	0.053	0.053	0.052
17.500	0.052	0.052	0.052	0.052	0.052
17.750	0.052	0.052	0.051	0.051	0.051
18.000	0.051	0.051	0.051	0.051	0.051
18.250	0.050	0.050	0.050	0.050	0.050
18.500	0.050	0.050	0.050	0.050	0.050
18.750	0.050	0.050	0.050	0.050	0.050
19.000	0.050	0.050	0.050	0.050	0.049
19.250	0.049	0.049	0.049	0.049	0.049
19.500	0.049	0.049	0.049	0.049	0.049
19.750	0.049	0.049	0.049	0.049	0.049
20.000	0.049	0.049	0.049	0.049	0.049

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.250	0.049	0.049	0.049	0.049	0.049
20.500	0.049	0.048	0.048	0.048	0.048
20.750	0.048	0.048	0.048	0.048	0.048
21.000	0.048	0.048	0.048	0.048	0.048
21.250	0.048	0.048	0.048	0.048	0.048
21.500	0.048	0.048	0.048	0.048	0.048
21.750	0.048	0.048	0.048	0.048	0.048
22.000	0.048	0.048	0.048	0.048	0.047
22.250	0.047	0.047	0.047	0.047	0.047
22.500	0.047	0.047	0.047	0.047	0.047
22.750	0.047	0.047	0.047	0.047	0.047
23.000	0.047	0.047	0.047	0.047	0.047
23.250	0.047	0.047	0.047	0.047	0.047
23.500	0.047	0.047	0.047	0.047	0.047
23.750	0.047	0.047	0.047	0.047	0.046
24.000	0.046	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.750	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.250	0.000	0.000	0.000	0.000	0.000
3.500	0.000	0.000	0.000	0.000	0.000
3.750	0.000	0.000	0.000	0.000	0.001
4.000	0.001	0.001	0.001	0.001	0.001
4.250	0.001	0.001	0.001	0.001	0.001
4.500	0.001	0.002	0.002	0.002	0.002
4.750	0.002	0.002	0.002	0.003	0.003
5.000	0.003	0.003	0.004	0.004	0.004
5.250	0.005	0.005	0.005	0.006	0.006
5.500	0.006	0.007	0.007	0.008	0.008
5.750	0.009	0.009	0.010	0.010	0.011
6.000	0.011	0.012	0.013	0.013	0.014
6.250	0.015	0.016	0.016	0.017	0.018
6.500	0.019	0.020	0.021	0.022	0.023
6.750	0.024	0.025	0.026	0.027	0.028
7.000	0.029	0.031	0.032	0.033	0.035
7.250	0.036	0.038	0.039	0.041	0.042
7.500	0.044	0.045	0.046	0.046	0.047
7.750	0.048	0.048	0.049	0.049	0.049
8.000	0.050	0.050	0.050	0.051	0.051
8.250	0.051	0.052	0.052	0.052	0.053
8.500	0.053	0.054	0.054	0.054	0.055
8.750	0.055	0.056	0.056	0.056	0.057
9.000	0.057	0.058	0.058	0.059	0.059
9.250	0.060	0.060	0.060	0.061	0.061
9.500	0.062	0.062	0.063	0.063	0.064
9.750	0.065	0.065	0.066	0.066	0.067

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.000	0.067	0.068	0.068	0.069	0.070
10.250	0.071	0.071	0.072	0.073	0.074
10.500	0.075	0.076	0.077	0.078	0.079
10.750	0.080	0.081	0.082	0.083	0.084
11.000	0.086	0.087	0.088	0.090	0.092
11.250	0.095	0.098	0.101	0.105	0.110
11.500	0.114	0.121	0.129	0.142	0.159
11.750	0.183	0.212	0.247	0.285	0.333
12.000	0.399	0.477	0.551	0.608	0.633
12.250	0.631	0.617	0.595	0.569	0.538
12.500	0.504	0.470	0.435	0.403	0.374
12.750	0.350	0.330	0.312	0.297	0.284
13.000	0.273	0.264	0.255	0.247	0.239
13.250	0.231	0.224	0.217	0.210	0.203
13.500	0.196	0.190	0.183	0.177	0.171
13.750	0.165	0.160	0.155	0.150	0.145
14.000	0.140	0.135	0.131	0.126	0.122
14.250	0.119	0.115	0.112	0.109	0.106
14.500	0.103	0.101	0.098	0.096	0.094
14.750	0.092	0.090	0.088	0.086	0.085
15.000	0.083	0.082	0.081	0.080	0.079
15.250	0.078	0.077	0.076	0.076	0.075
15.500	0.074	0.074	0.073	0.073	0.072
15.750	0.071	0.071	0.070	0.070	0.069
16.000	0.069	0.068	0.068	0.067	0.067
16.250	0.066	0.066	0.066	0.065	0.065
16.500	0.065	0.064	0.064	0.064	0.064
16.750	0.063	0.063	0.063	0.063	0.062
17.000	0.062	0.062	0.062	0.061	0.061
17.250	0.061	0.061	0.061	0.060	0.060
17.500	0.060	0.060	0.059	0.059	0.059
17.750	0.059	0.058	0.058	0.058	0.058
18.000	0.058	0.057	0.057	0.057	0.057
18.250	0.057	0.056	0.056	0.056	0.056
18.500	0.056	0.056	0.056	0.056	0.056
18.750	0.056	0.056	0.055	0.055	0.055
19.000	0.055	0.055	0.055	0.055	0.055
19.250	0.055	0.055	0.055	0.055	0.055
19.500	0.055	0.054	0.054	0.054	0.054
19.750	0.054	0.054	0.054	0.054	0.054
20.000	0.054	0.054	0.054	0.054	0.054

Stormwater Report

Subsection: Time vs. Volume
Label: MainPond
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.250	0.054	0.053	0.053	0.053	0.053
20.500	0.053	0.053	0.053	0.053	0.053
20.750	0.053	0.053	0.053	0.053	0.053
21.000	0.053	0.053	0.053	0.053	0.053
21.250	0.052	0.052	0.052	0.052	0.052
21.500	0.052	0.052	0.052	0.052	0.052
21.750	0.052	0.052	0.052	0.052	0.052
22.000	0.052	0.052	0.052	0.052	0.052
22.250	0.051	0.051	0.051	0.051	0.051
22.500	0.051	0.051	0.051	0.051	0.051
22.750	0.051	0.051	0.051	0.051	0.051
23.000	0.051	0.051	0.051	0.051	0.051
23.250	0.050	0.050	0.050	0.050	0.050
23.500	0.050	0.050	0.050	0.050	0.050
23.750	0.050	0.050	0.050	0.050	0.050
24.000	0.050	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Elevation-Area Volume Curve
Label: MainPond
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
236.00	0.0	0.079	0.000	0.000	0.000
237.00	0.0	0.098	0.265	0.088	0.088
238.00	0.0	0.118	0.323	0.108	0.196
239.00	0.0	0.140	0.385	0.128	0.324
240.00	0.0	0.163	0.453	0.151	0.475
241.00	0.0	0.188	0.525	0.175	0.650
242.00	0.0	0.214	0.602	0.201	0.851

Stormwater Report

Subsection: Volume Equations
Label: MainPond
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Pond Volume Equations
* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2 - El1) * (Area1 + Area2 + sqr(Area1 * Area2))

where:	EL1, EL2	Lower and upper elevations of the increment
	Area1, Area2	Areas computed for EL1, EL2, respectively
	Volume	Incremental volume between EL1 and EL2

Stormwater Report

Subsection: Elevation-Area Volume Curve
Label: MainPond
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
236.00	0.0	0.079	0.000	0.000	0.000
237.00	0.0	0.098	0.265	0.088	0.088
238.00	0.0	0.118	0.323	0.108	0.196
239.00	0.0	0.140	0.385	0.128	0.324
240.00	0.0	0.163	0.453	0.151	0.475
241.00	0.0	0.188	0.525	0.175	0.650
242.00	0.0	0.214	0.602	0.201	0.851

Stormwater Report

Subsection: Volume Equations
Label: MainPond
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Pond Volume Equations
* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2 - El1) * (Area1 + Area2 + sqr(Area1 * Area2))

where:	EL1, EL2	Lower and upper elevations of the increment
	Area1, Area2	Areas computed for EL1, EL2, respectively
	Volume	Incremental volume between EL1 and EL2

Stormwater Report

Subsection: Elevation-Area Volume Curve
Label: MainPond
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
236.00	0.0	0.079	0.000	0.000	0.000
237.00	0.0	0.098	0.265	0.088	0.088
238.00	0.0	0.118	0.323	0.108	0.196
239.00	0.0	0.140	0.385	0.128	0.324
240.00	0.0	0.163	0.453	0.151	0.475
241.00	0.0	0.188	0.525	0.175	0.650
242.00	0.0	0.214	0.602	0.201	0.851

Stormwater Report

Subsection: Volume Equations
Label: MainPond
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Pond Volume Equations
* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2 - El1) * (Area1 + Area2 + sqr(Area1 * Area2))

where:	EL1, EL2	Lower and upper elevations of the increment
	Area1, Area2	Areas computed for EL1, EL2, respectively
	Volume	Incremental volume between EL1 and EL2

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	236.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	242.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	236.50	242.00
Orifice-Circular	Orifice - 2	Forward	Culvert - 1	238.50	242.00
Culvert-Circular	Culvert - 1	Forward	TW	236.00	242.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.0 in
Length	65.00 ft
Length (Computed Barrel)	65.01 ft
Slope (Computed)	0.015 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.088
T2 ratio (HW/D)	1.190
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	238.18 ft	T1 Flow	15.55 ft³/s
T2 Elevation	238.38 ft	T2 Flow	17.77 ft³/s

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	7
Elevation	236.50 ft
Orifice Diameter	5.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 2 Structure Type: Orifice-Circular	
Number of Openings	6
Elevation	238.50 ft
Orifice Diameter	7.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 3 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	239.50 ft
Orifice Diameter	10.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 30.18 ft³/s
Upstream ID = Orifice - 1, Orifice - 2
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
236.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
236.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
237.00	2.29	236.75	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
237.50	3.46	236.93	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
238.00	4.43	237.07	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
238.50	5.28	237.18	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
239.00	8.66	237.55	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
239.50	12.30	237.91	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
240.00	14.75	238.14	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
240.50	16.84	238.33	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
241.00	18.72	238.51	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
241.50	20.46	238.71	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
242.00	21.76	238.88	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .188ft Dcr= .527ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .237ft Dcr= .651ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .274ft Dcr= .740ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .304ft Dcr= .811ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .418ft Dcr= 1.049ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .540ft Dcr= 1.261ft CRIT.DEPTH Hev= .00ft

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 30.18 ft³/s
Upstream ID = Orifice - 1, Orifice - 2
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .628ft Dcr= 1.384ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .710ft Dcr= 1.480ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .790ft Dcr= 1.557ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =2.71
INLET CONTROL... Submerged: HW =2.88

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Orifice - 1 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
236.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
236.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
237.00	2.29	237.00	236.75	236.75	0.00	0.00	(N/A)	0.00
237.50	3.46	237.50	236.93	236.93	0.00	0.00	(N/A)	0.00
238.00	4.44	238.00	237.07	237.07	0.00	0.00	(N/A)	0.00
238.50	5.29	238.50	237.18	237.18	0.00	0.00	(N/A)	0.00
239.00	5.53	239.00	237.55	237.55	0.00	0.00	(N/A)	0.00
239.50	5.79	239.50	237.91	237.91	0.00	0.00	(N/A)	0.00
240.00	6.27	240.00	238.14	238.14	0.00	0.00	(N/A)	0.00
240.50	6.77	240.50	238.33	238.33	0.00	0.00	(N/A)	0.00
241.00	7.26	241.00	238.51	238.51	0.00	0.00	(N/A)	0.00
241.50	7.68	241.50	238.71	238.71	0.00	0.00	(N/A)	0.00
242.00	8.11	242.00	238.88	238.88	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
H =.25
H =.57
H =.93
H =1.32
H =1.45
H =1.59
H =1.86
H =2.17
H =2.49
H =2.79
H =3.12

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Orifice - 2 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)	Message
236.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
236.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
237.00	0.00	0.00	0.00	236.75	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
237.50	0.00	0.00	0.00	236.93	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
238.00	0.00	0.00	0.00	237.07	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
238.50	0.00	0.00	0.00	237.18	0.00	0.00	(N/A)	0.00	CRIT.DEPTH CONTROL Vh= .148ft Dcr= .352ft CRIT.DEPTH Hev= .00ft
239.00	3.13	239.00	Free Outfall	237.55	0.00	0.00	(N/A)	0.00	H =.71
239.50	6.50	239.50	Free Outfall	237.91	0.00	0.00	(N/A)	0.00	H =1.21
240.00	8.48	240.00	Free Outfall	238.14	0.00	0.00	(N/A)	0.00	H =1.71
240.50	10.09	240.50	Free Outfall	238.33	0.00	0.00	(N/A)	0.00	H =2.21
241.00	11.47	241.00	238.51	238.51	0.00	0.00	(N/A)	0.00	H =2.71
241.50	12.70	241.50	238.71	238.71	0.00	0.00	(N/A)	0.00	H =3.12
242.00	13.62	242.00	238.88	238.88	0.00	0.00	(N/A)	0.00	

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Composite Rating Curve
Label: BESS Outlet Structure
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
236.00	0.00	(N/A)	0.00
236.50	0.00	(N/A)	0.00
237.00	2.29	(N/A)	0.00
237.50	3.46	(N/A)	0.00
238.00	4.43	(N/A)	0.00
238.50	5.28	(N/A)	0.00
239.00	8.66	(N/A)	0.00
239.50	12.30	(N/A)	0.00
240.00	14.75	(N/A)	0.00
240.50	16.84	(N/A)	0.00
241.00	18.72	(N/A)	0.00
241.50	20.38	(N/A)	0.00
242.00	21.73	(N/A)	0.00

Contributing Structures
(no Q: Orifice - 1,Orifice - 2,Culvert - 1)
(no Q: Orifice - 1,Orifice - 2,Culvert - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	236.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	242.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	236.50	242.00
Orifice-Circular	Orifice - 2	Forward	Culvert - 1	238.50	242.00
Culvert-Circular	Culvert - 1	Forward	TW	236.00	242.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.0 in
Length	65.00 ft
Length (Computed Barrel)	65.01 ft
Slope (Computed)	0.015 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.088
T2 ratio (HW/D)	1.190
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	238.18 ft	T1 Flow	15.55 ft³/s
T2 Elevation	238.38 ft	T2 Flow	17.77 ft³/s

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	7
Elevation	236.50 ft
Orifice Diameter	5.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 2 Structure Type: Orifice-Circular	
Number of Openings	6
Elevation	238.50 ft
Orifice Diameter	7.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 3 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	239.50 ft
Orifice Diameter	10.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Composite Rating Curve
Label: BESS Outlet Structure
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
236.00	0.00	(N/A)	0.00
236.50	0.00	(N/A)	0.00
237.00	2.29	(N/A)	0.00
237.50	3.46	(N/A)	0.00
238.00	4.43	(N/A)	0.00
238.50	5.28	(N/A)	0.00
239.00	8.66	(N/A)	0.00
239.50	12.30	(N/A)	0.00
240.00	14.75	(N/A)	0.00
240.50	16.84	(N/A)	0.00
241.00	18.72	(N/A)	0.00
241.50	20.38	(N/A)	0.00
242.00	21.73	(N/A)	0.00

Contributing Structures
(no Q: Orifice - 1,Orifice - 2,Culvert - 1)
(no Q: Orifice - 1,Orifice - 2,Culvert - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2)
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1
Orifice - 1,Orifice - 2,Culvert - 1

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	236.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	242.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	236.50	242.00
Orifice-Circular	Orifice - 2	Forward	Culvert - 1	238.50	242.00
Culvert-Circular	Culvert - 1	Forward	TW	236.00	242.00
Orifice-Circular	Orifice - 3	Forward	TW	239.50	242.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.0 in
Length	65.00 ft
Length (Computed Barrel)	65.01 ft
Slope (Computed)	0.015 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.088
T2 ratio (HW/D)	1.190
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	238.18 ft	T1 Flow	15.55 ft³/s
T2 Elevation	238.38 ft	T2 Flow	17.77 ft³/s

Stormwater Report

Subsection: Outlet Input Data
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	7
Elevation	236.50 ft
Orifice Diameter	5.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 2 Structure Type: Orifice-Circular	
Number of Openings	6
Elevation	238.50 ft
Orifice Diameter	7.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 3 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	239.50 ft
Orifice Diameter	10.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Individual Outlet Curves
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)

Contributing Structures

Stormwater Report

Subsection: Composite Rating Curve
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
236.00	0.00	(N/A)	0.00
236.50	0.00	(N/A)	0.00
237.00	2.29	(N/A)	0.00
237.50	3.46	(N/A)	0.00
238.00	4.43	(N/A)	0.00
238.50	5.28	(N/A)	0.00
239.00	8.66	(N/A)	0.00
239.50	12.30	(N/A)	0.00
240.00	15.42	(N/A)	0.00
240.50	18.85	(N/A)	0.00
241.00	21.45	(N/A)	0.00
241.50	23.76	(N/A)	0.00
242.00	25.54	(N/A)	0.00

Contributing Structures
(no Q: Orifice - 1,Orifice - 2,Culvert - 1,Orifice - 3)
(no Q: Orifice - 1,Orifice - 2,Culvert - 1,Orifice - 3)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Orifice - 3)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Orifice - 3)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Orifice - 3)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Orifice - 3)
Orifice - 1,Orifice - 2,Culvert - 1 (no Q: Orifice - 3)
Orifice - 1,Orifice - 2,Culvert - 1 (no Q: Orifice - 3)
Orifice - 1,Orifice - 2,Culvert - 1,Orifice - 3
Orifice - 1,Orifice - 2,Culvert - 1,Orifice - 3
Orifice - 1,Orifice - 2,Culvert - 1,Orifice - 3
Orifice - 1,Orifice - 2,Culvert - 1,Orifice - 3

Stormwater Report

Subsection: Composite Rating Curve
Label: BESS Outlet Structure
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Composite Outflow Summary

Contributing Structures
Orifice - 1,Orifice - 2,Culvert - 1,Orifice - 3

Stormwater Report

Subsection: Elevation-Volume-Flow Table (Pond)
Label: MainPond
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	236.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
236.00	0.00	0.000	0.079	0.00	0.00	0.00
236.50	0.00	0.042	0.088	0.00	0.00	20.23
237.00	2.29	0.088	0.098	0.00	2.29	45.00
237.50	3.46	0.140	0.108	0.00	3.46	70.99
238.00	4.43	0.196	0.118	0.00	4.43	99.21
238.50	5.28	0.257	0.128	0.00	5.28	129.85
239.00	8.66	0.324	0.139	0.00	8.66	165.63
239.50	12.30	0.397	0.151	0.00	12.30	204.41
240.00	14.75	0.475	0.163	0.00	14.75	244.81
240.50	16.84	0.560	0.175	0.00	16.84	287.76
241.00	18.72	0.650	0.188	0.00	18.72	333.50
241.50	20.38	0.747	0.201	0.00	20.38	382.12
242.00	21.73	0.851	0.214	0.00	21.73	433.63

Stormwater Report

Subsection: Elevation-Volume-Flow Table (Pond)
Label: MainPond
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	236.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
236.00	0.00	0.000	0.079	0.00	0.00	0.00
236.50	0.00	0.042	0.088	0.00	0.00	20.23
237.00	2.29	0.088	0.098	0.00	2.29	45.00
237.50	3.46	0.140	0.108	0.00	3.46	70.99
238.00	4.43	0.196	0.118	0.00	4.43	99.21
238.50	5.28	0.257	0.128	0.00	5.28	129.85
239.00	8.66	0.324	0.139	0.00	8.66	165.63
239.50	12.30	0.397	0.151	0.00	12.30	204.41
240.00	14.75	0.475	0.163	0.00	14.75	244.81
240.50	16.84	0.560	0.175	0.00	16.84	287.76
241.00	18.72	0.650	0.188	0.00	18.72	333.50
241.50	20.38	0.747	0.201	0.00	20.38	382.12
242.00	21.73	0.851	0.214	0.00	21.73	433.63

Stormwater Report

Subsection: Elevation-Volume-Flow Table (Pond)
Label: MainPond
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	236.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
236.00	0.00	0.000	0.079	0.00	0.00	0.00
236.50	0.00	0.042	0.088	0.00	0.00	20.23
237.00	2.29	0.088	0.098	0.00	2.29	45.00
237.50	3.46	0.140	0.108	0.00	3.46	70.99
238.00	4.43	0.196	0.118	0.00	4.43	99.21
238.50	5.28	0.257	0.128	0.00	5.28	129.85
239.00	8.66	0.324	0.139	0.00	8.66	165.63
239.50	12.30	0.397	0.151	0.00	12.30	204.41
240.00	15.42	0.475	0.163	0.00	15.42	245.48
240.50	18.85	0.560	0.175	0.00	18.85	289.77
241.00	21.45	0.650	0.188	0.00	21.45	336.23
241.50	23.76	0.747	0.201	0.00	23.76	385.51
242.00	25.54	0.851	0.214	0.00	25.54	437.45

Stormwater Report

Subsection: Level Pool Pond Routing Summary
Label: MainPond (IN)
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	236.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	10.37 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	4.69 ft³/s	Time to Peak (Flow, Outlet)	12.300 hours

Elevation (Water Surface, Peak)	238.15 ft
Volume (Peak)	0.214 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	0.842 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.797 ac-ft
Volume (Retained)	0.044 ac-ft
Volume (Unrouted)	-0.001 ac-ft
Error (Mass Balance)	0.1 %

Stormwater Report

Subsection: Level Pool Pond Routing Summary
Label: MainPond (IN)
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	236.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	19.63 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	11.14 ft³/s	Time to Peak (Flow, Outlet)	12.250 hours

Elevation (Water Surface, Peak)	239.34 ft
Volume (Peak)	0.373 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	1.624 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	1.577 ac-ft
Volume (Retained)	0.046 ac-ft
Volume (Unrouted)	-0.001 ac-ft
Error (Mass Balance)	0.1 %

Stormwater Report

Subsection: Level Pool Pond Routing Summary
Label: MainPond (IN)
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	236.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	35.64 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	20.96 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	240.91 ft
Volume (Peak)	0.633 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	3.046 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	2.996 ac-ft
Volume (Retained)	0.048 ac-ft
Volume (Unrouted)	-0.002 ac-ft
Error (Mass Balance)	0.1 %

Stormwater Report

Subsection: Pond Routed Hydrograph (total out)
Label: MainPond (OUT)
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Peak Discharge	4.69 ft³/s
Time to Peak	12.300 hours
Hydrograph Volume	0.797 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.000	0.00	0.00	0.09	0.17	0.25
11.250	0.31	0.38	0.44	0.50	0.55
11.500	0.61	0.67	0.76	0.89	1.06
11.750	1.28	1.55	1.87	2.24	2.52
12.000	2.94	3.49	3.94	4.34	4.56
12.250	4.65	4.69	4.69	4.65	4.59
12.500	4.50	4.37	4.20	4.03	3.86
12.750	3.70	3.55	3.38	3.20	3.02
13.000	2.86	2.71	2.56	2.43	2.30
13.250	2.08	1.88	1.71	1.58	1.46
13.500	1.36	1.28	1.21	1.15	1.10
13.750	1.06	1.02	0.98	0.95	0.92
14.000	0.89	0.87	0.84	0.82	0.80
14.250	0.79	0.77	0.76	0.75	0.73
14.500	0.72	0.71	0.70	0.69	0.68
14.750	0.67	0.66	0.65	0.65	0.64
15.000	0.63	0.62	0.61	0.60	0.59
15.250	0.59	0.58	0.57	0.56	0.55
15.500	0.54	0.53	0.53	0.52	0.51
15.750	0.50	0.49	0.48	0.47	0.47
16.000	0.46	0.45	0.44	0.43	0.43
16.250	0.42	0.41	0.41	0.40	0.40
16.500	0.39	0.39	0.38	0.38	0.38
16.750	0.37	0.37	0.36	0.36	0.36
17.000	0.35	0.35	0.34	0.34	0.34
17.250	0.33	0.33	0.33	0.32	0.32
17.500	0.31	0.31	0.31	0.30	0.30
17.750	0.29	0.29	0.29	0.28	0.28
18.000	0.28	0.27	0.27	0.26	0.26
18.250	0.26	0.26	0.25	0.25	0.25
18.500	0.25	0.25	0.25	0.24	0.24
18.750	0.24	0.24	0.24	0.24	0.24
19.000	0.24	0.23	0.23	0.23	0.23
19.250	0.23	0.23	0.23	0.23	0.23
19.500	0.22	0.22	0.22	0.22	0.22
19.750	0.22	0.22	0.22	0.22	0.21
20.000	0.21	0.21	0.21	0.21	0.21

Stormwater Report

Subsection: Pond Routed Hydrograph (total out) Return Event: 2 years
Label: MainPond (OUT) Storm Event: 2yr, 24hr
Scenario: 2yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
20.250	0.21	0.21	0.21	0.20	0.20
20.500	0.20	0.20	0.20	0.20	0.20
20.750	0.20	0.20	0.20	0.20	0.19
21.000	0.19	0.19	0.19	0.19	0.19
21.250	0.19	0.19	0.19	0.19	0.19
21.500	0.19	0.18	0.18	0.18	0.18
21.750	0.18	0.18	0.18	0.18	0.18
22.000	0.18	0.18	0.17	0.17	0.17
22.250	0.17	0.17	0.17	0.17	0.17
22.500	0.17	0.17	0.17	0.17	0.16
22.750	0.16	0.16	0.16	0.16	0.16
23.000	0.16	0.16	0.16	0.16	0.16
23.250	0.15	0.15	0.15	0.15	0.15
23.500	0.15	0.15	0.15	0.15	0.15
23.750	0.15	0.15	0.14	0.14	0.14
24.000	0.14	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Pond Routed Hydrograph (total out)
Label: MainPond (OUT)
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Peak Discharge	11.14 ft³/s
Time to Peak	12.250 hours
Hydrograph Volume	1.577 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.400	0.00	0.07	0.14	0.20	0.25
9.650	0.29	0.33	0.36	0.39	0.42
9.900	0.44	0.47	0.49	0.51	0.53
10.150	0.55	0.57	0.59	0.62	0.64
10.400	0.66	0.69	0.71	0.74	0.76
10.650	0.79	0.81	0.84	0.87	0.90
10.900	0.93	0.96	0.99	1.02	1.05
11.150	1.09	1.14	1.20	1.27	1.34
11.400	1.41	1.49	1.58	1.69	1.85
11.650	2.10	2.37	2.59	2.88	3.24
11.900	3.62	4.07	4.71	5.79	8.32
12.150	10.20	11.07	11.14	10.88	10.44
12.400	9.87	9.20	8.46	7.67	6.89
12.650	6.17	5.55	5.20	5.06	4.91
12.900	4.77	4.63	4.49	4.34	4.17
13.150	4.01	3.86	3.72	3.59	3.46
13.400	3.30	3.16	3.02	2.90	2.78
13.650	2.67	2.57	2.47	2.38	2.30
13.900	2.14	2.00	1.88	1.78	1.69
14.150	1.61	1.55	1.49	1.44	1.40
14.400	1.36	1.33	1.30	1.28	1.25
14.650	1.23	1.21	1.19	1.17	1.15
14.900	1.13	1.12	1.10	1.08	1.07
15.150	1.05	1.03	1.02	1.00	0.99
15.400	0.97	0.96	0.94	0.93	0.91
15.650	0.90	0.88	0.87	0.85	0.84
15.900	0.82	0.81	0.79	0.78	0.76
16.150	0.75	0.74	0.73	0.71	0.70
16.400	0.70	0.69	0.68	0.67	0.66
16.650	0.66	0.65	0.64	0.63	0.63
16.900	0.62	0.61	0.61	0.60	0.59
17.150	0.59	0.58	0.57	0.57	0.56
17.400	0.55	0.55	0.54	0.53	0.53
17.650	0.52	0.51	0.51	0.50	0.49
17.900	0.49	0.48	0.47	0.47	0.46
18.150	0.45	0.45	0.44	0.44	0.44
18.400	0.43	0.43	0.43	0.42	0.42

Stormwater Report

Subsection: Pond Routed Hydrograph (total out) Return Event: 10 years
Label: MainPond (OUT) Storm Event: 10yr, 24hr
Scenario: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.650	0.42	0.42	0.42	0.41	0.41
18.900	0.41	0.41	0.40	0.40	0.40
19.150	0.40	0.40	0.39	0.39	0.39
19.400	0.39	0.39	0.38	0.38	0.38
19.650	0.38	0.38	0.37	0.37	0.37
19.900	0.37	0.37	0.36	0.36	0.36
20.150	0.36	0.36	0.36	0.35	0.35
20.400	0.35	0.35	0.35	0.35	0.34
20.650	0.34	0.34	0.34	0.34	0.34
20.900	0.33	0.33	0.33	0.33	0.33
21.150	0.33	0.33	0.32	0.32	0.32
21.400	0.32	0.32	0.32	0.31	0.31
21.650	0.31	0.31	0.31	0.31	0.31
21.900	0.30	0.30	0.30	0.30	0.30
22.150	0.30	0.30	0.29	0.29	0.29
22.400	0.29	0.29	0.29	0.28	0.28
22.650	0.28	0.28	0.28	0.28	0.28
22.900	0.27	0.27	0.27	0.27	0.27
23.150	0.27	0.26	0.26	0.26	0.26
23.400	0.26	0.26	0.26	0.25	0.25
23.650	0.25	0.25	0.25	0.25	0.25
23.900	0.24	0.24	0.24	(N/A)	(N/A)

Stormwater Report

Subsection: Pond Routed Hydrograph (total out)
Label: MainPond (OUT)
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Peak Discharge	20.96 ft³/s
Time to Peak	12.200 hours
Hydrograph Volume	2.996 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.400	0.00	0.03	0.09	0.15	0.20
7.650	0.24	0.27	0.30	0.33	0.35
7.900	0.37	0.39	0.41	0.43	0.44
8.150	0.46	0.48	0.49	0.51	0.53
8.400	0.55	0.56	0.58	0.60	0.62
8.650	0.64	0.66	0.68	0.70	0.72
8.900	0.75	0.77	0.79	0.81	0.83
9.150	0.86	0.88	0.90	0.93	0.95
9.400	0.98	1.00	1.02	1.05	1.08
9.650	1.10	1.13	1.15	1.18	1.21
9.900	1.23	1.26	1.29	1.31	1.34
10.150	1.38	1.41	1.45	1.49	1.53
10.400	1.57	1.61	1.66	1.71	1.76
10.650	1.80	1.85	1.91	1.96	2.01
10.900	2.06	2.12	2.17	2.23	2.29
11.150	2.33	2.38	2.44	2.52	2.60
11.400	2.69	2.79	2.90	3.04	3.24
11.650	3.50	3.81	4.21	4.66	5.14
11.900	6.73	9.11	12.40	15.51	18.52
12.150	20.25	20.96	20.91	20.50	19.89
12.400	19.12	17.99	16.63	15.22	13.85
12.650	12.56	11.20	9.98	8.95	8.08
12.900	7.33	6.68	6.11	5.62	5.26
13.150	5.15	5.04	4.93	4.83	4.73
13.400	4.63	4.53	4.44	4.33	4.22
13.650	4.12	4.01	3.92	3.82	3.73
13.900	3.64	3.55	3.47	3.37	3.26
14.150	3.17	3.08	3.00	2.92	2.84
14.400	2.77	2.71	2.65	2.59	2.53
14.650	2.48	2.43	2.38	2.33	2.28
14.900	2.19	2.12	2.05	1.99	1.94
15.150	1.89	1.85	1.81	1.77	1.73
15.400	1.70	1.67	1.64	1.61	1.58
15.650	1.55	1.52	1.49	1.46	1.44
15.900	1.41	1.38	1.36	1.33	1.31
16.150	1.28	1.26	1.24	1.22	1.21
16.400	1.19	1.17	1.16	1.15	1.13

Stormwater Report

Subsection: Pond Routed Hydrograph (total out)
Label: MainPond (OUT)
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.650	1.12	1.11	1.09	1.08	1.07
16.900	1.06	1.05	1.03	1.02	1.01
17.150	1.00	0.99	0.98	0.97	0.95
17.400	0.94	0.93	0.92	0.91	0.90
17.650	0.89	0.87	0.86	0.85	0.84
17.900	0.83	0.82	0.81	0.79	0.78
18.150	0.77	0.76	0.76	0.75	0.74
18.400	0.74	0.73	0.73	0.72	0.72
18.650	0.71	0.71	0.71	0.70	0.70
18.900	0.70	0.69	0.69	0.68	0.68
19.150	0.68	0.67	0.67	0.67	0.66
19.400	0.66	0.66	0.65	0.65	0.65
19.650	0.64	0.64	0.64	0.63	0.63
19.900	0.63	0.62	0.62	0.62	0.61
20.150	0.61	0.61	0.60	0.60	0.60
20.400	0.59	0.59	0.59	0.59	0.58
20.650	0.58	0.58	0.57	0.57	0.57
20.900	0.57	0.56	0.56	0.56	0.56
21.150	0.55	0.55	0.55	0.55	0.54
21.400	0.54	0.54	0.54	0.53	0.53
21.650	0.53	0.53	0.52	0.52	0.52
21.900	0.52	0.51	0.51	0.51	0.51
22.150	0.50	0.50	0.50	0.50	0.49
22.400	0.49	0.49	0.49	0.48	0.48
22.650	0.48	0.48	0.47	0.47	0.47
22.900	0.46	0.46	0.46	0.46	0.45
23.150	0.45	0.45	0.45	0.44	0.44
23.400	0.44	0.44	0.43	0.43	0.43
23.650	0.43	0.42	0.42	0.42	0.42
23.900	0.41	0.41	0.41	(N/A)	(N/A)

Stormwater Report

Subsection: Pond Inflow Summary
Label: MainPond (IN)
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Summary for Hydrograph Addition at 'MainPond'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Main BESS
<Catchment to Outflow Node>	Substation-Post
<Catchment to Outflow Node>	West-Post

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Main BESS	0.507	12.100	6.23
Flow (From)	Substation-Post	0.179	12.100	2.23
Flow (From)	West-Post	0.156	12.100	1.91
Flow (In)	MainPond	0.842	12.100	10.37

Stormwater Report

Subsection: Pond Inflow Summary
Label: MainPond (IN)
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Summary for Hydrograph Addition at 'MainPond'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Main BESS
<Catchment to Outflow Node>	Substation-Post
<Catchment to Outflow Node>	West-Post

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Main BESS	1.002	12.100	12.16
Flow (From)	Substation-Post	0.340	12.100	4.12
Flow (From)	West-Post	0.282	12.100	3.35
Flow (In)	MainPond	1.624	12.100	19.63

Stormwater Report

Subsection: Pond Inflow Summary
Label: MainPond (IN)
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Summary for Hydrograph Addition at 'MainPond'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Main BESS
<Catchment to Outflow Node>	Substation-Post
<Catchment to Outflow Node>	West-Post

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Main BESS	1.911	12.100	22.51
Flow (From)	Substation-Post	0.629	12.100	7.37
Flow (From)	West-Post	0.505	12.100	5.76
Flow (In)	MainPond	3.046	12.100	35.64

Stormwater Report

Subsection: Diverted Hydrograph
Label: Outlet-3
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

Peak Discharge	4.69 ft³/s
Time to Peak	12.300 hours
Hydrograph Volume	0.797 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.000	0.00	0.00	0.09	0.17	0.25
11.250	0.31	0.38	0.44	0.50	0.55
11.500	0.61	0.67	0.76	0.89	1.06
11.750	1.28	1.55	1.87	2.24	2.52
12.000	2.94	3.49	3.94	4.34	4.56
12.250	4.65	4.69	4.69	4.65	4.59
12.500	4.50	4.37	4.20	4.03	3.86
12.750	3.70	3.55	3.38	3.20	3.02
13.000	2.86	2.71	2.56	2.43	2.30
13.250	2.08	1.88	1.71	1.58	1.46
13.500	1.36	1.28	1.21	1.15	1.10
13.750	1.06	1.02	0.98	0.95	0.92
14.000	0.89	0.87	0.84	0.82	0.80
14.250	0.79	0.77	0.76	0.75	0.73
14.500	0.72	0.71	0.70	0.69	0.68
14.750	0.67	0.66	0.65	0.65	0.64
15.000	0.63	0.62	0.61	0.60	0.59
15.250	0.59	0.58	0.57	0.56	0.55
15.500	0.54	0.53	0.53	0.52	0.51
15.750	0.50	0.49	0.48	0.47	0.47
16.000	0.46	0.45	0.44	0.43	0.43
16.250	0.42	0.41	0.41	0.40	0.40
16.500	0.39	0.39	0.38	0.38	0.38
16.750	0.37	0.37	0.36	0.36	0.36
17.000	0.35	0.35	0.34	0.34	0.34
17.250	0.33	0.33	0.33	0.32	0.32
17.500	0.31	0.31	0.31	0.30	0.30
17.750	0.29	0.29	0.29	0.28	0.28
18.000	0.28	0.27	0.27	0.26	0.26
18.250	0.26	0.26	0.25	0.25	0.25
18.500	0.25	0.25	0.25	0.24	0.24
18.750	0.24	0.24	0.24	0.24	0.24
19.000	0.24	0.23	0.23	0.23	0.23
19.250	0.23	0.23	0.23	0.23	0.23
19.500	0.22	0.22	0.22	0.22	0.22
19.750	0.22	0.22	0.22	0.22	0.21
20.000	0.21	0.21	0.21	0.21	0.21

Stormwater Report

Subsection: Diverted Hydrograph
Label: Outlet-3
Scenario: 2yr, 24hr

Return Event: 2 years
Storm Event: 2yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
20.250	0.21	0.21	0.21	0.20	0.20
20.500	0.20	0.20	0.20	0.20	0.20
20.750	0.20	0.20	0.20	0.20	0.19
21.000	0.19	0.19	0.19	0.19	0.19
21.250	0.19	0.19	0.19	0.19	0.19
21.500	0.19	0.18	0.18	0.18	0.18
21.750	0.18	0.18	0.18	0.18	0.18
22.000	0.18	0.18	0.17	0.17	0.17
22.250	0.17	0.17	0.17	0.17	0.17
22.500	0.17	0.17	0.17	0.17	0.16
22.750	0.16	0.16	0.16	0.16	0.16
23.000	0.16	0.16	0.16	0.16	0.16
23.250	0.15	0.15	0.15	0.15	0.15
23.500	0.15	0.15	0.15	0.15	0.15
23.750	0.15	0.15	0.14	0.14	0.14
24.000	0.14	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Report

Subsection: Diverted Hydrograph
Label: Outlet-3
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

Peak Discharge	11.14 ft³/s
Time to Peak	12.250 hours
Hydrograph Volume	1.577 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.400	0.00	0.07	0.14	0.20	0.25
9.650	0.29	0.33	0.36	0.39	0.42
9.900	0.44	0.47	0.49	0.51	0.53
10.150	0.55	0.57	0.59	0.62	0.64
10.400	0.66	0.69	0.71	0.74	0.76
10.650	0.79	0.81	0.84	0.87	0.90
10.900	0.93	0.96	0.99	1.02	1.05
11.150	1.09	1.14	1.20	1.27	1.34
11.400	1.41	1.49	1.58	1.69	1.85
11.650	2.10	2.37	2.59	2.88	3.24
11.900	3.62	4.07	4.71	5.79	8.32
12.150	10.20	11.07	11.14	10.88	10.44
12.400	9.87	9.20	8.46	7.67	6.89
12.650	6.17	5.55	5.20	5.06	4.91
12.900	4.77	4.63	4.49	4.34	4.17
13.150	4.01	3.86	3.72	3.59	3.46
13.400	3.30	3.16	3.02	2.90	2.78
13.650	2.67	2.57	2.47	2.38	2.30
13.900	2.14	2.00	1.88	1.78	1.69
14.150	1.61	1.55	1.49	1.44	1.40
14.400	1.36	1.33	1.30	1.28	1.25
14.650	1.23	1.21	1.19	1.17	1.15
14.900	1.13	1.12	1.10	1.08	1.07
15.150	1.05	1.03	1.02	1.00	0.99
15.400	0.97	0.96	0.94	0.93	0.91
15.650	0.90	0.88	0.87	0.85	0.84
15.900	0.82	0.81	0.79	0.78	0.76
16.150	0.75	0.74	0.73	0.71	0.70
16.400	0.70	0.69	0.68	0.67	0.66
16.650	0.66	0.65	0.64	0.63	0.63
16.900	0.62	0.61	0.61	0.60	0.59
17.150	0.59	0.58	0.57	0.57	0.56
17.400	0.55	0.55	0.54	0.53	0.53
17.650	0.52	0.51	0.51	0.50	0.49
17.900	0.49	0.48	0.47	0.47	0.46
18.150	0.45	0.45	0.44	0.44	0.44
18.400	0.43	0.43	0.43	0.42	0.42

Stormwater Report

Subsection: Diverted Hydrograph
Label: Outlet-3
Scenario: 10yr, 24hr

Return Event: 10 years
Storm Event: 10yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.650	0.42	0.42	0.42	0.41	0.41
18.900	0.41	0.41	0.40	0.40	0.40
19.150	0.40	0.40	0.39	0.39	0.39
19.400	0.39	0.39	0.38	0.38	0.38
19.650	0.38	0.38	0.37	0.37	0.37
19.900	0.37	0.37	0.36	0.36	0.36
20.150	0.36	0.36	0.36	0.35	0.35
20.400	0.35	0.35	0.35	0.35	0.34
20.650	0.34	0.34	0.34	0.34	0.34
20.900	0.33	0.33	0.33	0.33	0.33
21.150	0.33	0.33	0.32	0.32	0.32
21.400	0.32	0.32	0.32	0.31	0.31
21.650	0.31	0.31	0.31	0.31	0.31
21.900	0.30	0.30	0.30	0.30	0.30
22.150	0.30	0.30	0.29	0.29	0.29
22.400	0.29	0.29	0.29	0.28	0.28
22.650	0.28	0.28	0.28	0.28	0.28
22.900	0.27	0.27	0.27	0.27	0.27
23.150	0.27	0.26	0.26	0.26	0.26
23.400	0.26	0.26	0.26	0.25	0.25
23.650	0.25	0.25	0.25	0.25	0.25
23.900	0.24	0.24	0.24	(N/A)	(N/A)

Stormwater Report

Subsection: Diverted Hydrograph
Label: Outlet-3
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

Peak Discharge	20.96 ft³/s
Time to Peak	12.200 hours
Hydrograph Volume	2.996 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.400	0.00	0.03	0.09	0.15	0.20
7.650	0.24	0.27	0.30	0.33	0.35
7.900	0.37	0.39	0.41	0.43	0.44
8.150	0.46	0.48	0.49	0.51	0.53
8.400	0.55	0.56	0.58	0.60	0.62
8.650	0.64	0.66	0.68	0.70	0.72
8.900	0.75	0.77	0.79	0.81	0.83
9.150	0.86	0.88	0.90	0.93	0.95
9.400	0.98	1.00	1.02	1.05	1.08
9.650	1.10	1.13	1.15	1.18	1.21
9.900	1.23	1.26	1.29	1.31	1.34
10.150	1.38	1.41	1.45	1.49	1.53
10.400	1.57	1.61	1.66	1.71	1.76
10.650	1.80	1.85	1.91	1.96	2.01
10.900	2.06	2.12	2.17	2.23	2.29
11.150	2.33	2.38	2.44	2.52	2.60
11.400	2.69	2.79	2.90	3.04	3.24
11.650	3.50	3.81	4.21	4.66	5.14
11.900	6.73	9.11	12.40	15.51	18.52
12.150	20.25	20.96	20.91	20.50	19.89
12.400	19.12	17.99	16.63	15.22	13.85
12.650	12.56	11.20	9.98	8.95	8.08
12.900	7.33	6.68	6.11	5.62	5.26
13.150	5.15	5.04	4.93	4.83	4.73
13.400	4.63	4.53	4.44	4.33	4.22
13.650	4.12	4.01	3.92	3.82	3.73
13.900	3.64	3.55	3.47	3.37	3.26
14.150	3.17	3.08	3.00	2.92	2.84
14.400	2.77	2.71	2.65	2.59	2.53
14.650	2.48	2.43	2.38	2.33	2.28
14.900	2.19	2.12	2.05	1.99	1.94
15.150	1.89	1.85	1.81	1.77	1.73
15.400	1.70	1.67	1.64	1.61	1.58
15.650	1.55	1.52	1.49	1.46	1.44
15.900	1.41	1.38	1.36	1.33	1.31
16.150	1.28	1.26	1.24	1.22	1.21
16.400	1.19	1.17	1.16	1.15	1.13

Stormwater Report

Subsection: Diverted Hydrograph
Label: Outlet-3
Scenario: 100yr, 24hr

Return Event: 100 years
Storm Event: 100yr, 24hr

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.650	1.12	1.11	1.09	1.08	1.07
16.900	1.06	1.05	1.03	1.02	1.01
17.150	1.00	0.99	0.98	0.97	0.95
17.400	0.94	0.93	0.92	0.91	0.90
17.650	0.89	0.87	0.86	0.85	0.84
17.900	0.83	0.82	0.81	0.79	0.78
18.150	0.77	0.76	0.76	0.75	0.74
18.400	0.74	0.73	0.73	0.72	0.72
18.650	0.71	0.71	0.71	0.70	0.70
18.900	0.70	0.69	0.69	0.68	0.68
19.150	0.68	0.67	0.67	0.67	0.66
19.400	0.66	0.66	0.65	0.65	0.65
19.650	0.64	0.64	0.64	0.63	0.63
19.900	0.63	0.62	0.62	0.62	0.61
20.150	0.61	0.61	0.60	0.60	0.60
20.400	0.59	0.59	0.59	0.59	0.58
20.650	0.58	0.58	0.57	0.57	0.57
20.900	0.57	0.56	0.56	0.56	0.56
21.150	0.55	0.55	0.55	0.55	0.54
21.400	0.54	0.54	0.54	0.53	0.53
21.650	0.53	0.53	0.52	0.52	0.52
21.900	0.52	0.51	0.51	0.51	0.51
22.150	0.50	0.50	0.50	0.50	0.49
22.400	0.49	0.49	0.49	0.48	0.48
22.650	0.48	0.48	0.47	0.47	0.47
22.900	0.46	0.46	0.46	0.46	0.45
23.150	0.45	0.45	0.45	0.44	0.44
23.400	0.44	0.44	0.43	0.43	0.43
23.650	0.43	0.42	0.42	0.42	0.42
23.900	0.41	0.41	0.41	(N/A)	(N/A)

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APPENDIX E – PRE- AND POST-CONSTRUCTION FIGURES


TIME OF CONCENTRATION FLOW PATH
WEST WATERSHED
1.0 ACRES
Tc = 0.196 HOURS
PROPERTY LINE
TIME OF CONCENTRATION FLOW PATH
EAST WATERSHED
4.2 ACRES
Tc = 0.424 HOURS
TOTAL AREA
8.398 AC.
MILFORD
(PUBLIC - ROUTE 109)
250' WIDE ELECTRIC EASEMENT
APPROX. 20' WIDE ELECTRIC SERVICE EASEMENT
APPROX. 25' GAS LINE EASEMENT
APPROXIMATE LOT LINE
M: 56 L: 003
N/F
BOSTON EDISON CO.
M: 56 L: 004
N/F
BOSTON EDISON CO.
M: 56 L: 4
N/F
BOSTON EDISON CO.
BENCHMARK:
SPIKE SET IN GROUND
ELEV. = 260.20 NAVD88
53 MILFORD STREET LLC
MAP 56 LOT 6
LIMIT OF WETLANDS
100' WETLAND BUFFER
LIMIT 200' RIVERFRONT AREA
WETLAND BUFFER
RIVERFRONT AREA
M: 56 L: 10
N/F
FLANNAGAN
M: 56 L: 7
HENRY & THOMAS
MENON & LAHIRI
LEGEND
CHAIN LINK FENCE
CONCRETE BOUND W/ DRILL HOLE
FOUND
IRON ROD/PIPE
LIGHT POLE
UTILITY POLE
CORRUGATED METAL PIPE
CATCH BASIN
REINFORCED CONCRETE PIPE
EDGE OF PAVEMENT
GATE POST
SIGN
UNDERGROUND ELECTRIC
OVERHEAD WIRES
WETLAND FLAGS
LIMIT OF WETLANDS
100' WETLAND BUFFER
LIMIT 200' RIVERFRONT AREA
Scale For Microfilming
Millimeters
Inches

no.	date	by	ckd	description	no.	date	by	ckd	description
A	12/06/21	ERA	BRS	ISSUED FOR PERMITTING					

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400

designed: E. ASNICAR
detailed: E. ASNICAR

MEDWAY BATTERY ENERGY STORAGE SYSTEM PROJECT

MEDWAY GRID ENERGY STORAGE PROJECT
PRE-CONSTRUCTION WATERSHEDS

project | contract
drawing: **FIGURE 2-1** — rev. **A**
sheet | of | sheets
file

NOTES:

1. THE STORMWATER POND HAS A SURFACE AREA OF 0.4 ACRES. THE MAXIMUM DEPTH IS 7 FEET.

   SIZES AND LOCATIONS OF SUBSURFACE TREATMENT STRUCTURES
2. ARE APPROXIMATE.

Scale For Microfilming
Millimeters
Inches

no.	date	by	ckd	description
A	12/06/21	ERA	BRS	ISSUED FOR PERMITTING

NORTH

0 20' 40' 80'
SCALE IN FEET

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400

designed E. ASNICAR | detailed E. ASNICAR

MEDWAY BATTERY ENERGY STORAGE SYSTEM PROJECT

MEDWAY GRID ENERGY STORAGE PROJECT
POST-CONSTRUCTION WATERSHEDS

project | contract

drawing **FIGURE 2-2** rev. **A**

sheet | of | sheets

file

CREATE AMAZING.