

STORMWATER MANAGEMENT REPORT

for

Belmont Hill School
350 Prospect St, Belmont, MA 02478

Prepared For:

Belmont Hill School
350 Prospect St
Belmont, MA 02478

Prepared By:

Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114



Kevin Hebard, P.E.
khebard@langan.com



Frank Holmes, P.E.
Massachusetts Licensed Professional Engineer No. 40203
fholmes@langan.com

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EXECUTIVE SUMMARY

The stormwater management report has been prepared in support of the proposed development at the Belmont Hill School.

Project Description

The proposed development consists of three separate areas: an area north and west of Prospect St and Park Ave (hereafter referred to as the "East Campus"), the open space and parking areas where Marsh Street meets Prospect Street ("Upper Lot / Front Lawn") and the parking and back of house area between the Jordan Athletics Building and Marsh St ("Jordan Lot").

The work in the East Campus area is a new development that includes new parking facilities, a maintenance building and landscape improvements.

The work in the Upper Lot / Front Yard is a redevelopment of the existing parking and pedestrian walkways to improve operation.

The work in the Jordan Lot is a new development that includes renovated and additional parking areas as well as a new curb cut to improve vehicular circulation.

Regulatory Authority

Stormwater management methodologies proposed for the site are in compliance with The Town of Belmont Checklist for Stormwater Management and Erosion Control Checklist (10/21/13), and the Stormwater Management and Erosion Control Bylaw (§ 60-325 of the Belmont General Bylaws) and associated regulations adopted September 29, 2014. The Belmont Office of Community Development is the permit granting authority.

The following activities are part of the proposed project and are regulated under the Stormwater Management and Erosion Control Bylaw: connection of a pipe or other appurtenance to the Belmont Municipal Separate Stormwater System (MS4) and land disturbance of more than 2,500 square feet of total area.

This submittal includes the following:

- A completed Stormwater Management and Erosion Control Permit Application (submitted with this report)
- A stormwater Management and Erosion Control Plan (attached separately)

- The Checklist for Stormwater Management and Erosion Control Plan (Appendix A)
- An Operation and Maintenance Plan (Appendix I)

The stormwater management report has been designed in accordance with the most recent versions of the town of Belmont Stormwater Management Rules and Regulations, Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook, and the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES).

Stormwater Management

There is currently one stormwater management BMP within the limits of the proposed project – a subsurface detention basin under the main athletics parking lot.

The project will result in an increase in impervious area of 1.775 acres. This area consists of traditional pavement, permeable pavement (1.257 ac) and a new maintenance building

To mitigate the impacts of this development, the project proposes two additional subsurface infiltration facilities and several areas of permeable pavement to treat and infiltrate runoff. Additionally, the project includes several proprietary water quality structures for pretreatment and primary treatment of stormwater. Combined, these practices provide rate control, volume control, groundwater recharge and water quality control to meet or exceed all requirements of the Town of Belmont Stormwater Management and Erosion Control Bylaw and Regulations. As required in the Town Checklist, the following report documents compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook.

Summary

It is the opinion of this office and the findings of this report that the proposed stormwater system, as designed, will effectively manage quality and quantity of stormwater runoff for the proposed development in accordance with the Town of Belmont and the MassDEP's regulations.

1.0 INTRODUCTION

1.1 General

This stormwater management report has been prepared in support of the proposed development at the Belmont Hill School. The proposed development includes the development of existing residential vacant parcels into a parking facility, a maintenance facility and open space in the East Campus, a redevelopment of parking and open space in the Upper Lot / Front Yard and a development of parking facilities in the Jordan Lot. This report addresses the engineering design of stormwater conveyance and management systems for the project site.

The development results in an increase in impervious area in the East Campus and the Jordan Lot. The redevelopment of the Upper Lot / Front Yard results in a decrease in impervious area.

Table 1.1.1: Impervious Area – East Campus

	Existing Condition Impervious Area		Proposed Condition Impervious Area	
Impervious Area	0.829 ac	13.4%	1.134 ac	18.3%
Permeable Pavement	0.000 ac	00.0%	1.257 ac	20.3%
Permeable Area	5.353 ac	86.6%	3.791 ac	61.3%

Table 1.1.2: Impervious Area –Upper Lot / Front Yard

	Existing Condition Impervious Area		Proposed Condition Impervious Area	
Impervious Area	0.484 ac	42.4%	0.479 ac	41.9%
Permeable Area	0.658 ac	47.6%	0.663 ac	58.1%

Table 1.1.3: Impervious Area – Jordan Lot

	Existing Condition Impervious Area		Proposed Condition Impervious Area	
Impervious Area	0.348 ac	38.8%	0.566 ac	63.0%
Permeable Area	0.550 ac	61.2%	0.332 ac	37.0%

1.2 Site Location

The East Campus site is bound by Park Avenue to the west, Prospect Street to the south, and residential abutters to the north and east. The site is 6.182 acres, comprised of six parcels: 12 Park Avenue, 20 Park Avenue, 315 Prospect Street, 305 Prospect Street, 301 Prospect Street and 283 Prospect Street.

The Upper Lot / Front Yard area is a ~1.14 acre portion of the Belmont Hill School Campus consisting of the existing campus frontage where Marsh St meets Prospect.

The Jordan Lot area is a ~0.90 acre portion of the Belmont Hill School Campus located between the Jordan Athletics Building and Marsh Street.

1.3 Existing Conditions

The existing East Campus site includes five residential properties and one vacant residential lot. The runoff from the site discharges to three separate areas: a portion of the site discharges to Park Avenue drainage network, a portion to Prospect Street and a portion drains to a wetland area to the east of the site. The eastern portion of the site includes a wetland resource area. There are no flood zones or identified protected habitats on the site.

Runoff from both the Jordan Lot and Upper Lot / Front Yard areas flows to a 30-inch storm sewer in an easement that runs south through the campus. Flow from these areas enters the 30-inch trunk line at three locations: catchbasins in Marsh Street, the outfall from an existing stormwater management facility in the main campus parking lot and catchbasins in the parking lot downstream of the existing stormwater management facility. All three of these locations have been used as points of analysis to show no adverse impact to any segment of the trunk line.

The catchbasins in Marsh St are designated as Design Point D. The existing stormwater management facility is designated Design Point E. The trunk line downstream of the stormwater BMP is designated Design Point F. Outflow from both Design Point D and Design E are routed to Design Point F.

The Upper Lot / Front Yard area consists of parking lot and open space. Runoff from the eastern portion of this area flows into Marsh Street, to Design Point D. Runoff from the western portion of this area flows overland to catchbasins in the main parking lot. These catchbasins connect to the drainage trunk line at Design Point F.

The Jordan Lot area consists of parking lot, back-of-house operations space and open space. The runoff from western portion of this area flows into Marsh Street, to Design Point D. Runoff from the eastern portion of this area flows to the existing stormwater management facility (Design Point E) via an existing stormwater catchment network.

See Figures 1 and 2 for plan view of the project sites.

1.4 Project Description

The East Campus development will demolish the house and pavement at 283 Prospect Street for new paved parking, a new maintenance building, open space and site improvements including drainage, stormwater management facilities, utilities and landscaping.

The Upper Lot / Front Yard proposed redevelopment maintains the same land use with new configurations to support campus operations. The proposed site includes parking area and open space.

The Jordan Lot proposed development maintains the same land use with new configurations to support campus operations. The proposed site includes parking area and open space.

The development areas will have stormwater management facilities including pervious pavement, subsurface detention/infiltration facilities and proprietary water quality structures. The Upper Lot / Front Yard area is considered redevelopment and no new stormwater infrastructure is proposed for this area.

1.5 FEMA

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map there are no flood zone areas on the development site.

1.6 Soil Conditions

According to the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey, the site soil type is comprised of Narragansett-Hollis-Rock outcrop complex, Narragansett silt loam, Canton-Charlton-Urban land complex, Newport-Urban land complex, and Udorthents (see figures at the end of this report).

Soils are classified into hydrologic soil groups (HSG) to indicate the minimum rate of infiltration obtained for bare soil after prolonged wetting. The HSGs, which are A, B, C

and D, are one element used to determine runoff curve numbers and analyzing stormwater characteristics of a site.

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.

The Web Soil Survey has classified most of the site soils as hydrologic soil groups A and D. Our geotechnical investigations of the site support the NRCS classifications so we have modeled the site soils as hydrologic soil groups A and D to match the NRCS Web Soil Survey data. Some soils are not classified into hydrologic soil groups (HSG) by NRCS. The Udorthents on this site are previously disturbed soils and not classified. We have modeled these unclassified soils to be HSG A based on our understanding of the history of the site and our on-site evaluation of the subsurface conditions.

Table 1.6.1: Site Soils

Map Unit Symbol	Map Unit Name	HSG Rating
106C	Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes	A
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony	A
627C	Newport-Urban land complex, 3 to 15 percent slopes	D
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	A
654	Udorthents, loamy	A (assumed)
655	Udorthents, wet substratum	A (assumed)

Subsurface explorations have been completed by Langan. Langan performed an exploratory program of eight test pits and seven infiltration tests in the East Campus area and nine test pits and eight infiltration tests across the Jordan Lot and Upper Lot / Front Yard areas.

Our investigation results showed that the East Campus site generally consists of a layer of topsoil or fill (underlain by a layer of buried topsoil) underlain by a layer of sandy silt, a layer of sand, and bedrock. Groundwater was not encountered during our subsurface exploration.

Our investigation results showed that the Jordan Lot and Upper Lot / Front Yard areas generally consist of fill or a layer of topsoil over fill. Fill was encountered at the ground surface or below the topsoil in all test pits. Where encountered, the fill is underlain by either a layer of buried topsoil, silt, or sand. Bedrock was not encountered in any of the test pits. Groundwater was encountered in one test pit.

Table 1.6.2: Selected Site Soils Infiltration Rates

Location (Test ID)	Field Saturated Hydraulic Conductivity	Material Type
TP-3 (IT-3)	0.588 in/hr	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-5 (IT-8)	0.391 in/hr	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-7 (IT-7)	0.800 in/hr	Gray coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-208 (IT-208)	0.940 in/hr	Light brown coarse to fine SAND, some silt, some fine gravel (moist)

The infiltration tests in the table above are the tests used in the design of the stormwater BMPs later in this report. Field infiltration tests were performed with constant head infiltration testing methods using the Guelph Permeameter in general accordance with ASTM D 5126. Additional tests results are presented in the full geotechnical report. Please reference Appendix K for a full report with test pit locations, observations, and soil testing.

No soils have a rapid infiltration rate.

2.0 STORMWATER MANAGEMENT CRITERIA

2.1 Stormwater Management Regulations

The purpose of the Stormwater Management Plan is to provide long-term protection of natural resources in and around the site. This is achieved by implementing stormwater quality and quantity control measures designed to reduce pollutant discharge from the site, maintain a level of stormwater recharge, and control discharge rates.

The following regulations and guidelines were referenced for this project:

- Massachusetts Stormwater Handbook (2008)
- U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction Activities (EPA, Federal Register, December 8, 1999 as amended).

- Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, Department of Environmental Protection, Bureau of Resource Protection (May 2003)
- U.S. EPA's NPDES Small Municipal Separate Storm Sewer Systems (MS4) General Permit (EPA, 2016).
- Massachusetts Department of Transportation Project Development and Design Guide, Chapter 8 Drainage and Erosion Control (2006)
- Town of Belmont Stormwater Management and Erosion Control By-Law (2021)

2.2 MassDEP Stormwater Performance Standards

A summary of MassDEP Stormwater Performance Standards as well as a method of ensuring compliance with each standard are summarized below:

1. No new stormwater conveyances may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Response: New stormwater conveyances include treatment practices to prevent untreated stormwater discharges. Some proposed treatment train features include pervious pavement, subsurface infiltration facilities and proprietary water quality treatment structures. Permanent erosion control measures include rip rap outlet protection. These measures, explained in further detail in Section 4 and 7 and Appendices D, E, F and H of this report, are intended to treat stormwater discharge to and reduce erosion in wetlands or waters of the Commonwealth.

2. Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Response: The development of this site, as discussed in Section 3 and Appendices B and C of this report, will result in an overall decrease of peak discharge rates from the existing condition.

3. Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge

from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Response: This project proposes to increase the groundwater recharge volume in the proposed condition as compared to the existing condition. Supporting calculations regarding groundwater recharge volume can be found in Section 5 and Appendix C of this report.

4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:
- Suitable practices for source control and pollution prevention are identified in a long- term pollution prevention plan, and thereafter are implemented and maintained;
 - Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and
 - Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Response: Runoff generated from the proposed project will meet the water quality requirements of this standard using a variety of on-site treatment practices to exceed the 80% TSS removal requirement. Proposed treatment train features include catch basins with hoods and deep sumps, water quality units, and subsurface infiltration systems. TSS Removal Worksheets can be found in Appendix D of this report.

Stormwater Operations & Maintenance Measures are included in Appendix H of this report.

5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific

structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

Response: The proposed development does not include a Land Use with a Higher Potential Pollutant Load (LUHPPL).

6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area, if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

Response: The project is not located within a Zone II or IWPA and does not discharge near to a critical area.

7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

Response: The work in the East Campus and in the Jordan Lot does not meet the criteria for a redevelopment project. The work in the Upper Lot / Front Yard has been designed to reduce impervious area and is considered redevelopment

8. A plan to control construction related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

All redevelopment projects shall fully comply with Standard 8.

Response: Soil erosion and sediment control plans have been developed for this project and can be found in the drawings attached to this report. The plans have been designed in accordance with the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas.

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Response: Stormwater Operations & Maintenance Plans are included in Appendix H.

10. All illicit discharges to the stormwater management system are prohibited.

Response: The stormwater management system for this site does not include any illicit connections to the stormwater system. An illicit discharge compliance statement is included in Appendix I of this report.

2.3 Town of Belmont Stormwater Management and Erosion Control Rules & Regulations

Sanitary Sewer and Storm Drain Connections

The project includes both new storm drain and sanitary sewer drain connections.

- A. Submittal Requirements

A permit application will be filed with this report. Construction drawings showing the required design details are submitted with this report.

- B. Design and Installation Requirements

New connections to the storm drain system are proposed at the new driveway across from #75 Marsh Street and at the new driveway proposed at #20 Park Ave. A new connection to the sanitary sewer network is proposed at the current location of the driveway of #283 Prospect St. The rest of the stormwater infrastructure will utilize existing connections to the stormwater network or be daylighted within the property.

The existing sanitary sewer connection at #20 Park Ave will be abandoned in conformance with Town of Belmont requirements.

C. Inspections

Storm Drainage Note 8 and Utilities Note 17 on sheet CS-002 Notes & Legend require inspection of sanitary and storm sewer connections in conformance with Town of Belmont requirements.

Land Disturbance

A. Applicability

This section is applicable because the total land disturbance from this project is greater than 2,500 square feet and involves the storage or permanent placement of more than 100 cubic yards of excavated material or fill.

B. Submittal Requirements

A permit application will be filed with this report. Construction drawings showing the required design details are submitted with this report. The Town of Belmont Checklist for Stormwater Management and Erosion Control Plan is attached to this report as Appendix A. An Operation and Maintenance Plan is attached to this report as Appendix H.

C. In Lieu Fees

The proposed design satisfies the Bylaw and Regulations and no in-lieu fees are proposed at this time.

D. Operation and Maintenance Plan

An Operation and Maintenance Plan meeting Town of Belmont requirements is attached to this report as Appendix H.

E. Design Criteria

a. Stormwater Management Standards and Handbook

This Stormwater Management Report documents how each of the Mass DEP's standards are met for the proposed project. See Section 2.2, above, for a summary of the Mass DEP standards and how they are met.

b. Erosions and Sediment Controls

Construction period erosion and sediment controls have been designed to prevent any adverse impact during disturbance and construction activities. These measures are identified in Section 8 of this report and are shown in the Erosion Control Plans submitted with this report.

c. Changes to Existing Conditions of Abutting Properties

This report identifies potential changes to the existing condition of abutting properties. Section 3 of this report includes calculation results showing that the post-development discharge volume is equal to or less

than the pre-development discharge volume from the 2-year, 10-year, 25-year, and 100-year 24-hour storms for each design point. These calculations use Northeast Regional Climate Center rainfall data and SCS TR-20 methodologies.

This project included infiltration practices with potential to impact groundwater mounding. Groundwater mounding calculations are provided in Section 5 and Appendix G of this report. These calculations show that the mounding does not reach the bottom of the infiltration system, nor does it have an adverse impact on adjacent infrastructure.

d. Impact on Streams, Wetlands or Storm Sewers

The project does not include direct impact to any streams, wetlands of buffer zones. One stormwater outfall discharges to a wooded area upstream of a wetland buffer area. Outlet protection calculations are included in Section 7 and Appendix F of this report to show that the discharge from this outfall will be adequately controlled to prevent erosion and adverse impact downstream.

3.0 STORMWATER QUANTITY

3.1 Design Criteria

Peak flow rates and flow volumes at all points of discharge from the site were analyzed to compare proposed discharge rates with the existing condition.

The storms analyzed include the following:

- A 2-year, 24-hour storm consisting of 3.22 inches of rainfall
- A 10-year, 24-hour storm consisting of 4.87 inches of rainfall
- A 25-year, 24-hour storm consisting of 6.17 inches of rainfall
- A 100-year, 24-hour storm consisting of 8.85 inches of rainfall

These events are based on the Northeast Regional Climate Center (NRCC) Extreme Precipitation Tables for Type III, 24-hour storm events.

3.2 Design Methodology

The peak runoff discharges for the existing and proposed conditions were analyzed in HydroCAD, a modeling program, using Soil Conservation Service (SCS) TR-20 methodology, which outlines procedures for calculating peak rates of runoff resulting from precipitation events, and procedures for developing runoff hydrographs. Values for area, curve number, and time of concentration were calculated for the existing and proposed conditions.

The curve number "CN" is a land-sensitive coefficient that dictates the relationship between total rainfall depth and direct storm runoff. The soils within the watershed are divided into hydrologic soil groups (A, B, C and D) as previously described.

The time of concentration, T_c , is defined as the time for runoff to travel from the hydraulically most distant point in the watershed to a point of interest. Values of time of concentration were determined for existing and proposed conditions based on land cover and slope of the flow path, using methods outlined in the SCS methodology.

For this study, a 24-hour SCS Type III standard rainfall distribution was used to determine the peak flow rate to all points of discharge from the site.

3.3 Existing Runoff Discharges

The site has been broken into seven watersheds, with corresponding design points, as shown on the EX-WS map included in the drawings section of this report. The existing watersheds analyzed in this report were delineated into Watersheds A, B, C, D, E and F as described below:

Design Point A is where runoff from the site runs to the gutter of Park Avenue before reaching the municipal stormwater network. Tributary to this design point is Drainage Area A (1.826 ac), the northwestern portion of the East Campus.

Design Point B is where runoff from the site flows overland to a wooded area east of the East Campus. This wooded area includes a wetland resource area. Tributary to this design point is Drainage Area B (3.847 ac), the eastern portion of the East Campus.

Design Point C is the point where runoff from the site runs to the gutter of Prospect Street before reaching the municipal stormwater network. Tributary to this design point is Drainage Area C (0.509 ac), the sidewalk and Prospect Street frontage area of the East Campus.

Design Point D is where runoff from the site runs to the gutter of Marsh Street before reaching the municipal stormwater network. Tributary to this design point is Sub-drainage Area D1 (0.435 ac), the western portion of the Jordan Lot, and Sub-drainage Area D2 (0.582 ac), the eastern portion of the Upper Lot / Front Yard Area.

Design Point E is where runoff reaches an existing stormwater detention BMP in the main parking lot before entering the municipal stormwater network. Tributary to this design points are Sub-drainage Areas E1 (0.290 ac) and E2 (0.173 ac), the eastern portion of the Jordan Lot area.

Design Point F is where runoff from the site reaches the municipal stormwater network via catchbasins in the parking lot, without being routed to the existing stormwater BMP. Runoff from Design Point D and Design Point E are routed to Design Point F because those design points connect to the same 30" drainage trunk line as Design Point F. Runoff from all three design points joins here before leaving the site. In addition to runoff from DP-D and DP-E, runoff from Drainage Area F (0.560 ac) is routed to DP-F. This drainage area includes the western portion of the Upper Lot / Front Yard Area.

See Appendix B for calculations of each of the drainage areas.

3.4 Proposed Runoff Discharges

The proposed watershed analysis remains within the previously defined limits of the existing drainage areas. The drainage areas discharge to the same design points as in the existing condition but have been divided into sub-drainage areas to model the proposed stormwater management best management practices. The proposed conditions drainage areas are shown on the PR-WS map included in the drawings section of this report. The existing watersheds analyzed in this report were delineated into Watersheds A, B, C, D and E as described below:

Drainage Area A (1.875 ac) has been subdivided into A1 and A2. Sub-drainage Area A1 includes the proposed pervious pavement parking lot designated as "Permeable Pavement A1". Sub-drainage Area A2 flows directly into the municipal storm system in Park Avenue. Both these watersheds connect to Design Point A.

Drainage Area B (3.817 ac), has been subdivided into B1, B2, B3 and B4. Sub-drainage Area B1 includes the pervious pavement parking lot designated as "Permeable Pavement B1". Sub- drainage Area B2 includes the existing residential building to remain and landscaped area. Watershed B3 includes the maintenance yard and building and flows through the proposed subsurface infiltration facility "Infiltration BMP B3". Sub-drainage

Area B4 is a pervious pavement driveway designated as "Permeable Pavement B4". Runoff from these areas discharge to Design Point B.

Drainage Area C (0.490 ac) is the area northeast of Prospect Street that drains to the Prospect Street municipal drainage system. This area includes sidewalk and landscaped areas along the parcel frontage.

Drainage Area D (1.235 ac) has been divided into D1 and D2. D1 is the western portion of the Jordan Lot that is routed through a proposed stormwater infiltration facility referred to as "Infiltration BMP D1". The discharge from this facility is routed to the stormwater network in Marsh Street. D2 is the western portion of the Upper Lot / Front Yard area that drains overland into Marsh Street.

Drainage Area E (0.245 ac) has been split into E1 and E2. These drainage areas all route to the existing subsurface stormwater detention facility. E1 contains the new curb cut and driveway and is routed to a water quality structure (WQS-201) for treatment before being routed to the existing BMP with the runoff from E2.

Drainage Area F (0.560 ac) is the eastern portion of the Upper Lot / Front Yard area from which runoff flows overland into the main parking lot that enters the 30-inch storm sewer via existing catchbasins, downstream of the existing subsurface detention system.

The project has been designed so that post-construction peak flow rates do not exceed pre-construction peak flow rates, as required by MassDEP Stormwater Standard 2. See Table 3.4.1 below for the peak flow runoff rate comparison.

See Appendix C for calculations of each of the drainage areas, and for the routing of hydrographs from the drainage area through stormwater best management practices.

Table 3.4.1: Peak Flow Runoff Rate Comparison, Existing vs. Proposed Conditions (cfs)

Design Point	Condition	2-year	10-year	25-year	100-year
A	Pre (cfs)	1.31	3.13	4.73	8.24
	Post (cfs)	1.31	3.03	4.54	7.85
	Delta	-0%	-3%	-4%	-5%
B	Pre (cfs)	0.04	0.81	2.26	6.83
	Post (cfs)	0.00	0.77	1.99	5.61
	Delta	-100%	-5%	-12%	-18%
C	Pre (cfs)	0.00	0.10	0.31	1.00
	Post (cfs)	0.00	0.07	0.22	0.84
	Delta	-0%	-30%	-21%	-18%
D	Pre (cfs)	0.57	1.64	2.63	4.87
	Post (cfs)	0.44	1.11	1.72	3.05
	Delta	-23%	-32%	-35%	-37%
E	Pre (cfs)	0.34	0.62	0.87	1.62
	Post (cfs)	0.27	0.57	0.82	1.37
	Delta	-11%	-8%	-8%	-15%
F	Pre (cfs)	1.99	4.18	6.09	10.46
	Post (cfs)	1.77	3.60	5.14	8.53
	Delta	-11%	-14%	-16%	-18%

The project has been designed so that post-construction peak volumes do not exceed pre-construction peak volumes, as required by the town of Belmont. See Table 3.4.2 below for the peak volume comparison.

Table 3.4.2: Runoff Volume Comparison, Existing vs. Proposed Conditions (acre-ft.)

Design Point	Condition	2-year	10-year	25-year	100-year
A	Pre (cf)	0.143	0.319	0.477	0.829
	Post (cf)	0.139	0.303	0.499	0.773
	Delta	-3%	-4%	-5%	-7%
B	Pre (cf)	0.024	0.158	0.323	0.780
	Post (cf)	0.002	0.090	0.195	0.479
	Delta	-92%	-43%	-40%	-39%
C	Pre (cf)	0.003	0.019	0.040	0.098
	Post (cf)	0.001	0.015	0.033	0.085
	Delta	-67%	-21%	-18%	-13%
D	Pre (cf)	0.058	0.142	0.221	0.404
	Post (cf)	0.041	0.094	0.143	0.252
	Delta	-29%	-34%	-35%	-38%
E	Pre (cf)	0.025	0.052	0.079	0.145
	Post (cf)	0.025	0.051	0.073	0.122
	Delta	-0%	-2%	-8%	-16%
F	Pre (cf)	0.169	0.350	0.514	0.883
	Post (cf)	0.148	0.296	0.459	0.853
	Delta	-12%	-15%	-11%	-3%

4.0 STORMWATER QUALITY

4.1 Stormwater Quality Improvements

The stormwater management system has been designed in accordance with the MassDEP Stormwater Handbook, the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, the Town of Belmont Stormwater Management and Erosion Control By-Law, and to the greatest extent practicable the Massachusetts Small MS4 General Permit.

The WQV has been calculated using 1/2 inch over all new impervious areas, with the exception of roof areas.

The site utilizes a number of stormwater best management practices to provide stormwater quality and attenuation. Below are the BMPs used in the proposed design:

- Catch basins with deep sumps: Catch basins on the site are to be constructed with sumps (minimum 4 feet) to prevent discharge of sediments.

All stormwater BMPs have been designed to treat a water quality volume equal to ½” across impervious surface in the drainage area or a water quality flow volume converted from the required water quality volume. See calculation below.

Table 4.1.1: Water Quality Volume Required

Stormwater BMP	Drainage Areas	Impervious Area	Water Quality Volume Required	Water Quality Volume Provided
Permeable Pavement A1	A1, A2	24,132 sf	1,006 cf	5,880 cf
Permeable Pavement B1	B1	38,276 sf	1,599 cf	22,080 cf
Infiltration BMP B3	B3	20,735 sf	864 cf	2,771 cf
Permeable Pavement B4	B4	6,229 sf	260 cf	3,720 cf
Infiltration BMP D1	D1	17,424 sf	726 cf	3,729 cf

Table 4.1.2: Water Quality Flow Required

Stormwater BMP	Water Quality Volume Required	Water Quality Volume Provided
WQS-101 (B3)	0.26 cfs	3.00 cfs
WQS-201 (E1)	0.04 cfs	0.84 cfs
WQS-301 (D1)	0.07 cfs	0.84 cfs
WQS-302 (D1)	0.15 cfs	0.84 cfs

No water quality volume treatment is provided in sub-drainage areas B2, C and E2 because they do not increase impervious area and are considered redevelopment areas.

No water quality treatment is provided in sub-drainage areas D1 and F because these areas are considered redevelopment.

The measures described above have been sized to meet the 80% removal rate as required by the Standard 4: Water Quality of the MassDEP Checklist for Stormwater Report. TSS removal treatment train calculations, Water Quality Flow calculations and Proprietary Separator data sheets are provided in Appendix D.

4.2 Additional Stormwater Quality Features

In addition to the water quality improvements described above, the following water-quality control measures will be provided:

- Operations & Maintenance Plan: Comprehensive Operations and Maintenance programs have been developed for the proposed site. These programs include regular pavement sweeping, catch basin cleaning, and enclosure and maintenance of all dumpsters and material storage areas. Refer to Appendix H

5.0 GROUNDWATER RECHARGE

5.1 Design Criteria

Groundwater recharge volumes have also been addressed for the site. Required volumes were calculated for each watershed based on the MA Stormwater Handbook guidelines.

5.2 Retention and Infiltration Sizing

The underground infiltration systems, and porous pavement have been designed in accordance with Volume 3 Chapter 1 of the Massachusetts Stormwater Manual. These systems meet and surpass required recharge volume as seen in tables 5.3.1, 5.3.2, 5.3.3, and the calculations below. Additionally these practices have been designed to provide the required infiltration volume within the required 72 hour drawdown time (see Table 5.3.4).

All calculations assume infiltration rates based on infiltration testing conducted on the site. These test results are presented in Table 1.6.1 in this report and in the Geotechnical Report.

Two infiltration tests were conducted within the footprint of Infiltration BMP D1: IT-208 and IT-207. IT-207 was conducted in a layer of fill material to be excavated during construction. The infiltration rates from IT-208 are used in the design of this BMP because this test was conducted closer to the elevation of the bottom of the BMP and in the same soil layer.

See table 5.3.3 for assumed infiltration rates utilized. See Appendix J for the geotechnical report with the infiltration rates.

Total Required Recharge Volume (Rv) for East Campus

Rv = Required Recharge Volume

F = Target Depth Factor associated with Hydrologic Soil Group (HSG)

A_{Imp} = Total Impervious cover associated with HSG

$$Rv = \sum(F) \times (A_{Imp})$$

Capture Area Adjustment

Not all impervious area is able to be routed to the proposed stormwater infiltration practices. The proposed infiltration practices are oversized by a Capture Area Adjustment Factor in order to provide sufficient infiltration for impervious areas not routed to them. See below for adjustment factor calculation.

Capture Area Adjustment Factor = Total Impervious Area / Impervious Area Draining to Infiltration BMPs

Table 5.3.1: Capture Area Adjustment

BMP	Impervious Area Draining to Infiltration BMPs		Total Impervious Area*	Catchment Area Adjustment Factor
Permeable Pavement A1	0.225 ac	2.125	2.957	1.39
Permeable Pavement B1	0.881 ac			
Infiltration BMP B3	0.476 ac			
Permeable Pavement B4	0.143 ac			
Infiltration BMP D1	0.400 ac			

*The Upper Lot / Front Yard is excluded because it is a redevelopment area and no infiltration BMPs are proposed.

Table 5.3.2: Required Recharge Volumes

BMP	A _{Imp} (HSG A) F = 0.6"	A _{Imp} (HSG D) F = 0.1"	Required Recharge Volume (unadjusted)	Required Recharge Volume (adjusted)
Permeable Pavement A1	0 sf	9,801 sf	82 cf	114 cf
Permeable Pavement B1	21,562 sf	16,814 sf	1,218 cf	1,696 cf
Infiltration BMP B3	20,745 sf	0 sf	1,037 cf	1,443 cf
Permeable Pavement B4	6,229 sf	0 sf	311 cf	434 cf
Infiltration BMP D1	17,424 sf	0 sf	871 cf	1,213 cf
Non-Captured Areas A1, B2, C, E2*	24,306 sf	10,280 sf	1,301 cf	N/A
Total				4899 cf

*The Upper Lot / Front Yard area (sub-drainage areas F and D2) is excluded because it is a redevelopment area and no infiltration BMPs are proposed.

Table 5.3.3: Provided Recharge Volumes

BMP	Bottom Area	Depth of storage below outlet	Provided Recharge Volume	Required Recharge Volume (adjusted)
Permeable Pavement A1	9,800 sf	0.600 ft	5,880 cf	114 cf
Permeable Pavement B1	36,800 sf	0.600 ft	22,080 cf	1,696 cf
Infiltration BMP B3	2,444 sf	1.136 ft	2,771 cf	1,443 cf
Permeable Pavement B4	6,200 sf	0.600 ft	3,720 cf	434 cf
Infiltration BMP D1	2,533 sf	1.472 ft	3,729 cf	1,213 cf
Total			38,180 cf	4899 cf

Total Required Recharge Volume (Rv) for the Project

Rv = 4,899 cubic feet

Total Provided Recharge Volume (Rv) for the Project

Rv = 38,180 cubic feet

Table 5.3.3: Drawdown Rates

BMP	Required Recharge Volume (adjusted)	Bottom Area (See Table 4.3.1)	K - Saturated Hydraulic Conductivity	Drawdown Time
A1	114 cf	9,800 sf	0.940 in/hr	<1 hr
B1	1,696 cf	36,800 sf	0.588 in/hr	<1 hr
B3	1,443 cf	2,444 sf	0.391 in/hr	<1 hr
B4	434 cf	6,200 sf	0.800 in/hr	<1 hr
D1	1,213 cf	2,533 sf	0.800 in/hr	<1 hr

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)}$$

5.3 Groundwater Mounding Analysis

Groundwater Mounding Analysis has been completed for each infiltration practice utilizing the Hantush (1967) method for the 10-year, 24 hour storm event. This analysis shows that the top of the groundwater mound is below the bottom of each infiltration practice.

See Appendix G for calculations.

6.0 STORM DRAINAGE COLLECTION SYSTEM DESIGN

6.1 Design Criteria

The proposed subsurface storm drainage collection system is designed to convey the 25-year design storm event to the discharge locations while maintaining an HGL a minimum of 1 foot below the proposed grade.

6.2 Design Methodology

The storm drainage system was analyzed using the Rational Method for estimating runoff for a 25-year design storm event. The site was divided into subareas, each contributing runoff to an individual catch basin, inlet or roof drain. A value for area, time of concentration, and runoff coefficient was calculated for each contributing subarea. See Appendix F.

Values of time of concentration were chosen based on land cover and flow path slope from the hydraulically most distant point in the subarea to the appropriate inlet. A minimum 5 minute inlet time was assumed for each subarea.

The average runoff coefficient, is the weighted average of the land uses within the drainage area. The runoff coefficient is an empirical coefficient representing the ratio of runoff to the rate of rainfall. The following runoff coefficients were used when calculating the average runoff coefficient for each drainage area.

<u>CONDITION</u>	<u>C</u>
Grass/Landscaping	0.30
Paved/Impervious	0.90

Rainfall intensities were taken from the intensity-duration-frequency curve for Massachusetts as presented in National Weather Service (NOAA) Precipitation Frequency Data Server (PFDS). Storm drainage pipes were then sized based on calculated flows using Manning's Equation and were verified by solving for the hydraulic grade line. Starting hydraulic grade lines for the pipe networks were set to the calculated maximum water elevations in the respective subsurface infiltration systems for the 25-year-design storm event creating a conservative tail water condition.

6.3 Storm Drainage Collection Summary

The runoff from the development will be collected using a conventional roof drains, catch basin, and manholes.

See Appendix E for full calculations.

7.0 OUTLET PROTECTION

7.1 Design Criteria and Methodology

The outlet protection for pipe outlets are designed based on the pipe diameter, tailwater condition, and 25-year design storm peak flow and velocity. A preformed scour hole with a level spreader is designed for the pipe outlet from the East Campus subsurface infiltration system that discharges towards the wetland area on the east side of the site. The preformed scour hole is an excavated hole or depression which is lined with rock riprap of a stable size to prevent scouring.

The pipe flows and velocity was obtained from the storm drainage collection system design described in Section 6 of this report. Sizing of the preformed scour hole uses the methodology found in the Storm Drainage Systems, Outlet Protection section of the ConnDOT Drainage Manual, which is based on the Federal Highway Administration Report No. FHWA-RD-75-508, "Culvert Outlet Protection Design: Computer Program Documentation."

See Appendix F for full calculation.

8.0 CONSTRUCTION PERIOD POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL PLAN

8.1 Introduction

The following sections describe the potential pollutant sources, controls to reduce the pollutants, construction sequence, and construction and earth movement schedules related to the project's soil disturbance. The Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan was developed to comply with standards set in the Environmental Protection Agency's (EPA) 2022 Construction General Permit (CGP). The Erosion and Sedimentation Control Plans (CE series) can be found in the construction drawings, submits separately.

8.2 Construction Period Pollution Prevention Controls

Best Management Practices (BMPs) will be utilized as Construction Period Pollution Prevention Controls to reduce potential pollutants and prevent any off-site discharge. The objectives of the BMPs for construction activity are to minimize the disturbed areas, stabilize any disturbed areas, control the site perimeter and retain sediment. The contractor will minimize the area disturbed by construction activities to reduce the

potential for soil erosion and stormwater pollution problems. In addition, good housekeeping measures will be followed for the day-to-day operation of the construction site under the control of the contractor to minimize the impact of construction. This section describes the control practices that will be in place during construction activities.

8.2.1 Natural Buffers

All work is outside the 100 foot wetland buffer zone. In order to minimize disturbed areas, work will be completed within well-defined work limits. These work limits are shown on the construction plans. The Contractor will be responsible to make sure that all of their workers and any subcontractors know the proper work limits and do not extend their work into the undisturbed areas. The protective controls are described in more detail in the following sections.

8.2.2 Perimeter Controls

Perimeter controls for this project will consist of the installation of a perimeter silt fence and compost filter tube. The silt fence will prevent sediment laden storm runoff from leaving the construction site or disturbed area. Perimeter controls will be installed before earth disturbing activities, pavement, and concrete slab removal.

8.2.3 Sediment Track-out Control

Stabilized construction entrance and stabilized construction pads shall be established on site within the drive aisles and throughout the construction area. The construction entrances are constructed in accordance with local regulatory criteria. The entrances are located within the perimeter silt fence.

8.2.4 Stockpiled Soil or Sediment

Soils to be removed will be loaded directly into dump trucks and removed from the site, or soil stockpile areas will be established on-site. The stockpile areas will be surrounded by poly wrapped haybale berms and compost filter tube and silt fencing, as identified on the referenced drawings and stabilized if unused for more than 14-days (e.g., hydroseed with an appropriate annual or winter rye seed mix and tackifier). The initial stockpile area will be established at the outset of the construction activities on site. As construction progresses, stockpile areas may be relocated as needed but must maintain the erosion and sediment control protection described above.

8.2.5 Dust Control

Dust control will be accomplished by use of vegetative cover, mulch, spray-on adhesives, tillage, water sprinkling, dust barriers, or stone. Dust control will be applied on an as-needed basis, specifically when dry or windy weather increases site-wide dust kick-up.

8.2.6 Minimize Disturbance of Steep Slopes

There are existing or proposed steep slopes at the site. In these areas the contractor will install soil erosion control blankets and provide soil roughening. soil erosion control blankets will be installed upon completion of grading.

8.2.7 Soil Compaction

Areas of sensitive vegetation will be accessible only to lightly loaded landscape equipment or hand-operated equipment and tools. Upon completion of grading, construction equipment and activities are to be avoided within areas designed for infiltration.

8.2.8 Storm Drain Inlet Protection

At-grade inlets and curb inlets will be provided with inlet protection throughout the construction activities until final stabilization is achieved. This inlet protection will be installed at the onset of the construction activities. The inlet protection shall consist of a silt filter bag which is placed under the grate. Straw bales or filter tubes may be placed around catch basins after the initial grading to filter and divert sediment until final paving is complete.

8.2.9 Dewatering

Based on the proposed construction activities, the depths of proposed excavations, and the known ground water table elevation, dewatering practices are not anticipated to be required.

8.2.10 Site Stabilization

During construction, any area of exposed soils that will be left idle for more than 30 days shall be stabilized with a layer of mulch hay or other means. For areas that are not meant to remain actively utilized, stabilization procedures will occur on the following schedule in compliance with Section 2.2.14 of the CGP:

- Initiate the installation of stabilization measures immediately in any areas

of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days.

- Complete the installation of stabilization measures as soon as practicable, but no later than 14 calendar days after stabilization has been initiated.

All exposed soil finish grade surfaces shall be immediately landscaped and stabilized, loamed, seeded, and mulched with a layer of mulch hay. All disturbed areas must be graded, loamed, and seeded prior to November 1st of each year. Outside of the growing season, beyond November 15th of any construction year, exposed soil finish grade surfaces shall be stabilized with a layer of mulch hay, straw, tackifier or biodegradable erosion control blanket until climate conditions allow for seeding.

All temporary erosion and sedimentation controls will be removed after final site stabilization.

8.3 Pollution Prevention Standards

Potential sources of pollution during construction are:

- sediment from exposed soils and dewatering
- construction material debris
- human waste
- concrete washout
- diesel, gasoline, and hydraulic and engine oil

All sources of soil erosion pollution or construction pollution to stormwater bodies will be mitigated with the use of silt fence, compost filter tubes, and construction fencing around the construction area. To prevent prohibited non-stormwater discharge the good housekeeping practices must be followed.

8.3.1 Spill Prevention and Response

The Contractor will be responsible for preventing spills in accordance with the project specifications and applicable federal, state and local regulations. The Contractor will identify a properly trained site employee, involved with the day-to-day site operations to be the spill prevention and cleanup coordinator. The name(s) of the responsible spill personnel will be posted on-site.

Each employee will be instructed that all spills are to be reported to the spill prevention and cleanup coordinator. The supervisor will assess the incident and initiate proper containment and response procedures immediately upon

notification. Workers should avoid direct contact with spilled materials during the containment procedures.

Primary notification of a spill should be made to the local Fire Department and Police Departments. Secondary notification will be to the certified cleanup contractor if deemed necessary by fire and police personnel. The third level of notification (within 1 hour) is to the DEP or municipality's Licensed Site Professional (LSP). The specific cleanup contractor to be used will be identified by the Contractor prior to commencement of construction activities.

8.3.2 Designated Washout Areas

Concrete waste will be placed in designated dumpster (or comparable structure) and concrete washout will occur in designated containment areas outside of wetland resource areas and buffer zones.

8.3.3 Proper Equipment, Vehicle Fueling, and Maintenance Practices

On-site vehicles will be monitored for leaks and receive regular preventative maintenance off-site to reduce the risk of leakage. To ensure that leaks on stored equipment do not contaminate the site, oil-absorbing mats will be placed under oil-containing equipment during storage. Refueling will occur outside wetland resource areas and buffers. Any petroleum products will be stored in tightly sealed containers that are clearly labeled with spill control pads/socks placed under/around their perimeters.

8.3.4 Equipment and Vehicle Washing

No equipment, vehicles, and machines will be washed on-site.

8.3.5 Spill Control Equipment

Spill control and containment equipment will be kept in the work area. Materials and equipment necessary for spill cleanup will be kept either in the work area or in an otherwise accessible on-site location. Equipment and materials will include, but not be limited to, absorbent booms and mats, brooms, dust pans, mops, rags, gloves, goggles, sand, plastic and metal containers specifically for this purpose. It is the responsibility of the contractor to ensure the inventory will be readily accessible and maintained.

8.3.6 Spill Containment and Clean-Up Measures

Spills will be contained with granular sorbent material, sand, sorbent pads, booms or all of the above to prevent spreading. Certified cleanup contractors should complete spill cleanup. The material manufacturer's recommended methods for spill cleanup will be clearly posted and on-site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

8.3.7 Hazardous Materials Spill Report

The contractor will report and record any spill. The spill report will present a description of the release, including the quantity and type of material, date of the spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

This document does not relieve the Contractor of the Federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302 and the State requirements specified under the Massachusetts Contingency Plan (M.C.P) relating to spills or other releases of oils or hazardous substances. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a twenty-four (24) hour period, the Contractor is required to comply with the response requirements of the above mentioned regulations. Spills of oil or hazardous material in excess of the reportable quantity will be reported to the National Response Center (NRC).

8.4 Operation and Maintenance of Erosion Control

The erosion control measures will be installed as detailed on the drawings (CE series). If there is a failure to the controls the contractor, under the supervision of the engineer, will be required to stop work until the failure is repaired. Periodically throughout the work, whenever the engineer deems it necessary, the sediment that has been deposited against the controls will be removed to ensure that the controls are working properly.

8.5 Inspection Schedule

During construction, the erosion and sedimentation controls will be inspected as detailed on the drawings and in the SWPPP. Once the Contractor is selected, an on-site inspector will be selected to work closely to make sure that erosion and sedimentation controls are in place and working properly.

The Owner must schedule the following site inspections with the Conservation Commission:

1. Initial Site Inspection: prior to approval of any Plan.
2. Project Progress Inspections: observe and document project progress at certain milestones.
 - a) Erosion and sediment control measures are in place and stabilized;
 - b) Site Clearing has been substantially completed;
 - c) Rough Grading has been substantially completed;
 - d) Final Grading has been substantially completed;
 - e) Close of the Construction Season;
 - f) Final Landscaping (permanent stabilization)
 - g) Project final completion.
3. Owner Inspections: weekly inspections and prior to and following any storm events with over 0.25" of precipitation.
4. Bury Inspection: prior to backfilling of drainage piping or stormwater conveyance structures.
5. Final Inspection: after construction is completed.

9.0 CONCLUSION

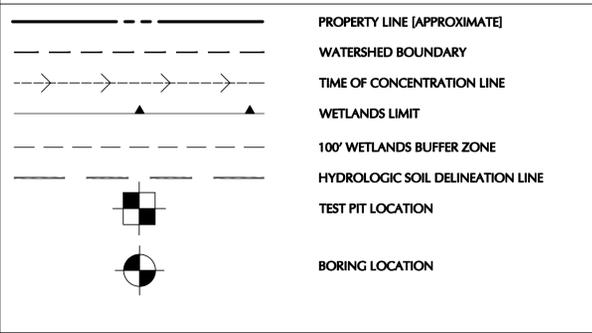
The proposed stormwater management system has been designed in accordance with the Massachusetts Stormwater Management Handbook and the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas. The system incorporates stormwater quality measures and maintains or decreases the existing rate of runoff for all storm events analyzed.

We believe based on the findings of this report that the proposed stormwater system, as designed, will effectively manage quality and quantity of stormwater runoff for the proposed redevelopment.

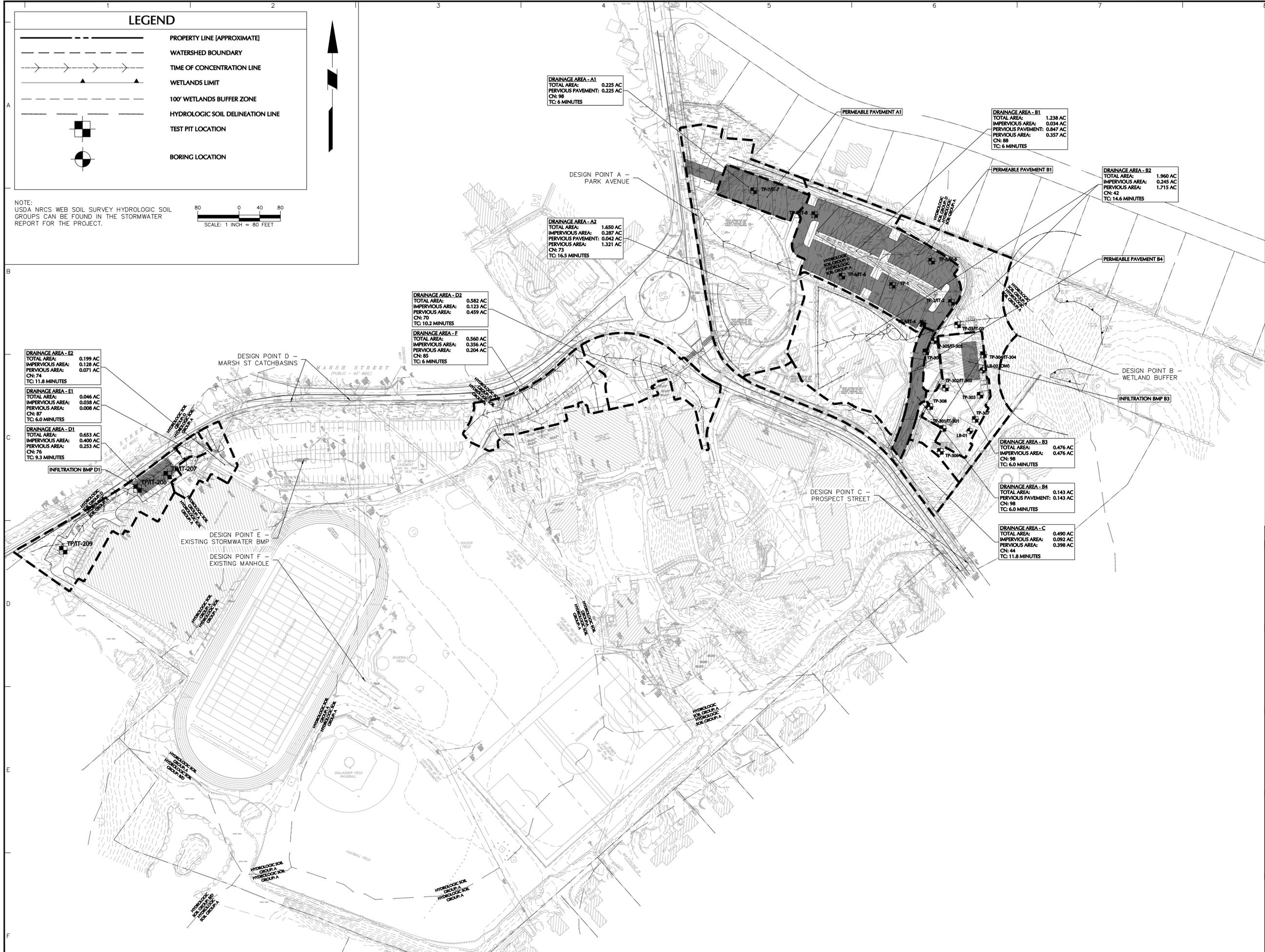
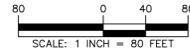
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LEGEND



NOTE: USDA NRCS WEB SOIL SURVEY HYDROLOGIC SOIL GROUPS CAN BE FOUND IN THE STORMWATER REPORT FOR THE PROJECT.



DRAINAGE AREA - A1
 TOTAL AREA: 0.225 AC
 PERVIOUS PAVEMENT: 0.225 AC
 CN: 98
 TC: 6 MINUTES

DRAINAGE AREA - B1
 TOTAL AREA: 1.238 AC
 IMPERVIOUS AREA: 0.034 AC
 PERVIOUS PAVEMENT: 0.847 AC
 PERVIOUS AREA: 0.357 AC
 CN: 88
 TC: 6 MINUTES

DRAINAGE AREA - B2
 TOTAL AREA: 1.960 AC
 IMPERVIOUS AREA: 0.245 AC
 PERVIOUS AREA: 1.715 AC
 CN: 42
 TC: 14.6 MINUTES

DRAINAGE AREA - A2
 TOTAL AREA: 1.650 AC
 IMPERVIOUS AREA: 0.287 AC
 PERVIOUS PAVEMENT: 0.042 AC
 PERVIOUS AREA: 1.321 AC
 CN: 73
 TC: 16.5 MINUTES

DRAINAGE AREA - D2
 TOTAL AREA: 0.582 AC
 IMPERVIOUS AREA: 0.123 AC
 PERVIOUS AREA: 0.459 AC
 CN: 70
 TC: 10.2 MINUTES

DRAINAGE AREA - E
 TOTAL AREA: 0.560 AC
 IMPERVIOUS AREA: 0.356 AC
 PERVIOUS AREA: 0.204 AC
 CN: 85
 TC: 6 MINUTES

DRAINAGE AREA - E2
 TOTAL AREA: 0.199 AC
 IMPERVIOUS AREA: 0.128 AC
 PERVIOUS AREA: 0.071 AC
 CN: 74
 TC: 11.8 MINUTES

DRAINAGE AREA - E1
 TOTAL AREA: 0.046 AC
 IMPERVIOUS AREA: 0.038 AC
 PERVIOUS AREA: 0.008 AC
 CN: 87
 TC: 6.0 MINUTES

DRAINAGE AREA - D1
 TOTAL AREA: 0.653 AC
 IMPERVIOUS AREA: 0.400 AC
 PERVIOUS AREA: 0.253 AC
 CN: 76
 TC: 9.3 MINUTES

DRAINAGE AREA - B3
 TOTAL AREA: 0.476 AC
 IMPERVIOUS AREA: 0.476 AC
 CN: 98
 TC: 6.0 MINUTES

DRAINAGE AREA - B4
 TOTAL AREA: 0.143 AC
 PERVIOUS PAVEMENT: 0.143 AC
 CN: 98
 TC: 6.0 MINUTES

DRAINAGE AREA - C
 TOTAL AREA: 0.490 AC
 IMPERVIOUS AREA: 0.092 AC
 PERVIOUS AREA: 0.398 AC
 CN: 44
 TC: 11.8 MINUTES

Date	Description	No.
Revisions		

LANGAN
 Langan Engineering and Environmental Services, Inc.
 100 Cambridge Street, Suite 1310
 Boston, MA
 T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
Belmont Hill School
 BELMONT
 MIDDLESEX COUNTY MASSACHUSETTS

Drawing Title
PROPOSED DRAINAGE AREA PLAN

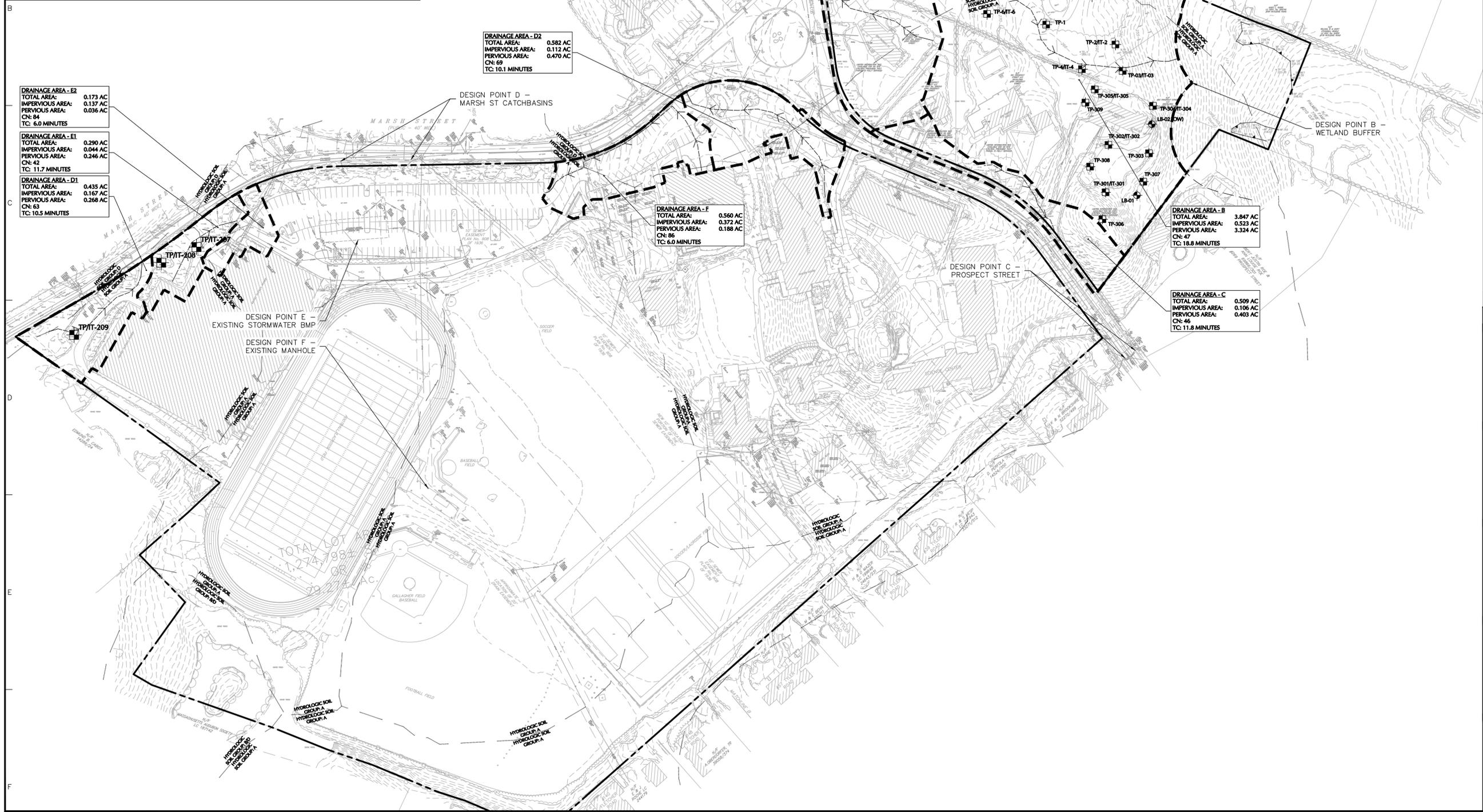
Project No. 151021201	Drawing No. PR-WS
Date 06/03/2022	
Drawn By K. Hebard	
Checked By H. Holmes	

LEGEND

	PROPERTY LINE (APPROXIMATE)
	WATERSHED BOUNDARY
	TIME OF CONCENTRATION LINE
	WETLANDS LIMIT
	100' WETLANDS BUFFER ZONE
	HYDROLOGIC SOIL DELINEATION LINE
	TEST PIT LOCATION
	BORING LOCATION

NOTE:
USDA NRCS WEB SOIL SURVEY HYDROLOGIC SOIL GROUPS CAN BE FOUND IN THE STORMWATER REPORT FOR THE PROJECT.

SCALE: 1 INCH = 80 FEET



DRAINAGE AREA - E2
TOTAL AREA: 0.173 AC
IMPERVIOUS AREA: 0.137 AC
PERVIOUS AREA: 0.036 AC
CN: 84
TC: 6.0 MINUTES

DRAINAGE AREA - E1
TOTAL AREA: 0.290 AC
IMPERVIOUS AREA: 0.044 AC
PERVIOUS AREA: 0.246 AC
CN: 42
TC: 11.7 MINUTES

DRAINAGE AREA - D1
TOTAL AREA: 0.435 AC
IMPERVIOUS AREA: 0.167 AC
PERVIOUS AREA: 0.268 AC
CN: 63
TC: 10.5 MINUTES

DRAINAGE AREA - D2
TOTAL AREA: 0.582 AC
IMPERVIOUS AREA: 0.312 AC
PERVIOUS AREA: 0.470 AC
CN: 69
TC: 10.1 MINUTES

DRAINAGE AREA - F
TOTAL AREA: 0.560 AC
IMPERVIOUS AREA: 0.372 AC
PERVIOUS AREA: 0.188 AC
CN: 86
TC: 6.0 MINUTES

DRAINAGE AREA - B
TOTAL AREA: 3.847 AC
IMPERVIOUS AREA: 0.523 AC
PERVIOUS AREA: 3.324 AC
CN: 47
TC: 18.8 MINUTES

DRAINAGE AREA - C
TOTAL AREA: 0.509 AC
IMPERVIOUS AREA: 0.106 AC
PERVIOUS AREA: 0.403 AC
CN: 46
TC: 11.8 MINUTES

DRAINAGE AREA - A
TOTAL AREA: 1.826 AC
IMPERVIOUS AREA: 0.200 AC
PERVIOUS AREA: 1.626 AC
CN: 72
TC: 17.6 MINUTES

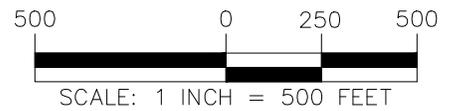
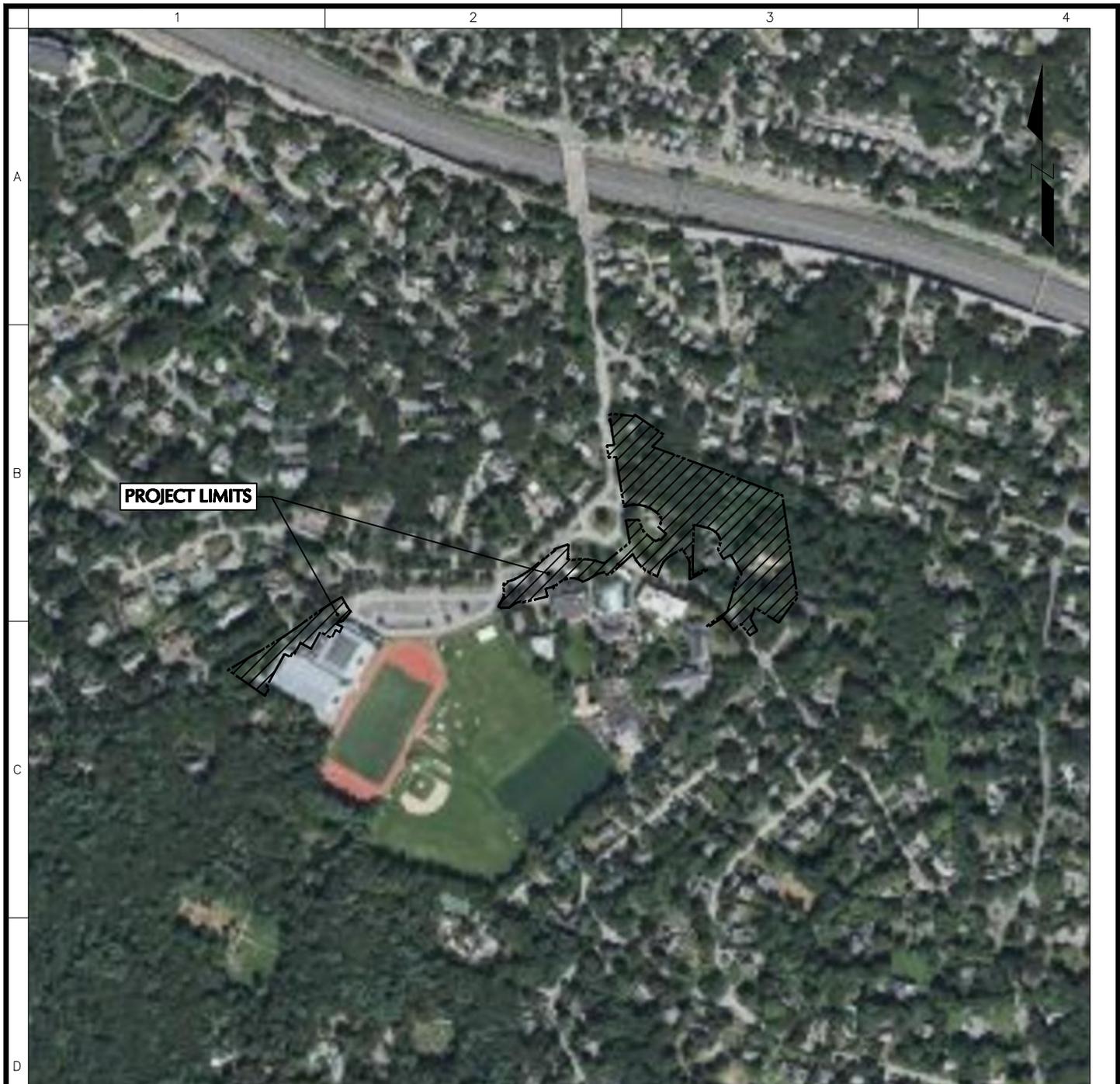
Date	Description	No.
Revisions		

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100 Cambridge Street, Suite 1310
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T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
Belmont Hill School
BELMONT
MIDDLESEX COUNTY MASSACHUSETTS

**EXISTING
DRAINAGE AREA
PLAN**

Project No. 151021201	EX-WS
Date 06/03/2022	
Drawn By K. Hebard	
Checked By H. Holmes	

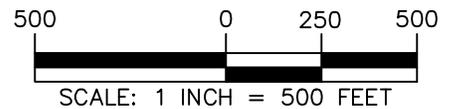


 Langan Engineering and Environmental Services, Inc. www.langan.com	Project	Drawing Title	Project No.	Figure
	BELMONT HILL SCHOOL BELMONT MIDDLESEX COUNTY MASSACHUSETTS	Aerial Locus Map	151021201 Date Drawn By K. Hebard Checked By H. Holmes	



NOTES:

1. BOUNDARY OBTAINED FROM SURVEY TITLED "EXISTING CONDITIONS PLAN OF PROPERTY" BY MCCLURE DATED DECEMBER 10, 2020.
2. BASEMAP OBTAINED FROM USGS HISTORICAL TOPOGRAPHIC MAPS, EAST BROOKFIELD, MA AND LEICESTER, MA PUBLISHED IN 1969.



 Langan Engineering and Environmental Services, Inc. www.langan.com	Project	Drawing Title	Project No.	Figure
	BELMONT HILL SCHOOL BELMONT MIDDLESEX COUNTY MASSACHUSETTS	USGS Locus Map	151021201 Date Drawn By K. Hebard Checked By H. Holmes	

APPENDIX A

Checklists for Stormwater Report



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Management and Erosion Control Report must be submitted with the building permit application for a project that is covered by the Town of Belmont Stormwater Management and Erosion Control Bylaw. The following checklist is NOT a substitute for the Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management and Erosion Control documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Report must include:

- The Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Report shall also document compliance with the Stormwater Management and Erosion Control Bylaw recognizing the bylaw contains provisions that could be more strict or broader in scope than the Stormwater Management Standards.

To ensure that the Report is complete, applicants are required to fill in the Report Checklist by checking the box to indicate that the specified information has been included in the Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Management and Erosion Control Checklist and Certification must be

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue a permit that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

B. Report Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Report. The checklist is also intended to provide the reviewing authority with a summary of the components necessary for a comprehensive Report that addresses the ten Stormwater Standards.

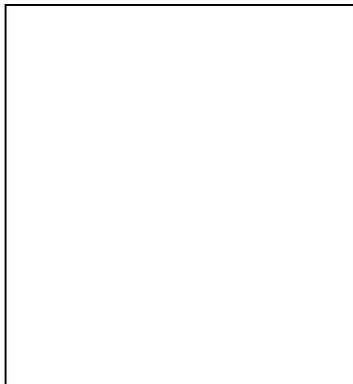
Note: Because stormwater requirements vary from project to project, it is possible that a complete Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Management and Erosion Control Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan, the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Frank Holmes

6/3/2022

Signature and Date



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

60-325 - Stormwater Management and Erosion Control Bylaw (excerpt)

F Stormwater Management and Erosion Control

F (1) Regulated Activities

A Stormwater Management and Erosion Control Permit shall be required prior to undertaking any land disturbance that involves:

- (a) An alteration that will result in land disturbances of 2,500 square feet of total area or more, or that is part of a common plan for development that will disturb 2,500 square feet or more;
- (b) An alteration that will increase the amount of a lot's impervious surface area to more than 25% of the lot's total area; or
- (c) Storage or permanent placement of more than 100 cubic yards of excavated material, fill, snow or ice.

F (3) General Requirements

(a) An Operation and Maintenance Plan shall be submitted to the OCD for approval prior to the issuance of a Stormwater Management and Erosion Control Permit. The Operation and Maintenance Plan shall be designed to ensure compliance with the Stormwater Management and Erosion Control Permit, this Bylaw, and the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, in all seasons and throughout the life of the system.

(b) As-built drawings showing all stormwater management systems shall be submitted to the OCD at the completion of a project.

(c) The OCD may require the applicant to contribute to the cost of design, construction, and maintenance of a public or shared stormwater facility in lieu of an onsite stormwater facility where the OCD determines that there are not sufficient site conditions for onsite Best Management Practices that will satisfy the design criteria set forth in Section 34.6.4.1 of this Bylaw and the performance standards set forth in the regulations promulgated under this Bylaw. Funds so contributed may be used to design, construct, and maintain stormwater projects that will improve the quality and quantity of surface waters in Belmont by treating and recharging stormwater from existing impervious surfaces that is now discharged to said waters with inadequate treatment or recharge. The amount of any required contribution to the fund shall be determined by the OCD pursuant to standards established in the Regulations adopted pursuant to this Bylaw.

F (4) Design Criteria (The Report shall consider all of the design criteria below)

All Development shall satisfy the following design criteria:

- (a) Compliance with all applicable provisions of the Stormwater Management Standards, regardless of the proximity of the development to resource areas or their buffer zones, as defined by the *Wetlands Protection Act, M.G.L. c. 131, § 40* and its implementing regulations.
- (b) Erosion and sediment controls must be implemented to prevent adverse impacts during disturbance and construction activities.
- (c) There shall be no change to the existing conditions of abutting properties from any increase in volume of stormwater runoff or from erosion, silting, flooding, sedimentation or impacts to wetlands, ground water levels or wells.
- (d) When any proposed discharge may have an impact upon streams, wetlands and/or storm sewers, the OCD may require minimization or elimination of this impact based on site conditions and existing stormwater system capacity.



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): Porous Pavement

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.
- Any potential change to the existing conditions of abutting properties from any increase in volume of stormwater runoff have been identified in the Report
- The Report provides calculations demonstrating that the post-development discharge volume is equal to or less than the pre-development discharge volume from the 2-year and the 10-year 24-hour storms.
- The Report provides a quantitative impact of discharge volumes from the 100-year 24-hour storm. If this evaluation shows that increased off-site flooding result from the discharge volumes from the 100-year 24-hour storms, BMPs also are described in the Report that the applicant will implement and maintained to attenuate these discharges.
- Any potential change to the existing conditions of abutting properties from erosion, silting, flooding, or sedimentation have been identified in the Report.
- The Report describes the practices and controls that the Applicant will implement and maintain to prevent adverse impacts from erosion, silting, flooding, or sedimentation.
- Any potential impacts to wetlands have been identified in the Report.
- The Report describes the practices and controls that the Applicant will implement and maintain to prevent adverse impacts to wetlands.

Additional Requirements for Projects other than One and Two Family Developments:

- Any potential impacts to ground water levels or wells have been identified in the Report, including quantitative projections of changes in the seasonal high water table and quantitative projections of storm-related short-term mounding calculations associated with infiltration BMPs for a 24-hour 10 year design storm.
- The Report describes the practices and controls that the Applicant will implement and maintain (if required) to prevent adverse impacts to ground water levels or wells for a 24-hour 10 year design storm.

Requirements Specific to Section F (4)(d)

- Is stormwater from the pre-development site discharged directly to (check all that apply):



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

- A surface water body (specify the water body)
- The Belmont MS4 (storm sewers)
- Another MS4 (specify the MS4)
- Other (specify) **Overland flow to woodland area north of Prospect St. This area includes a wetland resource area.**
- Will stormwater from the post-development site be discharges directly to (check all that apply):
 - A surface water body (specify the water body)
 - The Belmont MS4 (storm sewers)
 - Another MS4 (specify the MS4)
 - Other (specify) **Overland flow to woodland area north of Prospect St. This area includes a wetland resource area.**
- Any potential impacts upon streams, wetlands and/or storm sewers have been identified in the Report. (Explain in Report narrative)
 - These will be prevented with mitigating measures that the Applicant will implement and maintain (explain in Report narrative)
 - These will be prevented without mitigating measures (explain in Report narrative)
- The Report describes the practices and controls that the Applicant will implement and maintain to prevent any adverse impacts to streams, wetlands and/or storm sewers.

Additional Requirements for Projects other than One and Two Family Developments:

- If the discharge is to an MS4, a certification that the discharge meets Massachusetts Surface Water Quality Standards and any applicable approved Total Maximum Daily Load (TMDL) waste load allocation is included in the Report.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
- Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.
- ¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.
- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
- Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
- is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

- involves runoff from land uses with higher potential pollutant loads.
- The Required Water Quality Volume is reduced through use of the LID site Design Credits.
- Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.
- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.

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

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
 - Limited Project



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

- Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- Bike Path and/or Foot Path
- Redevelopment Project
- Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

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

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- Adverse impacts due to erosion, sedimentation, or both during disturbance and construction activities are prevented:
- With erosion and sediment controls that the Applicant will implemented and maintain (explain in Report narrative)
 - Without erosion and sediment controls (explain in Report narrative)



TOWN OF BELMONT

Checklist for Stormwater Management and Erosion Control Report

- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.
- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

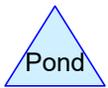
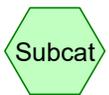
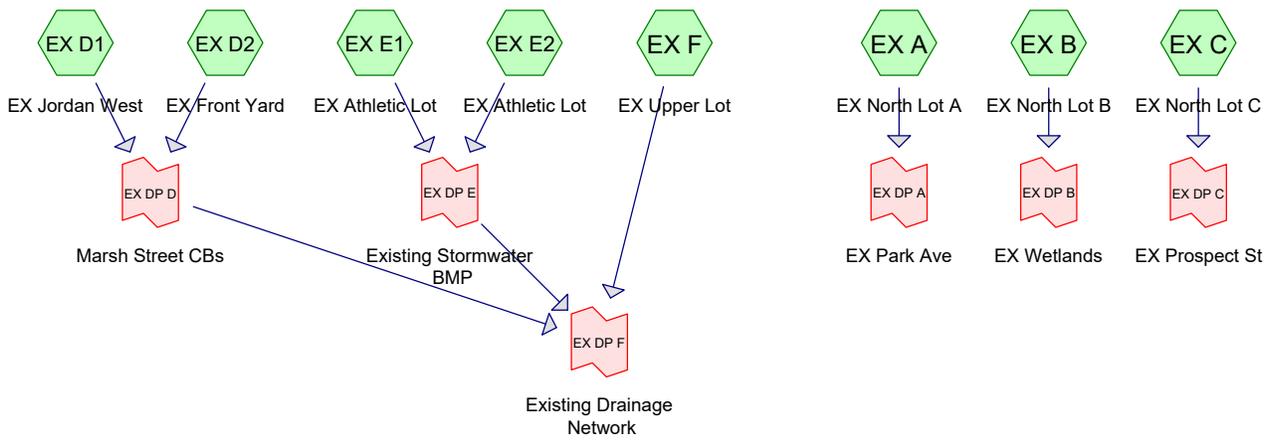
- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

APPENDIX B

Existing Stormwater Discharge Calculations



Routing Diagram for Belmont Hill School - Existing Conditions
 Prepared by Langan Engineering and Environmental Services, Printed 6/3/2022
 HydroCAD® 10.10-6a s/n 11011 © 2020 HydroCAD Software Solutions LLC

Belmont Hill School - Existing ConditionsPrepared by Langan Engineering and Environmental Services
HydroCAD® 10.10-6a s/n 11011 © 2020 HydroCAD Software Solutions LLCPrinted 6/3/2022
Page 2**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
1.661	98	Impervious (EX A, EX B, EX C, EX D1, EX D2, EX E1, EX E2, EX F)
4.317	32	Woods/grass comb., Good, HSG A (EX A, EX B, EX C, EX D1, EX D2, EX E1, EX E2, EX F)
2.244	79	Woods/grass comb., Good, HSG D (EX A, EX B, EX D1, EX D2, EX F)
8.222	58	TOTAL AREA

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Belmont Hill School - Existing
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX A: EX North Lot A

Runoff = 1.31 cfs @ 12.27 hrs, Volume= 0.143 af, Depth= 0.94"
 Routed to Link EX DP A : EX Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.200	98	Impervious
0.366	32	Woods/grass comb., Good, HSG A
1.260	79	Woods/grass comb., Good, HSG D
1.826	72	Weighted Average
1.626		89.05% Pervious Area
0.200		10.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	85	0.0117	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.3	70	0.0360	3.85		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	120	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.6	275	Total			

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX A: EX North Lot A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.94	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.94	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.94	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.94	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.94	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.94	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.94	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.94	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.94	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.94	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.94	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.94	0.00
12.00	1.61	0.15	0.35	63.00	3.22	0.94	0.00
13.00	2.41	0.49	0.30	64.00	3.22	0.94	0.00
14.00	2.61	0.59	0.17	65.00	3.22	0.94	0.00
15.00	2.75	0.66	0.13	66.00	3.22	0.94	0.00
16.00	2.85	0.72	0.10	67.00	3.22	0.94	0.00
17.00	2.93	0.77	0.08	68.00	3.22	0.94	0.00
18.00	2.99	0.80	0.06	69.00	3.22	0.94	0.00
19.00	3.04	0.83	0.05	70.00	3.22	0.94	0.00
20.00	3.08	0.86	0.05	71.00	3.22	0.94	0.00
21.00	3.12	0.88	0.04	72.00	3.22	0.94	0.00
22.00	3.16	0.90	0.04				
23.00	3.19	0.92	0.04				
24.00	3.22	0.94	0.03				
25.00	3.22	0.94	0.00				
26.00	3.22	0.94	0.00				
27.00	3.22	0.94	0.00				
28.00	3.22	0.94	0.00				
29.00	3.22	0.94	0.00				
30.00	3.22	0.94	0.00				
31.00	3.22	0.94	0.00				
32.00	3.22	0.94	0.00				
33.00	3.22	0.94	0.00				
34.00	3.22	0.94	0.00				
35.00	3.22	0.94	0.00				
36.00	3.22	0.94	0.00				
37.00	3.22	0.94	0.00				
38.00	3.22	0.94	0.00				
39.00	3.22	0.94	0.00				
40.00	3.22	0.94	0.00				
41.00	3.22	0.94	0.00				
42.00	3.22	0.94	0.00				
43.00	3.22	0.94	0.00				
44.00	3.22	0.94	0.00				
45.00	3.22	0.94	0.00				
46.00	3.22	0.94	0.00				
47.00	3.22	0.94	0.00				
48.00	3.22	0.94	0.00				
49.00	3.22	0.94	0.00				
50.00	3.22	0.94	0.00				

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX B: EX North Lot B

Runoff = 0.04 cfs @ 14.96 hrs, Volume= 0.024 af, Depth= 0.08"
 Routed to Link EX DP B : EX Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.523	98	Impervious
2.813	32	Woods/grass comb., Good, HSG A
0.511	79	Woods/grass comb., Good, HSG D
3.847	47	Weighted Average
3.324		86.40% Pervious Area
0.523		13.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
4.9	269	0.0335	0.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.7	307	0.1400	1.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
18.8	676	Total			

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX B: EX North Lot B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.08	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.08	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.08	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.08	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.08	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.08	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.08	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.08	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.08	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.08	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.08	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.08	0.00
12.00	1.61	0.00	0.00	63.00	3.22	0.08	0.00
13.00	2.41	0.00	0.02	64.00	3.22	0.08	0.00
14.00	2.61	0.01	0.04	65.00	3.22	0.08	0.00
15.00	2.75	0.02	0.04	66.00	3.22	0.08	0.00
16.00	2.85	0.03	0.03	67.00	3.22	0.08	0.00
17.00	2.93	0.04	0.03	68.00	3.22	0.08	0.00
18.00	2.99	0.04	0.03	69.00	3.22	0.08	0.00
19.00	3.04	0.05	0.02	70.00	3.22	0.08	0.00
20.00	3.08	0.06	0.02	71.00	3.22	0.08	0.00
21.00	3.12	0.06	0.02	72.00	3.22	0.08	0.00
22.00	3.16	0.07	0.02				
23.00	3.19	0.07	0.02				
24.00	3.22	0.08	0.02				
25.00	3.22	0.08	0.00				
26.00	3.22	0.08	0.00				
27.00	3.22	0.08	0.00				
28.00	3.22	0.08	0.00				
29.00	3.22	0.08	0.00				
30.00	3.22	0.08	0.00				
31.00	3.22	0.08	0.00				
32.00	3.22	0.08	0.00				
33.00	3.22	0.08	0.00				
34.00	3.22	0.08	0.00				
35.00	3.22	0.08	0.00				
36.00	3.22	0.08	0.00				
37.00	3.22	0.08	0.00				
38.00	3.22	0.08	0.00				
39.00	3.22	0.08	0.00				
40.00	3.22	0.08	0.00				
41.00	3.22	0.08	0.00				
42.00	3.22	0.08	0.00				
43.00	3.22	0.08	0.00				
44.00	3.22	0.08	0.00				
45.00	3.22	0.08	0.00				
46.00	3.22	0.08	0.00				
47.00	3.22	0.08	0.00				
48.00	3.22	0.08	0.00				
49.00	3.22	0.08	0.00				
50.00	3.22	0.08	0.00				

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Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX C: EX North Lot C

Runoff = 0.00 cfs @ 15.10 hrs, Volume= 0.003 af, Depth= 0.06"
 Routed to Link EX DP C : EX Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.106	98	Impervious
0.403	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.509	46	Weighted Average
0.403		79.17% Pervious Area
0.106		20.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	48	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	35	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	174	Total			

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX C: EX North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.06	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.06	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.06	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.06	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.06	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.06	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.06	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.06	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.06	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.06	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.06	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.06	0.00
12.00	1.61	0.00	0.00	63.00	3.22	0.06	0.00
13.00	2.41	0.00	0.00	64.00	3.22	0.06	0.00
14.00	2.61	0.01	0.00	65.00	3.22	0.06	0.00
15.00	2.75	0.01	0.00	66.00	3.22	0.06	0.00
16.00	2.85	0.02	0.00	67.00	3.22	0.06	0.00
17.00	2.93	0.03	0.00	68.00	3.22	0.06	0.00
18.00	2.99	0.03	0.00	69.00	3.22	0.06	0.00
19.00	3.04	0.04	0.00	70.00	3.22	0.06	0.00
20.00	3.08	0.04	0.00	71.00	3.22	0.06	0.00
21.00	3.12	0.05	0.00	72.00	3.22	0.06	0.00
22.00	3.16	0.05	0.00				
23.00	3.19	0.06	0.00				
24.00	3.22	0.06	0.00				
25.00	3.22	0.06	0.00				
26.00	3.22	0.06	0.00				
27.00	3.22	0.06	0.00				
28.00	3.22	0.06	0.00				
29.00	3.22	0.06	0.00				
30.00	3.22	0.06	0.00				
31.00	3.22	0.06	0.00				
32.00	3.22	0.06	0.00				
33.00	3.22	0.06	0.00				
34.00	3.22	0.06	0.00				
35.00	3.22	0.06	0.00				
36.00	3.22	0.06	0.00				
37.00	3.22	0.06	0.00				
38.00	3.22	0.06	0.00				
39.00	3.22	0.06	0.00				
40.00	3.22	0.06	0.00				
41.00	3.22	0.06	0.00				
42.00	3.22	0.06	0.00				
43.00	3.22	0.06	0.00				
44.00	3.22	0.06	0.00				
45.00	3.22	0.06	0.00				
46.00	3.22	0.06	0.00				
47.00	3.22	0.06	0.00				
48.00	3.22	0.06	0.00				
49.00	3.22	0.06	0.00				
50.00	3.22	0.06	0.00				

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX D1: EX Jordan West

Runoff = 0.16 cfs @ 12.19 hrs, Volume= 0.019 af, Depth= 0.53"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.167	98	Impervious
0.214	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.435	63	Weighted Average
0.268		61.61% Pervious Area
0.167		38.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	32	0.0160	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
1.1	184	0.0190	2.80		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.5	216	Total			

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX D1: EX Jordan West

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.53	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.53	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.53	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.53	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.53	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.53	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.53	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.53	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.53	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.53	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.53	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.53	0.00
12.00	1.61	0.03	0.03	63.00	3.22	0.53	0.00
13.00	2.41	0.22	0.04	64.00	3.22	0.53	0.00
14.00	2.61	0.28	0.03	65.00	3.22	0.53	0.00
15.00	2.75	0.33	0.02	66.00	3.22	0.53	0.00
16.00	2.85	0.37	0.02	67.00	3.22	0.53	0.00
17.00	2.93	0.40	0.01	68.00	3.22	0.53	0.00
18.00	2.99	0.43	0.01	69.00	3.22	0.53	0.00
19.00	3.04	0.45	0.01	70.00	3.22	0.53	0.00
20.00	3.08	0.47	0.01	71.00	3.22	0.53	0.00
21.00	3.12	0.48	0.01	72.00	3.22	0.53	0.00
22.00	3.16	0.50	0.01				
23.00	3.19	0.52	0.01				
24.00	3.22	0.53	0.01				
25.00	3.22	0.53	0.00				
26.00	3.22	0.53	0.00				
27.00	3.22	0.53	0.00				
28.00	3.22	0.53	0.00				
29.00	3.22	0.53	0.00				
30.00	3.22	0.53	0.00				
31.00	3.22	0.53	0.00				
32.00	3.22	0.53	0.00				
33.00	3.22	0.53	0.00				
34.00	3.22	0.53	0.00				
35.00	3.22	0.53	0.00				
36.00	3.22	0.53	0.00				
37.00	3.22	0.53	0.00				
38.00	3.22	0.53	0.00				
39.00	3.22	0.53	0.00				
40.00	3.22	0.53	0.00				
41.00	3.22	0.53	0.00				
42.00	3.22	0.53	0.00				
43.00	3.22	0.53	0.00				
44.00	3.22	0.53	0.00				
45.00	3.22	0.53	0.00				
46.00	3.22	0.53	0.00				
47.00	3.22	0.53	0.00				
48.00	3.22	0.53	0.00				
49.00	3.22	0.53	0.00				
50.00	3.22	0.53	0.00				

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Belmont Hill School - Existing
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX D2: EX Front Yard

Runoff = 0.41 cfs @ 12.16 hrs, Volume= 0.038 af, Depth= 0.79"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.112	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.303	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	69	Weighted Average
0.470		80.76% Pervious Area
0.112		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.5	221	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	54	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.1	333	Total			

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX D2: EX Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.79	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.79	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.79	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.79	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.79	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.79	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.79	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.79	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.79	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.79	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.79	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.79	0.00
12.00	1.61	0.10	0.14	63.00	3.22	0.79	0.00
13.00	2.41	0.38	0.07	64.00	3.22	0.79	0.00
14.00	2.61	0.47	0.05	65.00	3.22	0.79	0.00
15.00	2.75	0.54	0.04	66.00	3.22	0.79	0.00
16.00	2.85	0.59	0.03	67.00	3.22	0.79	0.00
17.00	2.93	0.63	0.02	68.00	3.22	0.79	0.00
18.00	2.99	0.66	0.02	69.00	3.22	0.79	0.00
19.00	3.04	0.69	0.02	70.00	3.22	0.79	0.00
20.00	3.08	0.71	0.01	71.00	3.22	0.79	0.00
21.00	3.12	0.74	0.01	72.00	3.22	0.79	0.00
22.00	3.16	0.76	0.01				
23.00	3.19	0.77	0.01				
24.00	3.22	0.79	0.01				
25.00	3.22	0.79	0.00				
26.00	3.22	0.79	0.00				
27.00	3.22	0.79	0.00				
28.00	3.22	0.79	0.00				
29.00	3.22	0.79	0.00				
30.00	3.22	0.79	0.00				
31.00	3.22	0.79	0.00				
32.00	3.22	0.79	0.00				
33.00	3.22	0.79	0.00				
34.00	3.22	0.79	0.00				
35.00	3.22	0.79	0.00				
36.00	3.22	0.79	0.00				
37.00	3.22	0.79	0.00				
38.00	3.22	0.79	0.00				
39.00	3.22	0.79	0.00				
40.00	3.22	0.79	0.00				
41.00	3.22	0.79	0.00				
42.00	3.22	0.79	0.00				
43.00	3.22	0.79	0.00				
44.00	3.22	0.79	0.00				
45.00	3.22	0.79	0.00				
46.00	3.22	0.79	0.00				
47.00	3.22	0.79	0.00				
48.00	3.22	0.79	0.00				
49.00	3.22	0.79	0.00				
50.00	3.22	0.79	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX E1: EX Athletic Lot

Runoff = 0.00 cfs @ 21.44 hrs, Volume= 0.000 af, Depth= 0.01"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.044	98	Impervious
0.149	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.097	32	Woods/grass comb., Good, HSG A
0.290	42	Weighted Average
0.246		84.83% Pervious Area
0.044		15.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0900	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX E1: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.01	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.01	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.01	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.01	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.01	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.01	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.01	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.01	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.01	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.01	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.01	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.01	0.00
12.00	1.61	0.00	0.00	63.00	3.22	0.01	0.00
13.00	2.41	0.00	0.00	64.00	3.22	0.01	0.00
14.00	2.61	0.00	0.00	65.00	3.22	0.01	0.00
15.00	2.75	0.00	0.00	66.00	3.22	0.01	0.00
16.00	2.85	0.00	0.00	67.00	3.22	0.01	0.00
17.00	2.93	0.00	0.00	68.00	3.22	0.01	0.00
18.00	2.99	0.00	0.00	69.00	3.22	0.01	0.00
19.00	3.04	0.01	0.00	70.00	3.22	0.01	0.00
20.00	3.08	0.01	0.00	71.00	3.22	0.01	0.00
21.00	3.12	0.01	0.00	72.00	3.22	0.01	0.00
22.00	3.16	0.01	0.00				
23.00	3.19	0.01	0.00				
24.00	3.22	0.01	0.00				
25.00	3.22	0.01	0.00				
26.00	3.22	0.01	0.00				
27.00	3.22	0.01	0.00				
28.00	3.22	0.01	0.00				
29.00	3.22	0.01	0.00				
30.00	3.22	0.01	0.00				
31.00	3.22	0.01	0.00				
32.00	3.22	0.01	0.00				
33.00	3.22	0.01	0.00				
34.00	3.22	0.01	0.00				
35.00	3.22	0.01	0.00				
36.00	3.22	0.01	0.00				
37.00	3.22	0.01	0.00				
38.00	3.22	0.01	0.00				
39.00	3.22	0.01	0.00				
40.00	3.22	0.01	0.00				
41.00	3.22	0.01	0.00				
42.00	3.22	0.01	0.00				
43.00	3.22	0.01	0.00				
44.00	3.22	0.01	0.00				
45.00	3.22	0.01	0.00				
46.00	3.22	0.01	0.00				
47.00	3.22	0.01	0.00				
48.00	3.22	0.01	0.00				
49.00	3.22	0.01	0.00				
50.00	3.22	0.01	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX E2: EX Athletic Lot

Runoff = 0.34 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 1.70"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.137	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.036	32	Woods/grass comb., Good, HSG A
0.173	84	Weighted Average
0.036		20.81% Pervious Area
0.137		79.19% Impervious Area

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

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX E2: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	1.70	0.00
1.00	0.03	0.00	0.00	52.00	3.22	1.70	0.00
2.00	0.06	0.00	0.00	53.00	3.22	1.70	0.00
3.00	0.10	0.00	0.00	54.00	3.22	1.70	0.00
4.00	0.14	0.00	0.00	55.00	3.22	1.70	0.00
5.00	0.18	0.00	0.00	56.00	3.22	1.70	0.00
6.00	0.23	0.00	0.00	57.00	3.22	1.70	0.00
7.00	0.29	0.00	0.00	58.00	3.22	1.70	0.00
8.00	0.37	0.00	0.00	59.00	3.22	1.70	0.00
9.00	0.47	0.00	0.00	60.00	3.22	1.70	0.00
10.00	0.61	0.02	0.01	61.00	3.22	1.70	0.00
11.00	0.80	0.08	0.01	62.00	3.22	1.70	0.00
12.00	1.61	0.48	0.20	63.00	3.22	1.70	0.00
13.00	2.41	1.05	0.03	64.00	3.22	1.70	0.00
14.00	2.61	1.20	0.02	65.00	3.22	1.70	0.00
15.00	2.75	1.31	0.02	66.00	3.22	1.70	0.00
16.00	2.85	1.40	0.01	67.00	3.22	1.70	0.00
17.00	2.93	1.46	0.01	68.00	3.22	1.70	0.00
18.00	2.99	1.51	0.01	69.00	3.22	1.70	0.00
19.00	3.04	1.55	0.01	70.00	3.22	1.70	0.00
20.00	3.08	1.58	0.01	71.00	3.22	1.70	0.00
21.00	3.12	1.62	0.01	72.00	3.22	1.70	0.00
22.00	3.16	1.65	0.01				
23.00	3.19	1.67	0.00				
24.00	3.22	1.70	0.00				
25.00	3.22	1.70	0.00				
26.00	3.22	1.70	0.00				
27.00	3.22	1.70	0.00				
28.00	3.22	1.70	0.00				
29.00	3.22	1.70	0.00				
30.00	3.22	1.70	0.00				
31.00	3.22	1.70	0.00				
32.00	3.22	1.70	0.00				
33.00	3.22	1.70	0.00				
34.00	3.22	1.70	0.00				
35.00	3.22	1.70	0.00				
36.00	3.22	1.70	0.00				
37.00	3.22	1.70	0.00				
38.00	3.22	1.70	0.00				
39.00	3.22	1.70	0.00				
40.00	3.22	1.70	0.00				
41.00	3.22	1.70	0.00				
42.00	3.22	1.70	0.00				
43.00	3.22	1.70	0.00				
44.00	3.22	1.70	0.00				
45.00	3.22	1.70	0.00				
46.00	3.22	1.70	0.00				
47.00	3.22	1.70	0.00				
48.00	3.22	1.70	0.00				
49.00	3.22	1.70	0.00				
50.00	3.22	1.70	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment EX F: EX Upper Lot

Runoff = 1.19 cfs @ 12.09 hrs, Volume= 0.086 af, Depth= 1.85"
 Routed to Link EX DP F : Existing Drainage Network

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.372	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.116	79	Woods/grass comb., Good, HSG D
0.072	32	Woods/grass comb., Good, HSG A
0.560	86	Weighted Average
0.188		33.57% Pervious Area
0.372		66.43% Impervious Area

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

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment EX F: EX Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	1.85	0.00
1.00	0.03	0.00	0.00	52.00	3.22	1.85	0.00
2.00	0.06	0.00	0.00	53.00	3.22	1.85	0.00
3.00	0.10	0.00	0.00	54.00	3.22	1.85	0.00
4.00	0.14	0.00	0.00	55.00	3.22	1.85	0.00
5.00	0.18	0.00	0.00	56.00	3.22	1.85	0.00
6.00	0.23	0.00	0.00	57.00	3.22	1.85	0.00
7.00	0.29	0.00	0.00	58.00	3.22	1.85	0.00
8.00	0.37	0.00	0.00	59.00	3.22	1.85	0.00
9.00	0.47	0.01	0.01	60.00	3.22	1.85	0.00
10.00	0.61	0.04	0.02	61.00	3.22	1.85	0.00
11.00	0.80	0.11	0.05	62.00	3.22	1.85	0.00
12.00	1.61	0.57	0.72	63.00	3.22	1.85	0.00
13.00	2.41	1.17	0.12	64.00	3.22	1.85	0.00
14.00	2.61	1.34	0.08	65.00	3.22	1.85	0.00
15.00	2.75	1.45	0.06	66.00	3.22	1.85	0.00
16.00	2.85	1.54	0.04	67.00	3.22	1.85	0.00
17.00	2.93	1.60	0.03	68.00	3.22	1.85	0.00
18.00	2.99	1.65	0.03	69.00	3.22	1.85	0.00
19.00	3.04	1.69	0.02	70.00	3.22	1.85	0.00
20.00	3.08	1.73	0.02	71.00	3.22	1.85	0.00
21.00	3.12	1.77	0.02	72.00	3.22	1.85	0.00
22.00	3.16	1.80	0.02				
23.00	3.19	1.83	0.02				
24.00	3.22	1.85	0.01				
25.00	3.22	1.85	0.00				
26.00	3.22	1.85	0.00				
27.00	3.22	1.85	0.00				
28.00	3.22	1.85	0.00				
29.00	3.22	1.85	0.00				
30.00	3.22	1.85	0.00				
31.00	3.22	1.85	0.00				
32.00	3.22	1.85	0.00				
33.00	3.22	1.85	0.00				
34.00	3.22	1.85	0.00				
35.00	3.22	1.85	0.00				
36.00	3.22	1.85	0.00				
37.00	3.22	1.85	0.00				
38.00	3.22	1.85	0.00				
39.00	3.22	1.85	0.00				
40.00	3.22	1.85	0.00				
41.00	3.22	1.85	0.00				
42.00	3.22	1.85	0.00				
43.00	3.22	1.85	0.00				
44.00	3.22	1.85	0.00				
45.00	3.22	1.85	0.00				
46.00	3.22	1.85	0.00				
47.00	3.22	1.85	0.00				
48.00	3.22	1.85	0.00				
49.00	3.22	1.85	0.00				
50.00	3.22	1.85	0.00				

Belmont Hill School - Existing Conditions

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Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link EX DP A: EX Park Ave

Inflow Area = 1.826 ac, 10.95% Impervious, Inflow Depth = 0.94" for 2-yr 24-hr event
Inflow = 1.31 cfs @ 12.27 hrs, Volume= 0.143 af
Primary = 1.31 cfs @ 12.27 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

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Belmont Hill School - Existing

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Hydrograph for Link EX DP A: EX Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.35	0.00	0.35	63.00	0.00	0.00	0.00
13.00	0.30	0.00	0.30	64.00	0.00	0.00	0.00
14.00	0.17	0.00	0.17	65.00	0.00	0.00	0.00
15.00	0.13	0.00	0.13	66.00	0.00	0.00	0.00
16.00	0.10	0.00	0.10	67.00	0.00	0.00	0.00
17.00	0.08	0.00	0.08	68.00	0.00	0.00	0.00
18.00	0.06	0.00	0.06	69.00	0.00	0.00	0.00
19.00	0.05	0.00	0.05	70.00	0.00	0.00	0.00
20.00	0.05	0.00	0.05	71.00	0.00	0.00	0.00
21.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
22.00	0.04	0.00	0.04				
23.00	0.04	0.00	0.04				
24.00	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link EX DP B: EX Wetlands

Inflow Area = 3.847 ac, 13.60% Impervious, Inflow Depth = 0.08" for 2-yr 24-hr event
Inflow = 0.04 cfs @ 14.96 hrs, Volume= 0.024 af
Primary = 0.04 cfs @ 14.96 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link EX DP B: EX Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.02	0.00	0.02	64.00	0.00	0.00	0.00
14.00	0.04	0.00	0.04	65.00	0.00	0.00	0.00
15.00	0.04	0.00	0.04	66.00	0.00	0.00	0.00
16.00	0.03	0.00	0.03	67.00	0.00	0.00	0.00
17.00	0.03	0.00	0.03	68.00	0.00	0.00	0.00
18.00	0.03	0.00	0.03	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.02	0.00	0.02	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link EX DP C: EX Prospect St

Inflow Area = 0.509 ac, 20.83% Impervious, Inflow Depth = 0.06" for 2-yr 24-hr event
Inflow = 0.00 cfs @ 15.10 hrs, Volume= 0.003 af
Primary = 0.00 cfs @ 15.10 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link EX DP C: EX Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
21.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link EX DP D: Marsh Street CBs

Inflow Area = 1.017 ac, 27.43% Impervious, Inflow Depth = 0.68" for 2-yr 24-hr event
Inflow = 0.57 cfs @ 12.17 hrs, Volume= 0.058 af
Primary = 0.57 cfs @ 12.17 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link EX DP D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.16	0.00	0.16	63.00	0.00	0.00	0.00
13.00	0.11	0.00	0.11	64.00	0.00	0.00	0.00
14.00	0.07	0.00	0.07	65.00	0.00	0.00	0.00
15.00	0.06	0.00	0.06	66.00	0.00	0.00	0.00
16.00	0.04	0.00	0.04	67.00	0.00	0.00	0.00
17.00	0.03	0.00	0.03	68.00	0.00	0.00	0.00
18.00	0.03	0.00	0.03	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.02	0.00	0.02	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link EX DP E: Existing Stormwater BMP

Inflow Area = 0.463 ac, 39.09% Impervious, Inflow Depth = 0.64" for 2-yr 24-hr event
Inflow = 0.34 cfs @ 12.09 hrs, Volume= 0.025 af
Primary = 0.34 cfs @ 12.09 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link EX DP E: Existing Stormwater BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.01	0.00	0.01	61.00	0.00	0.00	0.00
11.00	0.01	0.00	0.01	62.00	0.00	0.00	0.00
12.00	0.20	0.00	0.20	63.00	0.00	0.00	0.00
13.00	0.03	0.00	0.03	64.00	0.00	0.00	0.00
14.00	0.02	0.00	0.02	65.00	0.00	0.00	0.00
15.00	0.02	0.00	0.02	66.00	0.00	0.00	0.00
16.00	0.01	0.00	0.01	67.00	0.00	0.00	0.00
17.00	0.01	0.00	0.01	68.00	0.00	0.00	0.00
18.00	0.01	0.00	0.01	69.00	0.00	0.00	0.00
19.00	0.01	0.00	0.01	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link EX DP F: Existing Drainage Network

Inflow Area = 2.040 ac, 40.78% Impervious, Inflow Depth = 0.99" for 2-yr 24-hr event
Inflow = 1.99 cfs @ 12.11 hrs, Volume= 0.169 af
Primary = 1.99 cfs @ 12.11 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link EX DP F: Existing Drainage Network

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.03	0.00	0.03	61.00	0.00	0.00	0.00
11.00	0.06	0.00	0.06	62.00	0.00	0.00	0.00
12.00	1.08	0.00	1.08	63.00	0.00	0.00	0.00
13.00	0.26	0.00	0.26	64.00	0.00	0.00	0.00
14.00	0.17	0.00	0.17	65.00	0.00	0.00	0.00
15.00	0.13	0.00	0.13	66.00	0.00	0.00	0.00
16.00	0.10	0.00	0.10	67.00	0.00	0.00	0.00
17.00	0.08	0.00	0.08	68.00	0.00	0.00	0.00
18.00	0.06	0.00	0.06	69.00	0.00	0.00	0.00
19.00	0.05	0.00	0.05	70.00	0.00	0.00	0.00
20.00	0.05	0.00	0.05	71.00	0.00	0.00	0.00
21.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
22.00	0.04	0.00	0.04				
23.00	0.04	0.00	0.04				
24.00	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX A: EX North Lot A

Runoff = 3.13 cfs @ 12.25 hrs, Volume= 0.319 af, Depth= 2.10"
 Routed to Link EX DP A : EX Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.200	98	Impervious
0.366	32	Woods/grass comb., Good, HSG A
1.260	79	Woods/grass comb., Good, HSG D
1.826	72	Weighted Average
1.626		89.05% Pervious Area
0.200		10.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	85	0.0117	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.3	70	0.0360	3.85		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	120	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.6	275	Total			

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Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX A: EX North Lot A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	2.10	0.00
1.00	0.05	0.00	0.00	52.00	4.87	2.10	0.00
2.00	0.10	0.00	0.00	53.00	4.87	2.10	0.00
3.00	0.15	0.00	0.00	54.00	4.87	2.10	0.00
4.00	0.21	0.00	0.00	55.00	4.87	2.10	0.00
5.00	0.28	0.00	0.00	56.00	4.87	2.10	0.00
6.00	0.35	0.00	0.00	57.00	4.87	2.10	0.00
7.00	0.44	0.00	0.00	58.00	4.87	2.10	0.00
8.00	0.56	0.00	0.00	59.00	4.87	2.10	0.00
9.00	0.71	0.00	0.00	60.00	4.87	2.10	0.00
10.00	0.92	0.01	0.02	61.00	4.87	2.10	0.00
11.00	1.22	0.04	0.09	62.00	4.87	2.10	0.00
12.00	2.43	0.50	1.10	63.00	4.87	2.10	0.00
13.00	3.65	1.22	0.61	64.00	4.87	2.10	0.00
14.00	3.95	1.42	0.34	65.00	4.87	2.10	0.00
15.00	4.16	1.57	0.26	66.00	4.87	2.10	0.00
16.00	4.31	1.68	0.19	67.00	4.87	2.10	0.00
17.00	4.43	1.77	0.15	68.00	4.87	2.10	0.00
18.00	4.52	1.83	0.11	69.00	4.87	2.10	0.00
19.00	4.59	1.89	0.10	70.00	4.87	2.10	0.00
20.00	4.66	1.94	0.09	71.00	4.87	2.10	0.00
21.00	4.72	1.99	0.08	72.00	4.87	2.10	0.00
22.00	4.78	2.03	0.07				
23.00	4.83	2.06	0.07				
24.00	4.87	2.10	0.06				
25.00	4.87	2.10	0.00				
26.00	4.87	2.10	0.00				
27.00	4.87	2.10	0.00				
28.00	4.87	2.10	0.00				
29.00	4.87	2.10	0.00				
30.00	4.87	2.10	0.00				
31.00	4.87	2.10	0.00				
32.00	4.87	2.10	0.00				
33.00	4.87	2.10	0.00				
34.00	4.87	2.10	0.00				
35.00	4.87	2.10	0.00				
36.00	4.87	2.10	0.00				
37.00	4.87	2.10	0.00				
38.00	4.87	2.10	0.00				
39.00	4.87	2.10	0.00				
40.00	4.87	2.10	0.00				
41.00	4.87	2.10	0.00				
42.00	4.87	2.10	0.00				
43.00	4.87	2.10	0.00				
44.00	4.87	2.10	0.00				
45.00	4.87	2.10	0.00				
46.00	4.87	2.10	0.00				
47.00	4.87	2.10	0.00				
48.00	4.87	2.10	0.00				
49.00	4.87	2.10	0.00				
50.00	4.87	2.10	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX B: EX North Lot B

Runoff = 0.81 cfs @ 12.47 hrs, Volume= 0.158 af, Depth= 0.49"
 Routed to Link EX DP B : EX Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.523	98	Impervious
2.813	32	Woods/grass comb., Good, HSG A
0.511	79	Woods/grass comb., Good, HSG D
3.847	47	Weighted Average
3.324		86.40% Pervious Area
0.523		13.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
4.9	269	0.0335	0.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.7	307	0.1400	1.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
18.8	676	Total			

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Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX B: EX North Lot B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	0.49	0.00
1.00	0.05	0.00	0.00	52.00	4.87	0.49	0.00
2.00	0.10	0.00	0.00	53.00	4.87	0.49	0.00
3.00	0.15	0.00	0.00	54.00	4.87	0.49	0.00
4.00	0.21	0.00	0.00	55.00	4.87	0.49	0.00
5.00	0.28	0.00	0.00	56.00	4.87	0.49	0.00
6.00	0.35	0.00	0.00	57.00	4.87	0.49	0.00
7.00	0.44	0.00	0.00	58.00	4.87	0.49	0.00
8.00	0.56	0.00	0.00	59.00	4.87	0.49	0.00
9.00	0.71	0.00	0.00	60.00	4.87	0.49	0.00
10.00	0.92	0.00	0.00	61.00	4.87	0.49	0.00
11.00	1.22	0.00	0.00	62.00	4.87	0.49	0.00
12.00	2.43	0.00	0.00	63.00	4.87	0.49	0.00
13.00	3.65	0.15	0.38	64.00	4.87	0.49	0.00
14.00	3.95	0.22	0.25	65.00	4.87	0.49	0.00
15.00	4.16	0.28	0.20	66.00	4.87	0.49	0.00
16.00	4.31	0.32	0.16	67.00	4.87	0.49	0.00
17.00	4.43	0.35	0.12	68.00	4.87	0.49	0.00
18.00	4.52	0.38	0.10	69.00	4.87	0.49	0.00
19.00	4.59	0.40	0.09	70.00	4.87	0.49	0.00
20.00	4.66	0.42	0.08	71.00	4.87	0.49	0.00
21.00	4.72	0.44	0.07	72.00	4.87	0.49	0.00
22.00	4.78	0.46	0.07				
23.00	4.83	0.48	0.06				
24.00	4.87	0.49	0.06				
25.00	4.87	0.49	0.00				
26.00	4.87	0.49	0.00				
27.00	4.87	0.49	0.00				
28.00	4.87	0.49	0.00				
29.00	4.87	0.49	0.00				
30.00	4.87	0.49	0.00				
31.00	4.87	0.49	0.00				
32.00	4.87	0.49	0.00				
33.00	4.87	0.49	0.00				
34.00	4.87	0.49	0.00				
35.00	4.87	0.49	0.00				
36.00	4.87	0.49	0.00				
37.00	4.87	0.49	0.00				
38.00	4.87	0.49	0.00				
39.00	4.87	0.49	0.00				
40.00	4.87	0.49	0.00				
41.00	4.87	0.49	0.00				
42.00	4.87	0.49	0.00				
43.00	4.87	0.49	0.00				
44.00	4.87	0.49	0.00				
45.00	4.87	0.49	0.00				
46.00	4.87	0.49	0.00				
47.00	4.87	0.49	0.00				
48.00	4.87	0.49	0.00				
49.00	4.87	0.49	0.00				
50.00	4.87	0.49	0.00				

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX C: EX North Lot C

Runoff = 0.10 cfs @ 12.39 hrs, Volume= 0.019 af, Depth= 0.45"
 Routed to Link EX DP C : EX Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.106	98	Impervious
0.403	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.509	46	Weighted Average
0.403		79.17% Pervious Area
0.106		20.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	48	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	35	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	174	Total			

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX C: EX North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	0.45	0.00
1.00	0.05	0.00	0.00	52.00	4.87	0.45	0.00
2.00	0.10	0.00	0.00	53.00	4.87	0.45	0.00
3.00	0.15	0.00	0.00	54.00	4.87	0.45	0.00
4.00	0.21	0.00	0.00	55.00	4.87	0.45	0.00
5.00	0.28	0.00	0.00	56.00	4.87	0.45	0.00
6.00	0.35	0.00	0.00	57.00	4.87	0.45	0.00
7.00	0.44	0.00	0.00	58.00	4.87	0.45	0.00
8.00	0.56	0.00	0.00	59.00	4.87	0.45	0.00
9.00	0.71	0.00	0.00	60.00	4.87	0.45	0.00
10.00	0.92	0.00	0.00	61.00	4.87	0.45	0.00
11.00	1.22	0.00	0.00	62.00	4.87	0.45	0.00
12.00	2.43	0.00	0.00	63.00	4.87	0.45	0.00
13.00	3.65	0.13	0.04	64.00	4.87	0.45	0.00
14.00	3.95	0.19	0.03	65.00	4.87	0.45	0.00
15.00	4.16	0.24	0.02	66.00	4.87	0.45	0.00
16.00	4.31	0.28	0.02	67.00	4.87	0.45	0.00
17.00	4.43	0.31	0.02	68.00	4.87	0.45	0.00
18.00	4.52	0.34	0.01	69.00	4.87	0.45	0.00
19.00	4.59	0.36	0.01	70.00	4.87	0.45	0.00
20.00	4.66	0.38	0.01	71.00	4.87	0.45	0.00
21.00	4.72	0.40	0.01	72.00	4.87	0.45	0.00
22.00	4.78	0.42	0.01				
23.00	4.83	0.43	0.01				
24.00	4.87	0.45	0.01				
25.00	4.87	0.45	0.00				
26.00	4.87	0.45	0.00				
27.00	4.87	0.45	0.00				
28.00	4.87	0.45	0.00				
29.00	4.87	0.45	0.00				
30.00	4.87	0.45	0.00				
31.00	4.87	0.45	0.00				
32.00	4.87	0.45	0.00				
33.00	4.87	0.45	0.00				
34.00	4.87	0.45	0.00				
35.00	4.87	0.45	0.00				
36.00	4.87	0.45	0.00				
37.00	4.87	0.45	0.00				
38.00	4.87	0.45	0.00				
39.00	4.87	0.45	0.00				
40.00	4.87	0.45	0.00				
41.00	4.87	0.45	0.00				
42.00	4.87	0.45	0.00				
43.00	4.87	0.45	0.00				
44.00	4.87	0.45	0.00				
45.00	4.87	0.45	0.00				
46.00	4.87	0.45	0.00				
47.00	4.87	0.45	0.00				
48.00	4.87	0.45	0.00				
49.00	4.87	0.45	0.00				
50.00	4.87	0.45	0.00				

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX D1: EX Jordan West

Runoff = 0.57 cfs @ 12.16 hrs, Volume= 0.052 af, Depth= 1.43"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.167	98	Impervious
0.214	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.435	63	Weighted Average
0.268		61.61% Pervious Area
0.167		38.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	32	0.0160	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
1.1	184	0.0190	2.80		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.5	216	Total			

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX D1: EX Jordan West

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	1.43	0.00
1.00	0.05	0.00	0.00	52.00	4.87	1.43	0.00
2.00	0.10	0.00	0.00	53.00	4.87	1.43	0.00
3.00	0.15	0.00	0.00	54.00	4.87	1.43	0.00
4.00	0.21	0.00	0.00	55.00	4.87	1.43	0.00
5.00	0.28	0.00	0.00	56.00	4.87	1.43	0.00
6.00	0.35	0.00	0.00	57.00	4.87	1.43	0.00
7.00	0.44	0.00	0.00	58.00	4.87	1.43	0.00
8.00	0.56	0.00	0.00	59.00	4.87	1.43	0.00
9.00	0.71	0.00	0.00	60.00	4.87	1.43	0.00
10.00	0.92	0.00	0.00	61.00	4.87	1.43	0.00
11.00	1.22	0.00	0.00	62.00	4.87	1.43	0.00
12.00	2.43	0.22	0.21	63.00	4.87	1.43	0.00
13.00	3.65	0.74	0.09	64.00	4.87	1.43	0.00
14.00	3.95	0.89	0.06	65.00	4.87	1.43	0.00
15.00	4.16	1.01	0.05	66.00	4.87	1.43	0.00
16.00	4.31	1.09	0.03	67.00	4.87	1.43	0.00
17.00	4.43	1.16	0.03	68.00	4.87	1.43	0.00
18.00	4.52	1.21	0.02	69.00	4.87	1.43	0.00
19.00	4.59	1.26	0.02	70.00	4.87	1.43	0.00
20.00	4.66	1.30	0.02	71.00	4.87	1.43	0.00
21.00	4.72	1.34	0.02	72.00	4.87	1.43	0.00
22.00	4.78	1.37	0.01				
23.00	4.83	1.40	0.01				
24.00	4.87	1.43	0.01				
25.00	4.87	1.43	0.00				
26.00	4.87	1.43	0.00				
27.00	4.87	1.43	0.00				
28.00	4.87	1.43	0.00				
29.00	4.87	1.43	0.00				
30.00	4.87	1.43	0.00				
31.00	4.87	1.43	0.00				
32.00	4.87	1.43	0.00				
33.00	4.87	1.43	0.00				
34.00	4.87	1.43	0.00				
35.00	4.87	1.43	0.00				
36.00	4.87	1.43	0.00				
37.00	4.87	1.43	0.00				
38.00	4.87	1.43	0.00				
39.00	4.87	1.43	0.00				
40.00	4.87	1.43	0.00				
41.00	4.87	1.43	0.00				
42.00	4.87	1.43	0.00				
43.00	4.87	1.43	0.00				
44.00	4.87	1.43	0.00				
45.00	4.87	1.43	0.00				
46.00	4.87	1.43	0.00				
47.00	4.87	1.43	0.00				
48.00	4.87	1.43	0.00				
49.00	4.87	1.43	0.00				
50.00	4.87	1.43	0.00				

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Belmont Hill School - Existing
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX D2: EX Front Yard

Runoff = 1.07 cfs @ 12.15 hrs, Volume= 0.090 af, Depth= 1.86"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.112	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.303	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	69	Weighted Average
0.470		80.76% Pervious Area
0.112		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.5	221	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	54	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.1	333	Total			

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX D2: EX Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	1.86	0.00
1.00	0.05	0.00	0.00	52.00	4.87	1.86	0.00
2.00	0.10	0.00	0.00	53.00	4.87	1.86	0.00
3.00	0.15	0.00	0.00	54.00	4.87	1.86	0.00
4.00	0.21	0.00	0.00	55.00	4.87	1.86	0.00
5.00	0.28	0.00	0.00	56.00	4.87	1.86	0.00
6.00	0.35	0.00	0.00	57.00	4.87	1.86	0.00
7.00	0.44	0.00	0.00	58.00	4.87	1.86	0.00
8.00	0.56	0.00	0.00	59.00	4.87	1.86	0.00
9.00	0.71	0.00	0.00	60.00	4.87	1.86	0.00
10.00	0.92	0.00	0.00	61.00	4.87	1.86	0.00
11.00	1.22	0.02	0.02	62.00	4.87	1.86	0.00
12.00	2.43	0.39	0.46	63.00	4.87	1.86	0.00
13.00	3.65	1.05	0.15	64.00	4.87	1.86	0.00
14.00	3.95	1.23	0.10	65.00	4.87	1.86	0.00
15.00	4.16	1.37	0.07	66.00	4.87	1.86	0.00
16.00	4.31	1.48	0.05	67.00	4.87	1.86	0.00
17.00	4.43	1.55	0.04	68.00	4.87	1.86	0.00
18.00	4.52	1.62	0.03	69.00	4.87	1.86	0.00
19.00	4.59	1.67	0.03	70.00	4.87	1.86	0.00
20.00	4.66	1.71	0.03	71.00	4.87	1.86	0.00
21.00	4.72	1.76	0.02	72.00	4.87	1.86	0.00
22.00	4.78	1.80	0.02				
23.00	4.83	1.83	0.02				
24.00	4.87	1.86	0.02				
25.00	4.87	1.86	0.00				
26.00	4.87	1.86	0.00				
27.00	4.87	1.86	0.00				
28.00	4.87	1.86	0.00				
29.00	4.87	1.86	0.00				
30.00	4.87	1.86	0.00				
31.00	4.87	1.86	0.00				
32.00	4.87	1.86	0.00				
33.00	4.87	1.86	0.00				
34.00	4.87	1.86	0.00				
35.00	4.87	1.86	0.00				
36.00	4.87	1.86	0.00				
37.00	4.87	1.86	0.00				
38.00	4.87	1.86	0.00				
39.00	4.87	1.86	0.00				
40.00	4.87	1.86	0.00				
41.00	4.87	1.86	0.00				
42.00	4.87	1.86	0.00				
43.00	4.87	1.86	0.00				
44.00	4.87	1.86	0.00				
45.00	4.87	1.86	0.00				
46.00	4.87	1.86	0.00				
47.00	4.87	1.86	0.00				
48.00	4.87	1.86	0.00				
49.00	4.87	1.86	0.00				
50.00	4.87	1.86	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX E1: EX Athletic Lot

Runoff = 0.02 cfs @ 12.49 hrs, Volume= 0.007 af, Depth= 0.28"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.044	98	Impervious
0.149	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.097	32	Woods/grass comb., Good, HSG A
0.290	42	Weighted Average
0.246		84.83% Pervious Area
0.044		15.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0900	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX E1: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	0.28	0.00
1.00	0.05	0.00	0.00	52.00	4.87	0.28	0.00
2.00	0.10	0.00	0.00	53.00	4.87	0.28	0.00
3.00	0.15	0.00	0.00	54.00	4.87	0.28	0.00
4.00	0.21	0.00	0.00	55.00	4.87	0.28	0.00
5.00	0.28	0.00	0.00	56.00	4.87	0.28	0.00
6.00	0.35	0.00	0.00	57.00	4.87	0.28	0.00
7.00	0.44	0.00	0.00	58.00	4.87	0.28	0.00
8.00	0.56	0.00	0.00	59.00	4.87	0.28	0.00
9.00	0.71	0.00	0.00	60.00	4.87	0.28	0.00
10.00	0.92	0.00	0.00	61.00	4.87	0.28	0.00
11.00	1.22	0.00	0.00	62.00	4.87	0.28	0.00
12.00	2.43	0.00	0.00	63.00	4.87	0.28	0.00
13.00	3.65	0.05	0.01	64.00	4.87	0.28	0.00
14.00	3.95	0.09	0.01	65.00	4.87	0.28	0.00
15.00	4.16	0.13	0.01	66.00	4.87	0.28	0.00
16.00	4.31	0.16	0.01	67.00	4.87	0.28	0.00
17.00	4.43	0.18	0.01	68.00	4.87	0.28	0.00
18.00	4.52	0.20	0.01	69.00	4.87	0.28	0.00
19.00	4.59	0.21	0.00	70.00	4.87	0.28	0.00
20.00	4.66	0.23	0.00	71.00	4.87	0.28	0.00
21.00	4.72	0.24	0.00	72.00	4.87	0.28	0.00
22.00	4.78	0.26	0.00				
23.00	4.83	0.27	0.00				
24.00	4.87	0.28	0.00				
25.00	4.87	0.28	0.00				
26.00	4.87	0.28	0.00				
27.00	4.87	0.28	0.00				
28.00	4.87	0.28	0.00				
29.00	4.87	0.28	0.00				
30.00	4.87	0.28	0.00				
31.00	4.87	0.28	0.00				
32.00	4.87	0.28	0.00				
33.00	4.87	0.28	0.00				
34.00	4.87	0.28	0.00				
35.00	4.87	0.28	0.00				
36.00	4.87	0.28	0.00				
37.00	4.87	0.28	0.00				
38.00	4.87	0.28	0.00				
39.00	4.87	0.28	0.00				
40.00	4.87	0.28	0.00				
41.00	4.87	0.28	0.00				
42.00	4.87	0.28	0.00				
43.00	4.87	0.28	0.00				
44.00	4.87	0.28	0.00				
45.00	4.87	0.28	0.00				
46.00	4.87	0.28	0.00				
47.00	4.87	0.28	0.00				
48.00	4.87	0.28	0.00				
49.00	4.87	0.28	0.00				
50.00	4.87	0.28	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX E2: EX Athletic Lot

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 0.045 af, Depth= 3.15"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.137	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.036	32	Woods/grass comb., Good, HSG A
0.173	84	Weighted Average
0.036		20.81% Pervious Area
0.137		79.19% Impervious Area

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

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX E2: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	3.15	0.00
1.00	0.05	0.00	0.00	52.00	4.87	3.15	0.00
2.00	0.10	0.00	0.00	53.00	4.87	3.15	0.00
3.00	0.15	0.00	0.00	54.00	4.87	3.15	0.00
4.00	0.21	0.00	0.00	55.00	4.87	3.15	0.00
5.00	0.28	0.00	0.00	56.00	4.87	3.15	0.00
6.00	0.35	0.00	0.00	57.00	4.87	3.15	0.00
7.00	0.44	0.00	0.00	58.00	4.87	3.15	0.00
8.00	0.56	0.01	0.00	59.00	4.87	3.15	0.00
9.00	0.71	0.05	0.01	60.00	4.87	3.15	0.00
10.00	0.92	0.12	0.02	61.00	4.87	3.15	0.00
11.00	1.22	0.26	0.03	62.00	4.87	3.15	0.00
12.00	2.43	1.07	0.38	63.00	4.87	3.15	0.00
13.00	3.65	2.07	0.06	64.00	4.87	3.15	0.00
14.00	3.95	2.33	0.04	65.00	4.87	3.15	0.00
15.00	4.16	2.51	0.03	66.00	4.87	3.15	0.00
16.00	4.31	2.65	0.02	67.00	4.87	3.15	0.00
17.00	4.43	2.75	0.02	68.00	4.87	3.15	0.00
18.00	4.52	2.83	0.01	69.00	4.87	3.15	0.00
19.00	4.59	2.90	0.01	70.00	4.87	3.15	0.00
20.00	4.66	2.96	0.01	71.00	4.87	3.15	0.00
21.00	4.72	3.02	0.01	72.00	4.87	3.15	0.00
22.00	4.78	3.07	0.01				
23.00	4.83	3.11	0.01				
24.00	4.87	3.15	0.01				
25.00	4.87	3.15	0.00				
26.00	4.87	3.15	0.00				
27.00	4.87	3.15	0.00				
28.00	4.87	3.15	0.00				
29.00	4.87	3.15	0.00				
30.00	4.87	3.15	0.00				
31.00	4.87	3.15	0.00				
32.00	4.87	3.15	0.00				
33.00	4.87	3.15	0.00				
34.00	4.87	3.15	0.00				
35.00	4.87	3.15	0.00				
36.00	4.87	3.15	0.00				
37.00	4.87	3.15	0.00				
38.00	4.87	3.15	0.00				
39.00	4.87	3.15	0.00				
40.00	4.87	3.15	0.00				
41.00	4.87	3.15	0.00				
42.00	4.87	3.15	0.00				
43.00	4.87	3.15	0.00				
44.00	4.87	3.15	0.00				
45.00	4.87	3.15	0.00				
46.00	4.87	3.15	0.00				
47.00	4.87	3.15	0.00				
48.00	4.87	3.15	0.00				
49.00	4.87	3.15	0.00				
50.00	4.87	3.15	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment EX F: EX Upper Lot

Runoff = 2.12 cfs @ 12.09 hrs, Volume= 0.156 af, Depth= 3.35"
 Routed to Link EX DP F : Existing Drainage Network

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.372	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.116	79	Woods/grass comb., Good, HSG D
0.072	32	Woods/grass comb., Good, HSG A
0.560	86	Weighted Average
0.188		33.57% Pervious Area
0.372		66.43% Impervious Area

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

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment EX F: EX Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	3.35	0.00
1.00	0.05	0.00	0.00	52.00	4.87	3.35	0.00
2.00	0.10	0.00	0.00	53.00	4.87	3.35	0.00
3.00	0.15	0.00	0.00	54.00	4.87	3.35	0.00
4.00	0.21	0.00	0.00	55.00	4.87	3.35	0.00
5.00	0.28	0.00	0.00	56.00	4.87	3.35	0.00
6.00	0.35	0.00	0.00	57.00	4.87	3.35	0.00
7.00	0.44	0.01	0.01	58.00	4.87	3.35	0.00
8.00	0.56	0.03	0.02	59.00	4.87	3.35	0.00
9.00	0.71	0.07	0.03	60.00	4.87	3.35	0.00
10.00	0.92	0.16	0.06	61.00	4.87	3.35	0.00
11.00	1.22	0.32	0.11	62.00	4.87	3.35	0.00
12.00	2.43	1.19	1.32	63.00	4.87	3.35	0.00
13.00	3.65	2.23	0.20	64.00	4.87	3.35	0.00
14.00	3.95	2.50	0.13	65.00	4.87	3.35	0.00
15.00	4.16	2.69	0.10	66.00	4.87	3.35	0.00
16.00	4.31	2.83	0.07	67.00	4.87	3.35	0.00
17.00	4.43	2.94	0.05	68.00	4.87	3.35	0.00
18.00	4.52	3.02	0.04	69.00	4.87	3.35	0.00
19.00	4.59	3.09	0.04	70.00	4.87	3.35	0.00
20.00	4.66	3.15	0.03	71.00	4.87	3.35	0.00
21.00	4.72	3.21	0.03	72.00	4.87	3.35	0.00
22.00	4.78	3.26	0.03				
23.00	4.83	3.30	0.02				
24.00	4.87	3.35	0.02				
25.00	4.87	3.35	0.00				
26.00	4.87	3.35	0.00				
27.00	4.87	3.35	0.00				
28.00	4.87	3.35	0.00				
29.00	4.87	3.35	0.00				
30.00	4.87	3.35	0.00				
31.00	4.87	3.35	0.00				
32.00	4.87	3.35	0.00				
33.00	4.87	3.35	0.00				
34.00	4.87	3.35	0.00				
35.00	4.87	3.35	0.00				
36.00	4.87	3.35	0.00				
37.00	4.87	3.35	0.00				
38.00	4.87	3.35	0.00				
39.00	4.87	3.35	0.00				
40.00	4.87	3.35	0.00				
41.00	4.87	3.35	0.00				
42.00	4.87	3.35	0.00				
43.00	4.87	3.35	0.00				
44.00	4.87	3.35	0.00				
45.00	4.87	3.35	0.00				
46.00	4.87	3.35	0.00				
47.00	4.87	3.35	0.00				
48.00	4.87	3.35	0.00				
49.00	4.87	3.35	0.00				
50.00	4.87	3.35	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link EX DP A: EX Park Ave

Inflow Area = 1.826 ac, 10.95% Impervious, Inflow Depth = 2.10" for 10-yr 24-hr event
Inflow = 3.13 cfs @ 12.25 hrs, Volume= 0.319 af
Primary = 3.13 cfs @ 12.25 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link EX DP A: EX Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.09	0.00	0.09	62.00	0.00	0.00	0.00
12.00	1.10	0.00	1.10	63.00	0.00	0.00	0.00
13.00	0.61	0.00	0.61	64.00	0.00	0.00	0.00
14.00	0.34	0.00	0.34	65.00	0.00	0.00	0.00
15.00	0.26	0.00	0.26	66.00	0.00	0.00	0.00
16.00	0.19	0.00	0.19	67.00	0.00	0.00	0.00
17.00	0.15	0.00	0.15	68.00	0.00	0.00	0.00
18.00	0.11	0.00	0.11	69.00	0.00	0.00	0.00
19.00	0.10	0.00	0.10	70.00	0.00	0.00	0.00
20.00	0.09	0.00	0.09	71.00	0.00	0.00	0.00
21.00	0.08	0.00	0.08	72.00	0.00	0.00	0.00
22.00	0.07	0.00	0.07				
23.00	0.07	0.00	0.07				
24.00	0.06	0.00	0.06				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link EX DP B: EX Wetlands

Inflow Area = 3.847 ac, 13.60% Impervious, Inflow Depth = 0.49" for 10-yr 24-hr event
Inflow = 0.81 cfs @ 12.47 hrs, Volume= 0.158 af
Primary = 0.81 cfs @ 12.47 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link EX DP B: EX Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.38	0.00	0.38	64.00	0.00	0.00	0.00
14.00	0.25	0.00	0.25	65.00	0.00	0.00	0.00
15.00	0.20	0.00	0.20	66.00	0.00	0.00	0.00
16.00	0.16	0.00	0.16	67.00	0.00	0.00	0.00
17.00	0.12	0.00	0.12	68.00	0.00	0.00	0.00
18.00	0.10	0.00	0.10	69.00	0.00	0.00	0.00
19.00	0.09	0.00	0.09	70.00	0.00	0.00	0.00
20.00	0.08	0.00	0.08	71.00	0.00	0.00	0.00
21.00	0.07	0.00	0.07	72.00	0.00	0.00	0.00
22.00	0.07	0.00	0.07				
23.00	0.06	0.00	0.06				
24.00	0.06	0.00	0.06				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link EX DP C: EX Prospect St

Inflow Area = 0.509 ac, 20.83% Impervious, Inflow Depth = 0.45" for 10-yr 24-hr event
Inflow = 0.10 cfs @ 12.39 hrs, Volume= 0.019 af
Primary = 0.10 cfs @ 12.39 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link EX DP C: EX Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.04	0.00	0.04	64.00	0.00	0.00	0.00
14.00	0.03	0.00	0.03	65.00	0.00	0.00	0.00
15.00	0.02	0.00	0.02	66.00	0.00	0.00	0.00
16.00	0.02	0.00	0.02	67.00	0.00	0.00	0.00
17.00	0.02	0.00	0.02	68.00	0.00	0.00	0.00
18.00	0.01	0.00	0.01	69.00	0.00	0.00	0.00
19.00	0.01	0.00	0.01	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link EX DP D: Marsh Street CBs

Inflow Area = 1.017 ac, 27.43% Impervious, Inflow Depth = 1.68" for 10-yr 24-hr event
Inflow = 1.64 cfs @ 12.16 hrs, Volume= 0.142 af
Primary = 1.64 cfs @ 12.16 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link EX DP D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.02	0.00	0.02	62.00	0.00	0.00	0.00
12.00	0.67	0.00	0.67	63.00	0.00	0.00	0.00
13.00	0.25	0.00	0.25	64.00	0.00	0.00	0.00
14.00	0.16	0.00	0.16	65.00	0.00	0.00	0.00
15.00	0.12	0.00	0.12	66.00	0.00	0.00	0.00
16.00	0.09	0.00	0.09	67.00	0.00	0.00	0.00
17.00	0.07	0.00	0.07	68.00	0.00	0.00	0.00
18.00	0.05	0.00	0.05	69.00	0.00	0.00	0.00
19.00	0.05	0.00	0.05	70.00	0.00	0.00	0.00
20.00	0.04	0.00	0.04	71.00	0.00	0.00	0.00
21.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
22.00	0.04	0.00	0.04				
23.00	0.03	0.00	0.03				
24.00	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link EX DP E: Existing Stormwater BMP

Inflow Area = 0.463 ac, 39.09% Impervious, Inflow Depth = 1.35" for 10-yr 24-hr event
Inflow = 0.62 cfs @ 12.09 hrs, Volume= 0.052 af
Primary = 0.62 cfs @ 12.09 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link EX DP E: Existing Stormwater BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.03	0.00	0.03	62.00	0.00	0.00	0.00
12.00	0.38	0.00	0.38	63.00	0.00	0.00	0.00
13.00	0.07	0.00	0.07	64.00	0.00	0.00	0.00
14.00	0.05	0.00	0.05	65.00	0.00	0.00	0.00
15.00	0.04	0.00	0.04	66.00	0.00	0.00	0.00
16.00	0.03	0.00	0.03	67.00	0.00	0.00	0.00
17.00	0.02	0.00	0.02	68.00	0.00	0.00	0.00
18.00	0.02	0.00	0.02	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link EX DP F: Existing Drainage Network

Inflow Area = 2.040 ac, 40.78% Impervious, Inflow Depth = 2.06" for 10-yr 24-hr event
Inflow = 4.18 cfs @ 12.11 hrs, Volume= 0.350 af
Primary = 4.18 cfs @ 12.11 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link EX DP F: Existing Drainage Network

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.01	0.00	0.01	58.00	0.00	0.00	0.00
8.00	0.02	0.00	0.02	59.00	0.00	0.00	0.00
9.00	0.04	0.00	0.04	60.00	0.00	0.00	0.00
10.00	0.08	0.00	0.08	61.00	0.00	0.00	0.00
11.00	0.16	0.00	0.16	62.00	0.00	0.00	0.00
12.00	2.36	0.00	2.36	63.00	0.00	0.00	0.00
13.00	0.52	0.00	0.52	64.00	0.00	0.00	0.00
14.00	0.33	0.00	0.33	65.00	0.00	0.00	0.00
15.00	0.26	0.00	0.26	66.00	0.00	0.00	0.00
16.00	0.18	0.00	0.18	67.00	0.00	0.00	0.00
17.00	0.15	0.00	0.15	68.00	0.00	0.00	0.00
18.00	0.11	0.00	0.11	69.00	0.00	0.00	0.00
19.00	0.10	0.00	0.10	70.00	0.00	0.00	0.00
20.00	0.09	0.00	0.09	71.00	0.00	0.00	0.00
21.00	0.08	0.00	0.08	72.00	0.00	0.00	0.00
22.00	0.08	0.00	0.08				
23.00	0.07	0.00	0.07				
24.00	0.06	0.00	0.06				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX A: EX North Lot A

Runoff = 4.73 cfs @ 12.25 hrs, Volume= 0.477 af, Depth= 3.13"
 Routed to Link EX DP A : EX Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.200	98	Impervious
0.366	32	Woods/grass comb., Good, HSG A
1.260	79	Woods/grass comb., Good, HSG D
1.826	72	Weighted Average
1.626		89.05% Pervious Area
0.200		10.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	85	0.0117	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.3	70	0.0360	3.85		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	120	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.6	275	Total			

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX A: EX North Lot A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	3.13	0.00
1.00	0.06	0.00	0.00	52.00	6.17	3.13	0.00
2.00	0.12	0.00	0.00	53.00	6.17	3.13	0.00
3.00	0.19	0.00	0.00	54.00	6.17	3.13	0.00
4.00	0.27	0.00	0.00	55.00	6.17	3.13	0.00
5.00	0.35	0.00	0.00	56.00	6.17	3.13	0.00
6.00	0.44	0.00	0.00	57.00	6.17	3.13	0.00
7.00	0.56	0.00	0.00	58.00	6.17	3.13	0.00
8.00	0.70	0.00	0.00	59.00	6.17	3.13	0.00
9.00	0.90	0.00	0.01	60.00	6.17	3.13	0.00
10.00	1.17	0.04	0.07	61.00	6.17	3.13	0.00
11.00	1.54	0.13	0.20	62.00	6.17	3.13	0.00
12.00	3.08	0.86	1.79	63.00	6.17	3.13	0.00
13.00	4.63	1.92	0.86	64.00	6.17	3.13	0.00
14.00	5.00	2.20	0.48	65.00	6.17	3.13	0.00
15.00	5.27	2.41	0.36	66.00	6.17	3.13	0.00
16.00	5.47	2.56	0.26	67.00	6.17	3.13	0.00
17.00	5.61	2.68	0.20	68.00	6.17	3.13	0.00
18.00	5.73	2.77	0.16	69.00	6.17	3.13	0.00
19.00	5.82	2.85	0.14	70.00	6.17	3.13	0.00
20.00	5.90	2.92	0.12	71.00	6.17	3.13	0.00
21.00	5.98	2.98	0.11	72.00	6.17	3.13	0.00
22.00	6.05	3.04	0.10				
23.00	6.11	3.09	0.09				
24.00	6.17	3.13	0.08				
25.00	6.17	3.13	0.00				
26.00	6.17	3.13	0.00				
27.00	6.17	3.13	0.00				
28.00	6.17	3.13	0.00				
29.00	6.17	3.13	0.00				
30.00	6.17	3.13	0.00				
31.00	6.17	3.13	0.00				
32.00	6.17	3.13	0.00				
33.00	6.17	3.13	0.00				
34.00	6.17	3.13	0.00				
35.00	6.17	3.13	0.00				
36.00	6.17	3.13	0.00				
37.00	6.17	3.13	0.00				
38.00	6.17	3.13	0.00				
39.00	6.17	3.13	0.00				
40.00	6.17	3.13	0.00				
41.00	6.17	3.13	0.00				
42.00	6.17	3.13	0.00				
43.00	6.17	3.13	0.00				
44.00	6.17	3.13	0.00				
45.00	6.17	3.13	0.00				
46.00	6.17	3.13	0.00				
47.00	6.17	3.13	0.00				
48.00	6.17	3.13	0.00				
49.00	6.17	3.13	0.00				
50.00	6.17	3.13	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX B: EX North Lot B

Runoff = 2.26 cfs @ 12.35 hrs, Volume= 0.323 af, Depth= 1.01"
 Routed to Link EX DP B : EX Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.523	98	Impervious
2.813	32	Woods/grass comb., Good, HSG A
0.511	79	Woods/grass comb., Good, HSG D
3.847	47	Weighted Average
3.324		86.40% Pervious Area
0.523		13.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
4.9	269	0.0335	0.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.7	307	0.1400	1.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
18.8	676	Total			

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX B: EX North Lot B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	1.01	0.00
1.00	0.06	0.00	0.00	52.00	6.17	1.01	0.00
2.00	0.12	0.00	0.00	53.00	6.17	1.01	0.00
3.00	0.19	0.00	0.00	54.00	6.17	1.01	0.00
4.00	0.27	0.00	0.00	55.00	6.17	1.01	0.00
5.00	0.35	0.00	0.00	56.00	6.17	1.01	0.00
6.00	0.44	0.00	0.00	57.00	6.17	1.01	0.00
7.00	0.56	0.00	0.00	58.00	6.17	1.01	0.00
8.00	0.70	0.00	0.00	59.00	6.17	1.01	0.00
9.00	0.90	0.00	0.00	60.00	6.17	1.01	0.00
10.00	1.17	0.00	0.00	61.00	6.17	1.01	0.00
11.00	1.54	0.00	0.00	62.00	6.17	1.01	0.00
12.00	3.08	0.06	0.11	63.00	6.17	1.01	0.00
13.00	4.63	0.41	0.76	64.00	6.17	1.01	0.00
14.00	5.00	0.54	0.46	65.00	6.17	1.01	0.00
15.00	5.27	0.64	0.36	66.00	6.17	1.01	0.00
16.00	5.47	0.71	0.27	67.00	6.17	1.01	0.00
17.00	5.61	0.77	0.22	68.00	6.17	1.01	0.00
18.00	5.73	0.82	0.17	69.00	6.17	1.01	0.00
19.00	5.82	0.86	0.15	70.00	6.17	1.01	0.00
20.00	5.90	0.89	0.14	71.00	6.17	1.01	0.00
21.00	5.98	0.93	0.13	72.00	6.17	1.01	0.00
22.00	6.05	0.96	0.12				
23.00	6.11	0.98	0.11				
24.00	6.17	1.01	0.09				
25.00	6.17	1.01	0.00				
26.00	6.17	1.01	0.00				
27.00	6.17	1.01	0.00				
28.00	6.17	1.01	0.00				
29.00	6.17	1.01	0.00				
30.00	6.17	1.01	0.00				
31.00	6.17	1.01	0.00				
32.00	6.17	1.01	0.00				
33.00	6.17	1.01	0.00				
34.00	6.17	1.01	0.00				
35.00	6.17	1.01	0.00				
36.00	6.17	1.01	0.00				
37.00	6.17	1.01	0.00				
38.00	6.17	1.01	0.00				
39.00	6.17	1.01	0.00				
40.00	6.17	1.01	0.00				
41.00	6.17	1.01	0.00				
42.00	6.17	1.01	0.00				
43.00	6.17	1.01	0.00				
44.00	6.17	1.01	0.00				
45.00	6.17	1.01	0.00				
46.00	6.17	1.01	0.00				
47.00	6.17	1.01	0.00				
48.00	6.17	1.01	0.00				
49.00	6.17	1.01	0.00				
50.00	6.17	1.01	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX C: EX North Lot C

Runoff = 0.31 cfs @ 12.22 hrs, Volume= 0.040 af, Depth= 0.94"
 Routed to Link EX DP C : EX Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.106	98	Impervious
0.403	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.509	46	Weighted Average
0.403		79.17% Pervious Area
0.106		20.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	48	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	35	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	174	Total			

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX C: EX North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	0.94	0.00
1.00	0.06	0.00	0.00	52.00	6.17	0.94	0.00
2.00	0.12	0.00	0.00	53.00	6.17	0.94	0.00
3.00	0.19	0.00	0.00	54.00	6.17	0.94	0.00
4.00	0.27	0.00	0.00	55.00	6.17	0.94	0.00
5.00	0.35	0.00	0.00	56.00	6.17	0.94	0.00
6.00	0.44	0.00	0.00	57.00	6.17	0.94	0.00
7.00	0.56	0.00	0.00	58.00	6.17	0.94	0.00
8.00	0.70	0.00	0.00	59.00	6.17	0.94	0.00
9.00	0.90	0.00	0.00	60.00	6.17	0.94	0.00
10.00	1.17	0.00	0.00	61.00	6.17	0.94	0.00
11.00	1.54	0.00	0.00	62.00	6.17	0.94	0.00
12.00	3.08	0.04	0.03	63.00	6.17	0.94	0.00
13.00	4.63	0.37	0.08	64.00	6.17	0.94	0.00
14.00	5.00	0.49	0.06	65.00	6.17	0.94	0.00
15.00	5.27	0.58	0.04	66.00	6.17	0.94	0.00
16.00	5.47	0.65	0.03	67.00	6.17	0.94	0.00
17.00	5.61	0.71	0.03	68.00	6.17	0.94	0.00
18.00	5.73	0.75	0.02	69.00	6.17	0.94	0.00
19.00	5.82	0.79	0.02	70.00	6.17	0.94	0.00
20.00	5.90	0.83	0.02	71.00	6.17	0.94	0.00
21.00	5.98	0.86	0.02	72.00	6.17	0.94	0.00
22.00	6.05	0.89	0.01				
23.00	6.11	0.91	0.01				
24.00	6.17	0.94	0.01				
25.00	6.17	0.94	0.00				
26.00	6.17	0.94	0.00				
27.00	6.17	0.94	0.00				
28.00	6.17	0.94	0.00				
29.00	6.17	0.94	0.00				
30.00	6.17	0.94	0.00				
31.00	6.17	0.94	0.00				
32.00	6.17	0.94	0.00				
33.00	6.17	0.94	0.00				
34.00	6.17	0.94	0.00				
35.00	6.17	0.94	0.00				
36.00	6.17	0.94	0.00				
37.00	6.17	0.94	0.00				
38.00	6.17	0.94	0.00				
39.00	6.17	0.94	0.00				
40.00	6.17	0.94	0.00				
41.00	6.17	0.94	0.00				
42.00	6.17	0.94	0.00				
43.00	6.17	0.94	0.00				
44.00	6.17	0.94	0.00				
45.00	6.17	0.94	0.00				
46.00	6.17	0.94	0.00				
47.00	6.17	0.94	0.00				
48.00	6.17	0.94	0.00				
49.00	6.17	0.94	0.00				
50.00	6.17	0.94	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX D1: EX Jordan West

Runoff = 0.97 cfs @ 12.16 hrs, Volume= 0.083 af, Depth= 2.30"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.167	98	Impervious
0.214	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.435	63	Weighted Average
0.268		61.61% Pervious Area
0.167		38.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	32	0.0160	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
1.1	184	0.0190	2.80		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.5	216	Total			

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX D1: EX Jordan West

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	2.30	0.00
1.00	0.06	0.00	0.00	52.00	6.17	2.30	0.00
2.00	0.12	0.00	0.00	53.00	6.17	2.30	0.00
3.00	0.19	0.00	0.00	54.00	6.17	2.30	0.00
4.00	0.27	0.00	0.00	55.00	6.17	2.30	0.00
5.00	0.35	0.00	0.00	56.00	6.17	2.30	0.00
6.00	0.44	0.00	0.00	57.00	6.17	2.30	0.00
7.00	0.56	0.00	0.00	58.00	6.17	2.30	0.00
8.00	0.70	0.00	0.00	59.00	6.17	2.30	0.00
9.00	0.90	0.00	0.00	60.00	6.17	2.30	0.00
10.00	1.17	0.00	0.00	61.00	6.17	2.30	0.00
11.00	1.54	0.02	0.02	62.00	6.17	2.30	0.00
12.00	3.08	0.47	0.40	63.00	6.17	2.30	0.00
13.00	4.63	1.28	0.14	64.00	6.17	2.30	0.00
14.00	5.00	1.51	0.09	65.00	6.17	2.30	0.00
15.00	5.27	1.68	0.07	66.00	6.17	2.30	0.00
16.00	5.47	1.81	0.05	67.00	6.17	2.30	0.00
17.00	5.61	1.91	0.04	68.00	6.17	2.30	0.00
18.00	5.73	1.99	0.03	69.00	6.17	2.30	0.00
19.00	5.82	2.05	0.03	70.00	6.17	2.30	0.00
20.00	5.90	2.11	0.02	71.00	6.17	2.30	0.00
21.00	5.98	2.16	0.02	72.00	6.17	2.30	0.00
22.00	6.05	2.21	0.02				
23.00	6.11	2.26	0.02				
24.00	6.17	2.30	0.02				
25.00	6.17	2.30	0.00				
26.00	6.17	2.30	0.00				
27.00	6.17	2.30	0.00				
28.00	6.17	2.30	0.00				
29.00	6.17	2.30	0.00				
30.00	6.17	2.30	0.00				
31.00	6.17	2.30	0.00				
32.00	6.17	2.30	0.00				
33.00	6.17	2.30	0.00				
34.00	6.17	2.30	0.00				
35.00	6.17	2.30	0.00				
36.00	6.17	2.30	0.00				
37.00	6.17	2.30	0.00				
38.00	6.17	2.30	0.00				
39.00	6.17	2.30	0.00				
40.00	6.17	2.30	0.00				
41.00	6.17	2.30	0.00				
42.00	6.17	2.30	0.00				
43.00	6.17	2.30	0.00				
44.00	6.17	2.30	0.00				
45.00	6.17	2.30	0.00				
46.00	6.17	2.30	0.00				
47.00	6.17	2.30	0.00				
48.00	6.17	2.30	0.00				
49.00	6.17	2.30	0.00				
50.00	6.17	2.30	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX D2: EX Front Yard

Runoff = 1.66 cfs @ 12.15 hrs, Volume= 0.138 af, Depth= 2.85"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.112	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.303	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	69	Weighted Average
0.470		80.76% Pervious Area
0.112		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.5	221	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	54	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.1	333	Total			

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX D2: EX Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	2.85	0.00
1.00	0.06	0.00	0.00	52.00	6.17	2.85	0.00
2.00	0.12	0.00	0.00	53.00	6.17	2.85	0.00
3.00	0.19	0.00	0.00	54.00	6.17	2.85	0.00
4.00	0.27	0.00	0.00	55.00	6.17	2.85	0.00
5.00	0.35	0.00	0.00	56.00	6.17	2.85	0.00
6.00	0.44	0.00	0.00	57.00	6.17	2.85	0.00
7.00	0.56	0.00	0.00	58.00	6.17	2.85	0.00
8.00	0.70	0.00	0.00	59.00	6.17	2.85	0.00
9.00	0.90	0.00	0.00	60.00	6.17	2.85	0.00
10.00	1.17	0.02	0.02	61.00	6.17	2.85	0.00
11.00	1.54	0.08	0.05	62.00	6.17	2.85	0.00
12.00	3.08	0.72	0.76	63.00	6.17	2.85	0.00
13.00	4.63	1.69	0.22	64.00	6.17	2.85	0.00
14.00	5.00	1.96	0.14	65.00	6.17	2.85	0.00
15.00	5.27	2.16	0.11	66.00	6.17	2.85	0.00
16.00	5.47	2.30	0.08	67.00	6.17	2.85	0.00
17.00	5.61	2.41	0.06	68.00	6.17	2.85	0.00
18.00	5.73	2.50	0.05	69.00	6.17	2.85	0.00
19.00	5.82	2.57	0.04	70.00	6.17	2.85	0.00
20.00	5.90	2.64	0.04	71.00	6.17	2.85	0.00
21.00	5.98	2.70	0.03	72.00	6.17	2.85	0.00
22.00	6.05	2.75	0.03				
23.00	6.11	2.80	0.03				
24.00	6.17	2.85	0.02				
25.00	6.17	2.85	0.00				
26.00	6.17	2.85	0.00				
27.00	6.17	2.85	0.00				
28.00	6.17	2.85	0.00				
29.00	6.17	2.85	0.00				
30.00	6.17	2.85	0.00				
31.00	6.17	2.85	0.00				
32.00	6.17	2.85	0.00				
33.00	6.17	2.85	0.00				
34.00	6.17	2.85	0.00				
35.00	6.17	2.85	0.00				
36.00	6.17	2.85	0.00				
37.00	6.17	2.85	0.00				
38.00	6.17	2.85	0.00				
39.00	6.17	2.85	0.00				
40.00	6.17	2.85	0.00				
41.00	6.17	2.85	0.00				
42.00	6.17	2.85	0.00				
43.00	6.17	2.85	0.00				
44.00	6.17	2.85	0.00				
45.00	6.17	2.85	0.00				
46.00	6.17	2.85	0.00				
47.00	6.17	2.85	0.00				
48.00	6.17	2.85	0.00				
49.00	6.17	2.85	0.00				
50.00	6.17	2.85	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX E1: EX Athletic Lot

Runoff = 0.10 cfs @ 12.33 hrs, Volume= 0.016 af, Depth= 0.67"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.044	98	Impervious
0.149	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.097	32	Woods/grass comb., Good, HSG A
0.290	42	Weighted Average
0.246		84.83% Pervious Area
0.044		15.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0900	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX E1: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	0.67	0.00
1.00	0.06	0.00	0.00	52.00	6.17	0.67	0.00
2.00	0.12	0.00	0.00	53.00	6.17	0.67	0.00
3.00	0.19	0.00	0.00	54.00	6.17	0.67	0.00
4.00	0.27	0.00	0.00	55.00	6.17	0.67	0.00
5.00	0.35	0.00	0.00	56.00	6.17	0.67	0.00
6.00	0.44	0.00	0.00	57.00	6.17	0.67	0.00
7.00	0.56	0.00	0.00	58.00	6.17	0.67	0.00
8.00	0.70	0.00	0.00	59.00	6.17	0.67	0.00
9.00	0.90	0.00	0.00	60.00	6.17	0.67	0.00
10.00	1.17	0.00	0.00	61.00	6.17	0.67	0.00
11.00	1.54	0.00	0.00	62.00	6.17	0.67	0.00
12.00	3.08	0.01	0.00	63.00	6.17	0.67	0.00
13.00	4.63	0.22	0.03	64.00	6.17	0.67	0.00
14.00	5.00	0.31	0.02	65.00	6.17	0.67	0.00
15.00	5.27	0.39	0.02	66.00	6.17	0.67	0.00
16.00	5.47	0.44	0.02	67.00	6.17	0.67	0.00
17.00	5.61	0.49	0.01	68.00	6.17	0.67	0.00
18.00	5.73	0.52	0.01	69.00	6.17	0.67	0.00
19.00	5.82	0.55	0.01	70.00	6.17	0.67	0.00
20.00	5.90	0.58	0.01	71.00	6.17	0.67	0.00
21.00	5.98	0.61	0.01	72.00	6.17	0.67	0.00
22.00	6.05	0.63	0.01				
23.00	6.11	0.65	0.01				
24.00	6.17	0.67	0.01				
25.00	6.17	0.67	0.00				
26.00	6.17	0.67	0.00				
27.00	6.17	0.67	0.00				
28.00	6.17	0.67	0.00				
29.00	6.17	0.67	0.00				
30.00	6.17	0.67	0.00				
31.00	6.17	0.67	0.00				
32.00	6.17	0.67	0.00				
33.00	6.17	0.67	0.00				
34.00	6.17	0.67	0.00				
35.00	6.17	0.67	0.00				
36.00	6.17	0.67	0.00				
37.00	6.17	0.67	0.00				
38.00	6.17	0.67	0.00				
39.00	6.17	0.67	0.00				
40.00	6.17	0.67	0.00				
41.00	6.17	0.67	0.00				
42.00	6.17	0.67	0.00				
43.00	6.17	0.67	0.00				
44.00	6.17	0.67	0.00				
45.00	6.17	0.67	0.00				
46.00	6.17	0.67	0.00				
47.00	6.17	0.67	0.00				
48.00	6.17	0.67	0.00				
49.00	6.17	0.67	0.00				
50.00	6.17	0.67	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX E2: EX Athletic Lot

Runoff = 0.85 cfs @ 12.09 hrs, Volume= 0.063 af, Depth= 4.36"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.137	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.036	32	Woods/grass comb., Good, HSG A
0.173	84	Weighted Average
0.036		20.81% Pervious Area
0.137		79.19% Impervious Area

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

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX E2: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	4.36	0.00
1.00	0.06	0.00	0.00	52.00	6.17	4.36	0.00
2.00	0.12	0.00	0.00	53.00	6.17	4.36	0.00
3.00	0.19	0.00	0.00	54.00	6.17	4.36	0.00
4.00	0.27	0.00	0.00	55.00	6.17	4.36	0.00
5.00	0.35	0.00	0.00	56.00	6.17	4.36	0.00
6.00	0.44	0.00	0.00	57.00	6.17	4.36	0.00
7.00	0.56	0.02	0.00	58.00	6.17	4.36	0.00
8.00	0.70	0.05	0.01	59.00	6.17	4.36	0.00
9.00	0.90	0.11	0.01	60.00	6.17	4.36	0.00
10.00	1.17	0.23	0.03	61.00	6.17	4.36	0.00
11.00	1.54	0.44	0.05	62.00	6.17	4.36	0.00
12.00	3.08	1.59	0.53	63.00	6.17	4.36	0.00
13.00	4.63	2.93	0.08	64.00	6.17	4.36	0.00
14.00	5.00	3.27	0.05	65.00	6.17	4.36	0.00
15.00	5.27	3.52	0.04	66.00	6.17	4.36	0.00
16.00	5.47	3.70	0.03	67.00	6.17	4.36	0.00
17.00	5.61	3.83	0.02	68.00	6.17	4.36	0.00
18.00	5.73	3.94	0.02	69.00	6.17	4.36	0.00
19.00	5.82	4.03	0.01	70.00	6.17	4.36	0.00
20.00	5.90	4.11	0.01	71.00	6.17	4.36	0.00
21.00	5.98	4.18	0.01	72.00	6.17	4.36	0.00
22.00	6.05	4.24	0.01				
23.00	6.11	4.30	0.01				
24.00	6.17	4.36	0.01				
25.00	6.17	4.36	0.00				
26.00	6.17	4.36	0.00				
27.00	6.17	4.36	0.00				
28.00	6.17	4.36	0.00				
29.00	6.17	4.36	0.00				
30.00	6.17	4.36	0.00				
31.00	6.17	4.36	0.00				
32.00	6.17	4.36	0.00				
33.00	6.17	4.36	0.00				
34.00	6.17	4.36	0.00				
35.00	6.17	4.36	0.00				
36.00	6.17	4.36	0.00				
37.00	6.17	4.36	0.00				
38.00	6.17	4.36	0.00				
39.00	6.17	4.36	0.00				
40.00	6.17	4.36	0.00				
41.00	6.17	4.36	0.00				
42.00	6.17	4.36	0.00				
43.00	6.17	4.36	0.00				
44.00	6.17	4.36	0.00				
45.00	6.17	4.36	0.00				
46.00	6.17	4.36	0.00				
47.00	6.17	4.36	0.00				
48.00	6.17	4.36	0.00				
49.00	6.17	4.36	0.00				
50.00	6.17	4.36	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment EX F: EX Upper Lot

Runoff = 2.86 cfs @ 12.09 hrs, Volume= 0.213 af, Depth= 4.57"
Routed to Link EX DP F : Existing Drainage Network

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.372	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.116	79	Woods/grass comb., Good, HSG D
0.072	32	Woods/grass comb., Good, HSG A
0.560	86	Weighted Average
0.188		33.57% Pervious Area
0.372		66.43% Impervious Area

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

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment EX F: EX Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	4.57	0.00
1.00	0.06	0.00	0.00	52.00	6.17	4.57	0.00
2.00	0.12	0.00	0.00	53.00	6.17	4.57	0.00
3.00	0.19	0.00	0.00	54.00	6.17	4.57	0.00
4.00	0.27	0.00	0.00	55.00	6.17	4.57	0.00
5.00	0.35	0.00	0.00	56.00	6.17	4.57	0.00
6.00	0.44	0.01	0.01	57.00	6.17	4.57	0.00
7.00	0.56	0.03	0.02	58.00	6.17	4.57	0.00
8.00	0.70	0.07	0.03	59.00	6.17	4.57	0.00
9.00	0.90	0.15	0.06	60.00	6.17	4.57	0.00
10.00	1.17	0.29	0.09	61.00	6.17	4.57	0.00
11.00	1.54	0.52	0.16	62.00	6.17	4.57	0.00
12.00	3.08	1.74	1.80	63.00	6.17	4.57	0.00
13.00	4.63	3.12	0.26	64.00	6.17	4.57	0.00
14.00	5.00	3.47	0.17	65.00	6.17	4.57	0.00
15.00	5.27	3.72	0.13	66.00	6.17	4.57	0.00
16.00	5.47	3.90	0.09	67.00	6.17	4.57	0.00
17.00	5.61	4.04	0.07	68.00	6.17	4.57	0.00
18.00	5.73	4.15	0.05	69.00	6.17	4.57	0.00
19.00	5.82	4.24	0.05	70.00	6.17	4.57	0.00
20.00	5.90	4.32	0.04	71.00	6.17	4.57	0.00
21.00	5.98	4.39	0.04	72.00	6.17	4.57	0.00
22.00	6.05	4.46	0.04				
23.00	6.11	4.52	0.03				
24.00	6.17	4.57	0.03				
25.00	6.17	4.57	0.00				
26.00	6.17	4.57	0.00				
27.00	6.17	4.57	0.00				
28.00	6.17	4.57	0.00				
29.00	6.17	4.57	0.00				
30.00	6.17	4.57	0.00				
31.00	6.17	4.57	0.00				
32.00	6.17	4.57	0.00				
33.00	6.17	4.57	0.00				
34.00	6.17	4.57	0.00				
35.00	6.17	4.57	0.00				
36.00	6.17	4.57	0.00				
37.00	6.17	4.57	0.00				
38.00	6.17	4.57	0.00				
39.00	6.17	4.57	0.00				
40.00	6.17	4.57	0.00				
41.00	6.17	4.57	0.00				
42.00	6.17	4.57	0.00				
43.00	6.17	4.57	0.00				
44.00	6.17	4.57	0.00				
45.00	6.17	4.57	0.00				
46.00	6.17	4.57	0.00				
47.00	6.17	4.57	0.00				
48.00	6.17	4.57	0.00				
49.00	6.17	4.57	0.00				
50.00	6.17	4.57	0.00				

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link EX DP A: EX Park Ave

Inflow Area = 1.826 ac, 10.95% Impervious, Inflow Depth = 3.13" for 25-yr 24-hr event
Inflow = 4.73 cfs @ 12.25 hrs, Volume= 0.477 af
Primary = 4.73 cfs @ 12.25 hrs, Volume= 0.477 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link EX DP A: EX Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.07	0.00	0.07	61.00	0.00	0.00	0.00
11.00	0.20	0.00	0.20	62.00	0.00	0.00	0.00
12.00	1.79	0.00	1.79	63.00	0.00	0.00	0.00
13.00	0.86	0.00	0.86	64.00	0.00	0.00	0.00
14.00	0.48	0.00	0.48	65.00	0.00	0.00	0.00
15.00	0.36	0.00	0.36	66.00	0.00	0.00	0.00
16.00	0.26	0.00	0.26	67.00	0.00	0.00	0.00
17.00	0.20	0.00	0.20	68.00	0.00	0.00	0.00
18.00	0.16	0.00	0.16	69.00	0.00	0.00	0.00
19.00	0.14	0.00	0.14	70.00	0.00	0.00	0.00
20.00	0.12	0.00	0.12	71.00	0.00	0.00	0.00
21.00	0.11	0.00	0.11	72.00	0.00	0.00	0.00
22.00	0.10	0.00	0.10				
23.00	0.09	0.00	0.09				
24.00	0.08	0.00	0.08				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link EX DP B: EX Wetlands

Inflow Area = 3.847 ac, 13.60% Impervious, Inflow Depth = 1.01" for 25-yr 24-hr event
Inflow = 2.26 cfs @ 12.35 hrs, Volume= 0.323 af
Primary = 2.26 cfs @ 12.35 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link EX DP B: EX Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.11	0.00	0.11	63.00	0.00	0.00	0.00
13.00	0.76	0.00	0.76	64.00	0.00	0.00	0.00
14.00	0.46	0.00	0.46	65.00	0.00	0.00	0.00
15.00	0.36	0.00	0.36	66.00	0.00	0.00	0.00
16.00	0.27	0.00	0.27	67.00	0.00	0.00	0.00
17.00	0.22	0.00	0.22	68.00	0.00	0.00	0.00
18.00	0.17	0.00	0.17	69.00	0.00	0.00	0.00
19.00	0.15	0.00	0.15	70.00	0.00	0.00	0.00
20.00	0.14	0.00	0.14	71.00	0.00	0.00	0.00
21.00	0.13	0.00	0.13	72.00	0.00	0.00	0.00
22.00	0.12	0.00	0.12				
23.00	0.11	0.00	0.11				
24.00	0.09	0.00	0.09				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link EX DP C: EX Prospect St

Inflow Area = 0.509 ac, 20.83% Impervious, Inflow Depth = 0.94" for 25-yr 24-hr event
Inflow = 0.31 cfs @ 12.22 hrs, Volume= 0.040 af
Primary = 0.31 cfs @ 12.22 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link EX DP C: EX Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.03	0.00	0.03	63.00	0.00	0.00	0.00
13.00	0.08	0.00	0.08	64.00	0.00	0.00	0.00
14.00	0.06	0.00	0.06	65.00	0.00	0.00	0.00
15.00	0.04	0.00	0.04	66.00	0.00	0.00	0.00
16.00	0.03	0.00	0.03	67.00	0.00	0.00	0.00
17.00	0.03	0.00	0.03	68.00	0.00	0.00	0.00
18.00	0.02	0.00	0.02	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.02	0.00	0.02	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link EX DP D: Marsh Street CBs

Inflow Area = 1.017 ac, 27.43% Impervious, Inflow Depth = 2.61" for 25-yr 24-hr event
Inflow = 2.63 cfs @ 12.15 hrs, Volume= 0.221 af
Primary = 2.63 cfs @ 12.15 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link EX DP D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.07	0.00	0.07	62.00	0.00	0.00	0.00
12.00	1.16	0.00	1.16	63.00	0.00	0.00	0.00
13.00	0.36	0.00	0.36	64.00	0.00	0.00	0.00
14.00	0.23	0.00	0.23	65.00	0.00	0.00	0.00
15.00	0.17	0.00	0.17	66.00	0.00	0.00	0.00
16.00	0.13	0.00	0.13	67.00	0.00	0.00	0.00
17.00	0.10	0.00	0.10	68.00	0.00	0.00	0.00
18.00	0.08	0.00	0.08	69.00	0.00	0.00	0.00
19.00	0.07	0.00	0.07	70.00	0.00	0.00	0.00
20.00	0.06	0.00	0.06	71.00	0.00	0.00	0.00
21.00	0.06	0.00	0.06	72.00	0.00	0.00	0.00
22.00	0.05	0.00	0.05				
23.00	0.05	0.00	0.05				
24.00	0.04	0.00	0.04				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link EX DP E: Existing Stormwater BMP

Inflow Area = 0.463 ac, 39.09% Impervious, Inflow Depth = 2.05" for 25-yr 24-hr event
Inflow = 0.87 cfs @ 12.10 hrs, Volume= 0.079 af
Primary = 0.87 cfs @ 12.10 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link EX DP E: Existing Stormwater BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.01	0.00	0.01	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.03	0.00	0.03	61.00	0.00	0.00	0.00
11.00	0.05	0.00	0.05	62.00	0.00	0.00	0.00
12.00	0.53	0.00	0.53	63.00	0.00	0.00	0.00
13.00	0.11	0.00	0.11	64.00	0.00	0.00	0.00
14.00	0.07	0.00	0.07	65.00	0.00	0.00	0.00
15.00	0.06	0.00	0.06	66.00	0.00	0.00	0.00
16.00	0.04	0.00	0.04	67.00	0.00	0.00	0.00
17.00	0.03	0.00	0.03	68.00	0.00	0.00	0.00
18.00	0.03	0.00	0.03	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.02	0.00	0.02	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link EX DP F: Existing Drainage Network

Inflow Area = 2.040 ac, 40.78% Impervious, Inflow Depth = 3.02" for 25-yr 24-hr event
Inflow = 6.09 cfs @ 12.11 hrs, Volume= 0.514 af
Primary = 6.09 cfs @ 12.11 hrs, Volume= 0.514 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link EX DP F: Existing Drainage Network

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.01	0.00	0.01	57.00	0.00	0.00	0.00
7.00	0.02	0.00	0.02	58.00	0.00	0.00	0.00
8.00	0.04	0.00	0.04	59.00	0.00	0.00	0.00
9.00	0.07	0.00	0.07	60.00	0.00	0.00	0.00
10.00	0.13	0.00	0.13	61.00	0.00	0.00	0.00
11.00	0.28	0.00	0.28	62.00	0.00	0.00	0.00
12.00	3.49	0.00	3.49	63.00	0.00	0.00	0.00
13.00	0.74	0.00	0.74	64.00	0.00	0.00	0.00
14.00	0.47	0.00	0.47	65.00	0.00	0.00	0.00
15.00	0.36	0.00	0.36	66.00	0.00	0.00	0.00
16.00	0.26	0.00	0.26	67.00	0.00	0.00	0.00
17.00	0.20	0.00	0.20	68.00	0.00	0.00	0.00
18.00	0.16	0.00	0.16	69.00	0.00	0.00	0.00
19.00	0.14	0.00	0.14	70.00	0.00	0.00	0.00
20.00	0.13	0.00	0.13	71.00	0.00	0.00	0.00
21.00	0.12	0.00	0.12	72.00	0.00	0.00	0.00
22.00	0.11	0.00	0.11				
23.00	0.09	0.00	0.09				
24.00	0.08	0.00	0.08				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX A: EX North Lot A

Runoff = 8.24 cfs @ 12.24 hrs, Volume= 0.829 af, Depth= 5.45"
 Routed to Link EX DP A : EX Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.200	98	Impervious
0.366	32	Woods/grass comb., Good, HSG A
1.260	79	Woods/grass comb., Good, HSG D
1.826	72	Weighted Average
1.626		89.05% Pervious Area
0.200		10.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	85	0.0117	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.3	70	0.0360	3.85		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	120	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.6	275	Total			

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX A: EX North Lot A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	5.45	0.00
1.00	0.09	0.00	0.00	52.00	8.85	5.45	0.00
2.00	0.18	0.00	0.00	53.00	8.85	5.45	0.00
3.00	0.27	0.00	0.00	54.00	8.85	5.45	0.00
4.00	0.38	0.00	0.00	55.00	8.85	5.45	0.00
5.00	0.50	0.00	0.00	56.00	8.85	5.45	0.00
6.00	0.64	0.00	0.00	57.00	8.85	5.45	0.00
7.00	0.80	0.00	0.00	58.00	8.85	5.45	0.00
8.00	1.01	0.01	0.03	59.00	8.85	5.45	0.00
9.00	1.29	0.06	0.11	60.00	8.85	5.45	0.00
10.00	1.67	0.17	0.23	61.00	8.85	5.45	0.00
11.00	2.21	0.39	0.47	62.00	8.85	5.45	0.00
12.00	4.42	1.77	3.38	63.00	8.85	5.45	0.00
13.00	6.64	3.52	1.40	64.00	8.85	5.45	0.00
14.00	7.18	3.98	0.77	65.00	8.85	5.45	0.00
15.00	7.56	4.31	0.57	66.00	8.85	5.45	0.00
16.00	7.84	4.56	0.41	67.00	8.85	5.45	0.00
17.00	8.05	4.74	0.32	68.00	8.85	5.45	0.00
18.00	8.21	4.88	0.25	69.00	8.85	5.45	0.00
19.00	8.35	5.00	0.21	70.00	8.85	5.45	0.00
20.00	8.47	5.11	0.19	71.00	8.85	5.45	0.00
21.00	8.58	5.21	0.18	72.00	8.85	5.45	0.00
22.00	8.68	5.30	0.16				
23.00	8.77	5.38	0.14				
24.00	8.85	5.45	0.13				
25.00	8.85	5.45	0.00				
26.00	8.85	5.45	0.00				
27.00	8.85	5.45	0.00				
28.00	8.85	5.45	0.00				
29.00	8.85	5.45	0.00				
30.00	8.85	5.45	0.00				
31.00	8.85	5.45	0.00				
32.00	8.85	5.45	0.00				
33.00	8.85	5.45	0.00				
34.00	8.85	5.45	0.00				
35.00	8.85	5.45	0.00				
36.00	8.85	5.45	0.00				
37.00	8.85	5.45	0.00				
38.00	8.85	5.45	0.00				
39.00	8.85	5.45	0.00				
40.00	8.85	5.45	0.00				
41.00	8.85	5.45	0.00				
42.00	8.85	5.45	0.00				
43.00	8.85	5.45	0.00				
44.00	8.85	5.45	0.00				
45.00	8.85	5.45	0.00				
46.00	8.85	5.45	0.00				
47.00	8.85	5.45	0.00				
48.00	8.85	5.45	0.00				
49.00	8.85	5.45	0.00				
50.00	8.85	5.45	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX B: EX North Lot B

Runoff = 6.83 cfs @ 12.29 hrs, Volume= 0.780 af, Depth= 2.43"
 Routed to Link EX DP B : EX Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.523	98	Impervious
2.813	32	Woods/grass comb., Good, HSG A
0.511	79	Woods/grass comb., Good, HSG D
3.847	47	Weighted Average
3.324		86.40% Pervious Area
0.523		13.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
4.9	269	0.0335	0.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.7	307	0.1400	1.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
18.8	676	Total			

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX B: EX North Lot B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	2.43	0.00
1.00	0.09	0.00	0.00	52.00	8.85	2.43	0.00
2.00	0.18	0.00	0.00	53.00	8.85	2.43	0.00
3.00	0.27	0.00	0.00	54.00	8.85	2.43	0.00
4.00	0.38	0.00	0.00	55.00	8.85	2.43	0.00
5.00	0.50	0.00	0.00	56.00	8.85	2.43	0.00
6.00	0.64	0.00	0.00	57.00	8.85	2.43	0.00
7.00	0.80	0.00	0.00	58.00	8.85	2.43	0.00
8.00	1.01	0.00	0.00	59.00	8.85	2.43	0.00
9.00	1.29	0.00	0.00	60.00	8.85	2.43	0.00
10.00	1.67	0.00	0.00	61.00	8.85	2.43	0.00
11.00	2.21	0.00	0.00	62.00	8.85	2.43	0.00
12.00	4.42	0.35	1.62	63.00	8.85	2.43	0.00
13.00	6.64	1.23	1.70	64.00	8.85	2.43	0.00
14.00	7.18	1.50	0.97	65.00	8.85	2.43	0.00
15.00	7.56	1.70	0.75	66.00	8.85	2.43	0.00
16.00	7.84	1.85	0.55	67.00	8.85	2.43	0.00
17.00	8.05	1.97	0.43	68.00	8.85	2.43	0.00
18.00	8.21	2.06	0.34	69.00	8.85	2.43	0.00
19.00	8.35	2.14	0.30	70.00	8.85	2.43	0.00
20.00	8.47	2.21	0.27	71.00	8.85	2.43	0.00
21.00	8.58	2.27	0.25	72.00	8.85	2.43	0.00
22.00	8.68	2.33	0.23				
23.00	8.77	2.39	0.20				
24.00	8.85	2.43	0.18				
25.00	8.85	2.43	0.00				
26.00	8.85	2.43	0.00				
27.00	8.85	2.43	0.00				
28.00	8.85	2.43	0.00				
29.00	8.85	2.43	0.00				
30.00	8.85	2.43	0.00				
31.00	8.85	2.43	0.00				
32.00	8.85	2.43	0.00				
33.00	8.85	2.43	0.00				
34.00	8.85	2.43	0.00				
35.00	8.85	2.43	0.00				
36.00	8.85	2.43	0.00				
37.00	8.85	2.43	0.00				
38.00	8.85	2.43	0.00				
39.00	8.85	2.43	0.00				
40.00	8.85	2.43	0.00				
41.00	8.85	2.43	0.00				
42.00	8.85	2.43	0.00				
43.00	8.85	2.43	0.00				
44.00	8.85	2.43	0.00				
45.00	8.85	2.43	0.00				
46.00	8.85	2.43	0.00				
47.00	8.85	2.43	0.00				
48.00	8.85	2.43	0.00				
49.00	8.85	2.43	0.00				
50.00	8.85	2.43	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX C: EX North Lot C

Runoff = 1.00 cfs @ 12.19 hrs, Volume= 0.098 af, Depth= 2.32"
 Routed to Link EX DP C : EX Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.106	98	Impervious
0.403	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.509	46	Weighted Average
0.403		79.17% Pervious Area
0.106		20.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	48	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	35	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	174	Total			

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX C: EX North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	2.32	0.00
1.00	0.09	0.00	0.00	52.00	8.85	2.32	0.00
2.00	0.18	0.00	0.00	53.00	8.85	2.32	0.00
3.00	0.27	0.00	0.00	54.00	8.85	2.32	0.00
4.00	0.38	0.00	0.00	55.00	8.85	2.32	0.00
5.00	0.50	0.00	0.00	56.00	8.85	2.32	0.00
6.00	0.64	0.00	0.00	57.00	8.85	2.32	0.00
7.00	0.80	0.00	0.00	58.00	8.85	2.32	0.00
8.00	1.01	0.00	0.00	59.00	8.85	2.32	0.00
9.00	1.29	0.00	0.00	60.00	8.85	2.32	0.00
10.00	1.67	0.00	0.00	61.00	8.85	2.32	0.00
11.00	2.21	0.00	0.00	62.00	8.85	2.32	0.00
12.00	4.42	0.31	0.32	63.00	8.85	2.32	0.00
13.00	6.64	1.15	0.19	64.00	8.85	2.32	0.00
14.00	7.18	1.41	0.12	65.00	8.85	2.32	0.00
15.00	7.56	1.60	0.09	66.00	8.85	2.32	0.00
16.00	7.84	1.75	0.07	67.00	8.85	2.32	0.00
17.00	8.05	1.86	0.05	68.00	8.85	2.32	0.00
18.00	8.21	1.95	0.04	69.00	8.85	2.32	0.00
19.00	8.35	2.03	0.04	70.00	8.85	2.32	0.00
20.00	8.47	2.10	0.03	71.00	8.85	2.32	0.00
21.00	8.58	2.16	0.03	72.00	8.85	2.32	0.00
22.00	8.68	2.22	0.03				
23.00	8.77	2.27	0.03				
24.00	8.85	2.32	0.02				
25.00	8.85	2.32	0.00				
26.00	8.85	2.32	0.00				
27.00	8.85	2.32	0.00				
28.00	8.85	2.32	0.00				
29.00	8.85	2.32	0.00				
30.00	8.85	2.32	0.00				
31.00	8.85	2.32	0.00				
32.00	8.85	2.32	0.00				
33.00	8.85	2.32	0.00				
34.00	8.85	2.32	0.00				
35.00	8.85	2.32	0.00				
36.00	8.85	2.32	0.00				
37.00	8.85	2.32	0.00				
38.00	8.85	2.32	0.00				
39.00	8.85	2.32	0.00				
40.00	8.85	2.32	0.00				
41.00	8.85	2.32	0.00				
42.00	8.85	2.32	0.00				
43.00	8.85	2.32	0.00				
44.00	8.85	2.32	0.00				
45.00	8.85	2.32	0.00				
46.00	8.85	2.32	0.00				
47.00	8.85	2.32	0.00				
48.00	8.85	2.32	0.00				
49.00	8.85	2.32	0.00				
50.00	8.85	2.32	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX D1: EX Jordan West

Runoff = 1.88 cfs @ 12.15 hrs, Volume= 0.158 af, Depth= 4.35"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.167	98	Impervious
0.214	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.435	63	Weighted Average
0.268		61.61% Pervious Area
0.167		38.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	32	0.0160	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
1.1	184	0.0190	2.80		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.5	216	Total			

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX D1: EX Jordan West

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	4.35	0.00
1.00	0.09	0.00	0.00	52.00	8.85	4.35	0.00
2.00	0.18	0.00	0.00	53.00	8.85	4.35	0.00
3.00	0.27	0.00	0.00	54.00	8.85	4.35	0.00
4.00	0.38	0.00	0.00	55.00	8.85	4.35	0.00
5.00	0.50	0.00	0.00	56.00	8.85	4.35	0.00
6.00	0.64	0.00	0.00	57.00	8.85	4.35	0.00
7.00	0.80	0.00	0.00	58.00	8.85	4.35	0.00
8.00	1.01	0.00	0.00	59.00	8.85	4.35	0.00
9.00	1.29	0.00	0.00	60.00	8.85	4.35	0.00
10.00	1.67	0.04	0.02	61.00	8.85	4.35	0.00
11.00	2.21	0.16	0.07	62.00	8.85	4.35	0.00
12.00	4.42	1.16	0.86	63.00	8.85	4.35	0.00
13.00	6.64	2.63	0.25	64.00	8.85	4.35	0.00
14.00	7.18	3.03	0.15	65.00	8.85	4.35	0.00
15.00	7.56	3.33	0.12	66.00	8.85	4.35	0.00
16.00	7.84	3.54	0.08	67.00	8.85	4.35	0.00
17.00	8.05	3.71	0.07	68.00	8.85	4.35	0.00
18.00	8.21	3.84	0.05	69.00	8.85	4.35	0.00
19.00	8.35	3.94	0.05	70.00	8.85	4.35	0.00
20.00	8.47	4.04	0.04	71.00	8.85	4.35	0.00
21.00	8.58	4.13	0.04	72.00	8.85	4.35	0.00
22.00	8.68	4.21	0.03				
23.00	8.77	4.28	0.03				
24.00	8.85	4.35	0.03				
25.00	8.85	4.35	0.00				
26.00	8.85	4.35	0.00				
27.00	8.85	4.35	0.00				
28.00	8.85	4.35	0.00				
29.00	8.85	4.35	0.00				
30.00	8.85	4.35	0.00				
31.00	8.85	4.35	0.00				
32.00	8.85	4.35	0.00				
33.00	8.85	4.35	0.00				
34.00	8.85	4.35	0.00				
35.00	8.85	4.35	0.00				
36.00	8.85	4.35	0.00				
37.00	8.85	4.35	0.00				
38.00	8.85	4.35	0.00				
39.00	8.85	4.35	0.00				
40.00	8.85	4.35	0.00				
41.00	8.85	4.35	0.00				
42.00	8.85	4.35	0.00				
43.00	8.85	4.35	0.00				
44.00	8.85	4.35	0.00				
45.00	8.85	4.35	0.00				
46.00	8.85	4.35	0.00				
47.00	8.85	4.35	0.00				
48.00	8.85	4.35	0.00				
49.00	8.85	4.35	0.00				
50.00	8.85	4.35	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX D2: EX Front Yard

Runoff = 2.99 cfs @ 12.15 hrs, Volume= 0.246 af, Depth= 5.08"
 Routed to Link EX DP D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.112	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.303	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	69	Weighted Average
0.470		80.76% Pervious Area
0.112		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.5	221	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	54	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.1	333	Total			

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX D2: EX Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	5.08	0.00
1.00	0.09	0.00	0.00	52.00	8.85	5.08	0.00
2.00	0.18	0.00	0.00	53.00	8.85	5.08	0.00
3.00	0.27	0.00	0.00	54.00	8.85	5.08	0.00
4.00	0.38	0.00	0.00	55.00	8.85	5.08	0.00
5.00	0.50	0.00	0.00	56.00	8.85	5.08	0.00
6.00	0.64	0.00	0.00	57.00	8.85	5.08	0.00
7.00	0.80	0.00	0.00	58.00	8.85	5.08	0.00
8.00	1.01	0.00	0.00	59.00	8.85	5.08	0.00
9.00	1.29	0.03	0.03	60.00	8.85	5.08	0.00
10.00	1.67	0.11	0.06	61.00	8.85	5.08	0.00
11.00	2.21	0.30	0.14	62.00	8.85	5.08	0.00
12.00	4.42	1.55	1.45	63.00	8.85	5.08	0.00
13.00	6.64	3.22	0.36	64.00	8.85	5.08	0.00
14.00	7.18	3.66	0.23	65.00	8.85	5.08	0.00
15.00	7.56	3.98	0.17	66.00	8.85	5.08	0.00
16.00	7.84	4.21	0.12	67.00	8.85	5.08	0.00
17.00	8.05	4.39	0.10	68.00	8.85	5.08	0.00
18.00	8.21	4.53	0.07	69.00	8.85	5.08	0.00
19.00	8.35	4.65	0.07	70.00	8.85	5.08	0.00
20.00	8.47	4.75	0.06	71.00	8.85	5.08	0.00
21.00	8.58	4.85	0.05	72.00	8.85	5.08	0.00
22.00	8.68	4.93	0.05				
23.00	8.77	5.01	0.04				
24.00	8.85	5.08	0.04				
25.00	8.85	5.08	0.00				
26.00	8.85	5.08	0.00				
27.00	8.85	5.08	0.00				
28.00	8.85	5.08	0.00				
29.00	8.85	5.08	0.00				
30.00	8.85	5.08	0.00				
31.00	8.85	5.08	0.00				
32.00	8.85	5.08	0.00				
33.00	8.85	5.08	0.00				
34.00	8.85	5.08	0.00				
35.00	8.85	5.08	0.00				
36.00	8.85	5.08	0.00				
37.00	8.85	5.08	0.00				
38.00	8.85	5.08	0.00				
39.00	8.85	5.08	0.00				
40.00	8.85	5.08	0.00				
41.00	8.85	5.08	0.00				
42.00	8.85	5.08	0.00				
43.00	8.85	5.08	0.00				
44.00	8.85	5.08	0.00				
45.00	8.85	5.08	0.00				
46.00	8.85	5.08	0.00				
47.00	8.85	5.08	0.00				
48.00	8.85	5.08	0.00				
49.00	8.85	5.08	0.00				
50.00	8.85	5.08	0.00				

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX E1: EX Athletic Lot

Runoff = 0.42 cfs @ 12.20 hrs, Volume= 0.045 af, Depth= 1.86"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.044	98	Impervious
0.149	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.097	32	Woods/grass comb., Good, HSG A
0.290	42	Weighted Average
0.246		84.83% Pervious Area
0.044		15.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0900	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX E1: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	1.86	0.00
1.00	0.09	0.00	0.00	52.00	8.85	1.86	0.00
2.00	0.18	0.00	0.00	53.00	8.85	1.86	0.00
3.00	0.27	0.00	0.00	54.00	8.85	1.86	0.00
4.00	0.38	0.00	0.00	55.00	8.85	1.86	0.00
5.00	0.50	0.00	0.00	56.00	8.85	1.86	0.00
6.00	0.64	0.00	0.00	57.00	8.85	1.86	0.00
7.00	0.80	0.00	0.00	58.00	8.85	1.86	0.00
8.00	1.01	0.00	0.00	59.00	8.85	1.86	0.00
9.00	1.29	0.00	0.00	60.00	8.85	1.86	0.00
10.00	1.67	0.00	0.00	61.00	8.85	1.86	0.00
11.00	2.21	0.00	0.00	62.00	8.85	1.86	0.00
12.00	4.42	0.18	0.11	63.00	8.85	1.86	0.00
13.00	6.64	0.85	0.09	64.00	8.85	1.86	0.00
14.00	7.18	1.07	0.06	65.00	8.85	1.86	0.00
15.00	7.56	1.24	0.05	66.00	8.85	1.86	0.00
16.00	7.84	1.37	0.03	67.00	8.85	1.86	0.00
17.00	8.05	1.46	0.03	68.00	8.85	1.86	0.00
18.00	8.21	1.54	0.02	69.00	8.85	1.86	0.00
19.00	8.35	1.61	0.02	70.00	8.85	1.86	0.00
20.00	8.47	1.67	0.02	71.00	8.85	1.86	0.00
21.00	8.58	1.72	0.02	72.00	8.85	1.86	0.00
22.00	8.68	1.78	0.01				
23.00	8.77	1.82	0.01				
24.00	8.85	1.86	0.01				
25.00	8.85	1.86	0.00				
26.00	8.85	1.86	0.00				
27.00	8.85	1.86	0.00				
28.00	8.85	1.86	0.00				
29.00	8.85	1.86	0.00				
30.00	8.85	1.86	0.00				
31.00	8.85	1.86	0.00				
32.00	8.85	1.86	0.00				
33.00	8.85	1.86	0.00				
34.00	8.85	1.86	0.00				
35.00	8.85	1.86	0.00				
36.00	8.85	1.86	0.00				
37.00	8.85	1.86	0.00				
38.00	8.85	1.86	0.00				
39.00	8.85	1.86	0.00				
40.00	8.85	1.86	0.00				
41.00	8.85	1.86	0.00				
42.00	8.85	1.86	0.00				
43.00	8.85	1.86	0.00				
44.00	8.85	1.86	0.00				
45.00	8.85	1.86	0.00				
46.00	8.85	1.86	0.00				
47.00	8.85	1.86	0.00				
48.00	8.85	1.86	0.00				
49.00	8.85	1.86	0.00				
50.00	8.85	1.86	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX E2: EX Athletic Lot

Runoff = 1.32 cfs @ 12.09 hrs, Volume= 0.100 af, Depth= 6.91"
 Routed to Link EX DP E : Existing Stormwater BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.137	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.036	32	Woods/grass comb., Good, HSG A
0.173	84	Weighted Average
0.036		20.81% Pervious Area
0.137		79.19% Impervious Area

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

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX E2: EX Athletic Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	6.91	0.00
1.00	0.09	0.00	0.00	52.00	8.85	6.91	0.00
2.00	0.18	0.00	0.00	53.00	8.85	6.91	0.00
3.00	0.27	0.00	0.00	54.00	8.85	6.91	0.00
4.00	0.38	0.00	0.00	55.00	8.85	6.91	0.00
5.00	0.50	0.01	0.00	56.00	8.85	6.91	0.00
6.00	0.64	0.03	0.01	57.00	8.85	6.91	0.00
7.00	0.80	0.08	0.01	58.00	8.85	6.91	0.00
8.00	1.01	0.16	0.02	59.00	8.85	6.91	0.00
9.00	1.29	0.29	0.03	60.00	8.85	6.91	0.00
10.00	1.67	0.52	0.05	61.00	8.85	6.91	0.00
11.00	2.21	0.90	0.08	62.00	8.85	6.91	0.00
12.00	4.42	2.75	0.84	63.00	8.85	6.91	0.00
13.00	6.64	4.80	0.12	64.00	8.85	6.91	0.00
14.00	7.18	5.31	0.08	65.00	8.85	6.91	0.00
15.00	7.56	5.67	0.06	66.00	8.85	6.91	0.00
16.00	7.84	5.94	0.04	67.00	8.85	6.91	0.00
17.00	8.05	6.14	0.03	68.00	8.85	6.91	0.00
18.00	8.21	6.30	0.02	69.00	8.85	6.91	0.00
19.00	8.35	6.43	0.02	70.00	8.85	6.91	0.00
20.00	8.47	6.55	0.02	71.00	8.85	6.91	0.00
21.00	8.58	6.65	0.02	72.00	8.85	6.91	0.00
22.00	8.68	6.75	0.02				
23.00	8.77	6.84	0.01				
24.00	8.85	6.91	0.01				
25.00	8.85	6.91	0.00				
26.00	8.85	6.91	0.00				
27.00	8.85	6.91	0.00				
28.00	8.85	6.91	0.00				
29.00	8.85	6.91	0.00				
30.00	8.85	6.91	0.00				
31.00	8.85	6.91	0.00				
32.00	8.85	6.91	0.00				
33.00	8.85	6.91	0.00				
34.00	8.85	6.91	0.00				
35.00	8.85	6.91	0.00				
36.00	8.85	6.91	0.00				
37.00	8.85	6.91	0.00				
38.00	8.85	6.91	0.00				
39.00	8.85	6.91	0.00				
40.00	8.85	6.91	0.00				
41.00	8.85	6.91	0.00				
42.00	8.85	6.91	0.00				
43.00	8.85	6.91	0.00				
44.00	8.85	6.91	0.00				
45.00	8.85	6.91	0.00				
46.00	8.85	6.91	0.00				
47.00	8.85	6.91	0.00				
48.00	8.85	6.91	0.00				
49.00	8.85	6.91	0.00				
50.00	8.85	6.91	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment EX F: EX Upper Lot

Runoff = 4.38 cfs @ 12.09 hrs, Volume= 0.334 af, Depth= 7.16"
 Routed to Link EX DP F : Existing Drainage Network

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.372	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.116	79	Woods/grass comb., Good, HSG D
0.072	32	Woods/grass comb., Good, HSG A
0.560	86	Weighted Average
0.188		33.57% Pervious Area
0.372		66.43% Impervious Area

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

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment EX F: EX Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	7.16	0.00
1.00	0.09	0.00	0.00	52.00	8.85	7.16	0.00
2.00	0.18	0.00	0.00	53.00	8.85	7.16	0.00
3.00	0.27	0.00	0.00	54.00	8.85	7.16	0.00
4.00	0.38	0.00	0.00	55.00	8.85	7.16	0.00
5.00	0.50	0.02	0.01	56.00	8.85	7.16	0.00
6.00	0.64	0.05	0.02	57.00	8.85	7.16	0.00
7.00	0.80	0.11	0.04	58.00	8.85	7.16	0.00
8.00	1.01	0.20	0.06	59.00	8.85	7.16	0.00
9.00	1.29	0.36	0.11	60.00	8.85	7.16	0.00
10.00	1.67	0.61	0.17	61.00	8.85	7.16	0.00
11.00	2.21	1.01	0.28	62.00	8.85	7.16	0.00
12.00	4.42	2.93	2.79	63.00	8.85	7.16	0.00
13.00	6.64	5.02	0.39	64.00	8.85	7.16	0.00
14.00	7.18	5.54	0.25	65.00	8.85	7.16	0.00
15.00	7.56	5.91	0.19	66.00	8.85	7.16	0.00
16.00	7.84	6.18	0.13	67.00	8.85	7.16	0.00
17.00	8.05	6.38	0.10	68.00	8.85	7.16	0.00
18.00	8.21	6.54	0.08	69.00	8.85	7.16	0.00
19.00	8.35	6.67	0.07	70.00	8.85	7.16	0.00
20.00	8.47	6.79	0.06	71.00	8.85	7.16	0.00
21.00	8.58	6.89	0.06	72.00	8.85	7.16	0.00
22.00	8.68	6.99	0.05				
23.00	8.77	7.08	0.05				
24.00	8.85	7.16	0.04				
25.00	8.85	7.16	0.00				
26.00	8.85	7.16	0.00				
27.00	8.85	7.16	0.00				
28.00	8.85	7.16	0.00				
29.00	8.85	7.16	0.00				
30.00	8.85	7.16	0.00				
31.00	8.85	7.16	0.00				
32.00	8.85	7.16	0.00				
33.00	8.85	7.16	0.00				
34.00	8.85	7.16	0.00				
35.00	8.85	7.16	0.00				
36.00	8.85	7.16	0.00				
37.00	8.85	7.16	0.00				
38.00	8.85	7.16	0.00				
39.00	8.85	7.16	0.00				
40.00	8.85	7.16	0.00				
41.00	8.85	7.16	0.00				
42.00	8.85	7.16	0.00				
43.00	8.85	7.16	0.00				
44.00	8.85	7.16	0.00				
45.00	8.85	7.16	0.00				
46.00	8.85	7.16	0.00				
47.00	8.85	7.16	0.00				
48.00	8.85	7.16	0.00				
49.00	8.85	7.16	0.00				
50.00	8.85	7.16	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link EX DP A: EX Park Ave

Inflow Area = 1.826 ac, 10.95% Impervious, Inflow Depth = 5.45" for 100-yr 24-hr event
Inflow = 8.24 cfs @ 12.24 hrs, Volume= 0.829 af
Primary = 8.24 cfs @ 12.24 hrs, Volume= 0.829 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link EX DP A: EX Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.03	0.00	0.03	59.00	0.00	0.00	0.00
9.00	0.11	0.00	0.11	60.00	0.00	0.00	0.00
10.00	0.23	0.00	0.23	61.00	0.00	0.00	0.00
11.00	0.47	0.00	0.47	62.00	0.00	0.00	0.00
12.00	3.38	0.00	3.38	63.00	0.00	0.00	0.00
13.00	1.40	0.00	1.40	64.00	0.00	0.00	0.00
14.00	0.77	0.00	0.77	65.00	0.00	0.00	0.00
15.00	0.57	0.00	0.57	66.00	0.00	0.00	0.00
16.00	0.41	0.00	0.41	67.00	0.00	0.00	0.00
17.00	0.32	0.00	0.32	68.00	0.00	0.00	0.00
18.00	0.25	0.00	0.25	69.00	0.00	0.00	0.00
19.00	0.21	0.00	0.21	70.00	0.00	0.00	0.00
20.00	0.19	0.00	0.19	71.00	0.00	0.00	0.00
21.00	0.18	0.00	0.18	72.00	0.00	0.00	0.00
22.00	0.16	0.00	0.16				
23.00	0.14	0.00	0.14				
24.00	0.13	0.00	0.13				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link EX DP B: EX Wetlands

Inflow Area = 3.847 ac, 13.60% Impervious, Inflow Depth = 2.43" for 100-yr 24-hr event
Inflow = 6.83 cfs @ 12.29 hrs, Volume= 0.780 af
Primary = 6.83 cfs @ 12.29 hrs, Volume= 0.780 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link EX DP B: EX Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	1.62	0.00	1.62	63.00	0.00	0.00	0.00
13.00	1.70	0.00	1.70	64.00	0.00	0.00	0.00
14.00	0.97	0.00	0.97	65.00	0.00	0.00	0.00
15.00	0.75	0.00	0.75	66.00	0.00	0.00	0.00
16.00	0.55	0.00	0.55	67.00	0.00	0.00	0.00
17.00	0.43	0.00	0.43	68.00	0.00	0.00	0.00
18.00	0.34	0.00	0.34	69.00	0.00	0.00	0.00
19.00	0.30	0.00	0.30	70.00	0.00	0.00	0.00
20.00	0.27	0.00	0.27	71.00	0.00	0.00	0.00
21.00	0.25	0.00	0.25	72.00	0.00	0.00	0.00
22.00	0.23	0.00	0.23				
23.00	0.20	0.00	0.20				
24.00	0.18	0.00	0.18				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link EX DP C: EX Prospect St

Inflow Area = 0.509 ac, 20.83% Impervious, Inflow Depth = 2.32" for 100-yr 24-hr event
Inflow = 1.00 cfs @ 12.19 hrs, Volume= 0.098 af
Primary = 1.00 cfs @ 12.19 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link EX DP C: EX Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.32	0.00	0.32	63.00	0.00	0.00	0.00
13.00	0.19	0.00	0.19	64.00	0.00	0.00	0.00
14.00	0.12	0.00	0.12	65.00	0.00	0.00	0.00
15.00	0.09	0.00	0.09	66.00	0.00	0.00	0.00
16.00	0.07	0.00	0.07	67.00	0.00	0.00	0.00
17.00	0.05	0.00	0.05	68.00	0.00	0.00	0.00
18.00	0.04	0.00	0.04	69.00	0.00	0.00	0.00
19.00	0.04	0.00	0.04	70.00	0.00	0.00	0.00
20.00	0.03	0.00	0.03	71.00	0.00	0.00	0.00
21.00	0.03	0.00	0.03	72.00	0.00	0.00	0.00
22.00	0.03	0.00	0.03				
23.00	0.03	0.00	0.03				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link EX DP D: Marsh Street CBs

Inflow Area = 1.017 ac, 27.43% Impervious, Inflow Depth = 4.77" for 100-yr 24-hr event
Inflow = 4.87 cfs @ 12.15 hrs, Volume= 0.404 af
Primary = 4.87 cfs @ 12.15 hrs, Volume= 0.404 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link EX DP D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.03	0.00	0.03	60.00	0.00	0.00	0.00
10.00	0.09	0.00	0.09	61.00	0.00	0.00	0.00
11.00	0.21	0.00	0.21	62.00	0.00	0.00	0.00
12.00	2.31	0.00	2.31	63.00	0.00	0.00	0.00
13.00	0.61	0.00	0.61	64.00	0.00	0.00	0.00
14.00	0.38	0.00	0.38	65.00	0.00	0.00	0.00
15.00	0.29	0.00	0.29	66.00	0.00	0.00	0.00
16.00	0.21	0.00	0.21	67.00	0.00	0.00	0.00
17.00	0.16	0.00	0.16	68.00	0.00	0.00	0.00
18.00	0.13	0.00	0.13	69.00	0.00	0.00	0.00
19.00	0.11	0.00	0.11	70.00	0.00	0.00	0.00
20.00	0.10	0.00	0.10	71.00	0.00	0.00	0.00
21.00	0.09	0.00	0.09	72.00	0.00	0.00	0.00
22.00	0.08	0.00	0.08				
23.00	0.07	0.00	0.07				
24.00	0.07	0.00	0.07				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link EX DP E: Existing Stormwater BMP

Inflow Area = 0.463 ac, 39.09% Impervious, Inflow Depth = 3.75" for 100-yr 24-hr event
Inflow = 1.62 cfs @ 12.10 hrs, Volume= 0.145 af
Primary = 1.62 cfs @ 12.10 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min
Routed to Link EX DP F : Existing Drainage Network

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

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Belmont Hill School - Existing

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link EX DP E: Existing Stormwater BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.01	0.00	0.01	57.00	0.00	0.00	0.00
7.00	0.01	0.00	0.01	58.00	0.00	0.00	0.00
8.00	0.02	0.00	0.02	59.00	0.00	0.00	0.00
9.00	0.03	0.00	0.03	60.00	0.00	0.00	0.00
10.00	0.05	0.00	0.05	61.00	0.00	0.00	0.00
11.00	0.08	0.00	0.08	62.00	0.00	0.00	0.00
12.00	0.94	0.00	0.94	63.00	0.00	0.00	0.00
13.00	0.21	0.00	0.21	64.00	0.00	0.00	0.00
14.00	0.13	0.00	0.13	65.00	0.00	0.00	0.00
15.00	0.10	0.00	0.10	66.00	0.00	0.00	0.00
16.00	0.07	0.00	0.07	67.00	0.00	0.00	0.00
17.00	0.06	0.00	0.06	68.00	0.00	0.00	0.00
18.00	0.05	0.00	0.05	69.00	0.00	0.00	0.00
19.00	0.04	0.00	0.04	70.00	0.00	0.00	0.00
20.00	0.04	0.00	0.04	71.00	0.00	0.00	0.00
21.00	0.03	0.00	0.03	72.00	0.00	0.00	0.00
22.00	0.03	0.00	0.03				
23.00	0.03	0.00	0.03				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link EX DP F: Existing Drainage Network

Inflow Area = 2.040 ac, 40.78% Impervious, Inflow Depth = 5.19" for 100-yr 24-hr event
Inflow = 10.46 cfs @ 12.11 hrs, Volume= 0.883 af
Primary = 10.46 cfs @ 12.11 hrs, Volume= 0.883 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Belmont Hill School - Existing Conditions

Belmont Hill School - Existing
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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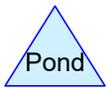
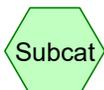
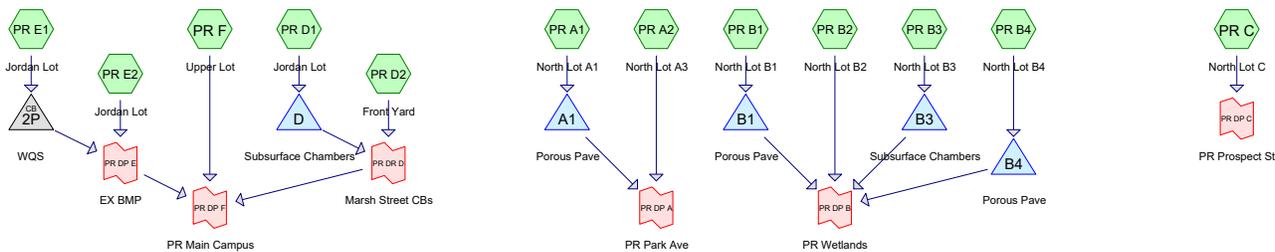
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Hydrograph for Link EX DP F: Existing Drainage Network

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.01	0.00	0.01	56.00	0.00	0.00	0.00
6.00	0.03	0.00	0.03	57.00	0.00	0.00	0.00
7.00	0.05	0.00	0.05	58.00	0.00	0.00	0.00
8.00	0.08	0.00	0.08	59.00	0.00	0.00	0.00
9.00	0.17	0.00	0.17	60.00	0.00	0.00	0.00
10.00	0.30	0.00	0.30	61.00	0.00	0.00	0.00
11.00	0.56	0.00	0.56	62.00	0.00	0.00	0.00
12.00	6.04	0.00	6.04	63.00	0.00	0.00	0.00
13.00	1.21	0.00	1.21	64.00	0.00	0.00	0.00
14.00	0.76	0.00	0.76	65.00	0.00	0.00	0.00
15.00	0.58	0.00	0.58	66.00	0.00	0.00	0.00
16.00	0.41	0.00	0.41	67.00	0.00	0.00	0.00
17.00	0.33	0.00	0.33	68.00	0.00	0.00	0.00
18.00	0.25	0.00	0.25	69.00	0.00	0.00	0.00
19.00	0.22	0.00	0.22	70.00	0.00	0.00	0.00
20.00	0.20	0.00	0.20	71.00	0.00	0.00	0.00
21.00	0.18	0.00	0.18	72.00	0.00	0.00	0.00
22.00	0.17	0.00	0.17				
23.00	0.15	0.00	0.15				
24.00	0.13	0.00	0.13				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

APPENDIX C

Proposed Stormwater Discharge Calculations



Routing Diagram for Belmont Hill School - Proposed Conditions
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Belmont Hill School - Proposed Conditions

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.179	98	Impervious (PR A2, PR B1, PR B2, PR B3, PR C, PR D1, PR D2, PR E1, PR E2, PR F)
0.185	70	Perm pavement w/out storage (PR A2, PR B4)
1.072	98	Permeable Pavement (PR A1, PR B1)
3.012	32	Woods/grass comb., Good, HSG A (PR A2, PR B1, PR B2, PR C, PR D1, PR D2, PR E1, PR E2, PR F)
1.774	79	Woods/grass comb., Good, HSG D (PR A2, PR B1, PR B2, PR D1, PR D2, PR F)
8.222	69	TOTAL AREA

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR A1: North Lot A1

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 2.99"
Routed to Pond A1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.225	98	Permeable Pavement
0.225		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR A1: North Lot A1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	2.99	0.00
1.00	0.03	0.00	0.00	52.00	3.22	2.99	0.00
2.00	0.06	0.00	0.00	53.00	3.22	2.99	0.00
3.00	0.10	0.01	0.00	54.00	3.22	2.99	0.00
4.00	0.14	0.03	0.00	55.00	3.22	2.99	0.00
5.00	0.18	0.06	0.01	56.00	3.22	2.99	0.00
6.00	0.23	0.09	0.01	57.00	3.22	2.99	0.00
7.00	0.29	0.14	0.01	58.00	3.22	2.99	0.00
8.00	0.37	0.20	0.02	59.00	3.22	2.99	0.00
9.00	0.47	0.29	0.02	60.00	3.22	2.99	0.00
10.00	0.61	0.42	0.03	61.00	3.22	2.99	0.00
11.00	0.80	0.60	0.05	62.00	3.22	2.99	0.00
12.00	1.61	1.39	0.45	63.00	3.22	2.99	0.00
13.00	2.41	2.19	0.06	64.00	3.22	2.99	0.00
14.00	2.61	2.38	0.04	65.00	3.22	2.99	0.00
15.00	2.75	2.52	0.03	66.00	3.22	2.99	0.00
16.00	2.85	2.62	0.02	67.00	3.22	2.99	0.00
17.00	2.93	2.70	0.02	68.00	3.22	2.99	0.00
18.00	2.99	2.76	0.01	69.00	3.22	2.99	0.00
19.00	3.04	2.81	0.01	70.00	3.22	2.99	0.00
20.00	3.08	2.85	0.01	71.00	3.22	2.99	0.00
21.00	3.12	2.89	0.01	72.00	3.22	2.99	0.00
22.00	3.16	2.93	0.01				
23.00	3.19	2.96	0.01				
24.00	3.22	2.99	0.01				
25.00	3.22	2.99	0.00				
26.00	3.22	2.99	0.00				
27.00	3.22	2.99	0.00				
28.00	3.22	2.99	0.00				
29.00	3.22	2.99	0.00				
30.00	3.22	2.99	0.00				
31.00	3.22	2.99	0.00				
32.00	3.22	2.99	0.00				
33.00	3.22	2.99	0.00				
34.00	3.22	2.99	0.00				
35.00	3.22	2.99	0.00				
36.00	3.22	2.99	0.00				
37.00	3.22	2.99	0.00				
38.00	3.22	2.99	0.00				
39.00	3.22	2.99	0.00				
40.00	3.22	2.99	0.00				
41.00	3.22	2.99	0.00				
42.00	3.22	2.99	0.00				
43.00	3.22	2.99	0.00				
44.00	3.22	2.99	0.00				
45.00	3.22	2.99	0.00				
46.00	3.22	2.99	0.00				
47.00	3.22	2.99	0.00				
48.00	3.22	2.99	0.00				
49.00	3.22	2.99	0.00				
50.00	3.22	2.99	0.00				

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR A2: North Lot A3

Runoff = 1.30 cfs @ 12.25 hrs, Volume= 0.137 af, Depth= 1.00"
 Routed to Link PR DP A : PR Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.287	98	Impervious
* 0.042	70	Perm pavement w/out storage
0.322	32	Woods/grass comb., Good, HSG A
0.999	79	Woods/grass comb., Good, HSG D
1.650	73	Weighted Average
1.363		82.61% Pervious Area
0.287		17.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
2.2	130	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
16.5	240	Total			

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Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR A2: North Lot A3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	1.00	0.00
1.00	0.03	0.00	0.00	52.00	3.22	1.00	0.00
2.00	0.06	0.00	0.00	53.00	3.22	1.00	0.00
3.00	0.10	0.00	0.00	54.00	3.22	1.00	0.00
4.00	0.14	0.00	0.00	55.00	3.22	1.00	0.00
5.00	0.18	0.00	0.00	56.00	3.22	1.00	0.00
6.00	0.23	0.00	0.00	57.00	3.22	1.00	0.00
7.00	0.29	0.00	0.00	58.00	3.22	1.00	0.00
8.00	0.37	0.00	0.00	59.00	3.22	1.00	0.00
9.00	0.47	0.00	0.00	60.00	3.22	1.00	0.00
10.00	0.61	0.00	0.00	61.00	3.22	1.00	0.00
11.00	0.80	0.00	0.00	62.00	3.22	1.00	0.00
12.00	1.61	0.17	0.38	63.00	3.22	1.00	0.00
13.00	2.41	0.52	0.27	64.00	3.22	1.00	0.00
14.00	2.61	0.63	0.16	65.00	3.22	1.00	0.00
15.00	2.75	0.71	0.12	66.00	3.22	1.00	0.00
16.00	2.85	0.77	0.09	67.00	3.22	1.00	0.00
17.00	2.93	0.81	0.07	68.00	3.22	1.00	0.00
18.00	2.99	0.85	0.06	69.00	3.22	1.00	0.00
19.00	3.04	0.88	0.05	70.00	3.22	1.00	0.00
20.00	3.08	0.91	0.04	71.00	3.22	1.00	0.00
21.00	3.12	0.93	0.04	72.00	3.22	1.00	0.00
22.00	3.16	0.96	0.04				
23.00	3.19	0.98	0.03				
24.00	3.22	1.00	0.03				
25.00	3.22	1.00	0.00				
26.00	3.22	1.00	0.00				
27.00	3.22	1.00	0.00				
28.00	3.22	1.00	0.00				
29.00	3.22	1.00	0.00				
30.00	3.22	1.00	0.00				
31.00	3.22	1.00	0.00				
32.00	3.22	1.00	0.00				
33.00	3.22	1.00	0.00				
34.00	3.22	1.00	0.00				
35.00	3.22	1.00	0.00				
36.00	3.22	1.00	0.00				
37.00	3.22	1.00	0.00				
38.00	3.22	1.00	0.00				
39.00	3.22	1.00	0.00				
40.00	3.22	1.00	0.00				
41.00	3.22	1.00	0.00				
42.00	3.22	1.00	0.00				
43.00	3.22	1.00	0.00				
44.00	3.22	1.00	0.00				
45.00	3.22	1.00	0.00				
46.00	3.22	1.00	0.00				
47.00	3.22	1.00	0.00				
48.00	3.22	1.00	0.00				
49.00	3.22	1.00	0.00				
50.00	3.22	1.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR B1: North Lot B1

Runoff = 2.85 cfs @ 12.09 hrs, Volume= 0.208 af, Depth= 2.01"
Routed to Pond B1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.034	98	Impervious
* 0.847	98	Permeable Pavement
0.123	32	Woods/grass comb., Good, HSG A
0.234	79	Woods/grass comb., Good, HSG D
1.238	88	Weighted Average
0.357		28.84% Pervious Area
0.881		71.16% Impervious Area

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

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR B1: North Lot B1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	2.01	0.00
1.00	0.03	0.00	0.00	52.00	3.22	2.01	0.00
2.00	0.06	0.00	0.00	53.00	3.22	2.01	0.00
3.00	0.10	0.00	0.00	54.00	3.22	2.01	0.00
4.00	0.14	0.00	0.00	55.00	3.22	2.01	0.00
5.00	0.18	0.00	0.00	56.00	3.22	2.01	0.00
6.00	0.23	0.00	0.00	57.00	3.22	2.01	0.00
7.00	0.29	0.00	0.00	58.00	3.22	2.01	0.00
8.00	0.37	0.01	0.01	59.00	3.22	2.01	0.00
9.00	0.47	0.02	0.03	60.00	3.22	2.01	0.00
10.00	0.61	0.07	0.07	61.00	3.22	2.01	0.00
11.00	0.80	0.15	0.13	62.00	3.22	2.01	0.00
12.00	1.61	0.66	1.74	63.00	3.22	2.01	0.00
13.00	2.41	1.31	0.28	64.00	3.22	2.01	0.00
14.00	2.61	1.48	0.18	65.00	3.22	2.01	0.00
15.00	2.75	1.60	0.14	66.00	3.22	2.01	0.00
16.00	2.85	1.69	0.10	67.00	3.22	2.01	0.00
17.00	2.93	1.75	0.08	68.00	3.22	2.01	0.00
18.00	2.99	1.81	0.06	69.00	3.22	2.01	0.00
19.00	3.04	1.85	0.05	70.00	3.22	2.01	0.00
20.00	3.08	1.89	0.05	71.00	3.22	2.01	0.00
21.00	3.12	1.93	0.04	72.00	3.22	2.01	0.00
22.00	3.16	1.96	0.04				
23.00	3.19	1.99	0.04				
24.00	3.22	2.01	0.03				
25.00	3.22	2.01	0.00				
26.00	3.22	2.01	0.00				
27.00	3.22	2.01	0.00				
28.00	3.22	2.01	0.00				
29.00	3.22	2.01	0.00				
30.00	3.22	2.01	0.00				
31.00	3.22	2.01	0.00				
32.00	3.22	2.01	0.00				
33.00	3.22	2.01	0.00				
34.00	3.22	2.01	0.00				
35.00	3.22	2.01	0.00				
36.00	3.22	2.01	0.00				
37.00	3.22	2.01	0.00				
38.00	3.22	2.01	0.00				
39.00	3.22	2.01	0.00				
40.00	3.22	2.01	0.00				
41.00	3.22	2.01	0.00				
42.00	3.22	2.01	0.00				
43.00	3.22	2.01	0.00				
44.00	3.22	2.01	0.00				
45.00	3.22	2.01	0.00				
46.00	3.22	2.01	0.00				
47.00	3.22	2.01	0.00				
48.00	3.22	2.01	0.00				
49.00	3.22	2.01	0.00				
50.00	3.22	2.01	0.00				

Belmont Hill School - Proposed Conditions

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Summary for Subcatchment PR B2: North Lot B2

Runoff = 0.00 cfs @ 21.46 hrs, Volume= 0.002 af, Depth= 0.01"
 Routed to Link PR DP B : PR Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.245	98	Impervious
1.655	32	Woods/grass comb., Good, HSG A
0.060	79	Woods/grass comb., Good, HSG D
1.960	42	Weighted Average
1.715		87.50% Pervious Area
0.245		12.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0300	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
1.6	110	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	162	0.0100	5.36	4.21	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, bends & connections
0.4	48	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.6	420	Total			

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR B2: North Lot B2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.01	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.01	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.01	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.01	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.01	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.01	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.01	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.01	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.01	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.01	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.01	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.01	0.00
12.00	1.61	0.00	0.00	63.00	3.22	0.01	0.00
13.00	2.41	0.00	0.00	64.00	3.22	0.01	0.00
14.00	2.61	0.00	0.00	65.00	3.22	0.01	0.00
15.00	2.75	0.00	0.00	66.00	3.22	0.01	0.00
16.00	2.85	0.00	0.00	67.00	3.22	0.01	0.00
17.00	2.93	0.00	0.00	68.00	3.22	0.01	0.00
18.00	2.99	0.00	0.00	69.00	3.22	0.01	0.00
19.00	3.04	0.01	0.00	70.00	3.22	0.01	0.00
20.00	3.08	0.01	0.00	71.00	3.22	0.01	0.00
21.00	3.12	0.01	0.00	72.00	3.22	0.01	0.00
22.00	3.16	0.01	0.00				
23.00	3.19	0.01	0.00				
24.00	3.22	0.01	0.00				
25.00	3.22	0.01	0.00				
26.00	3.22	0.01	0.00				
27.00	3.22	0.01	0.00				
28.00	3.22	0.01	0.00				
29.00	3.22	0.01	0.00				
30.00	3.22	0.01	0.00				
31.00	3.22	0.01	0.00				
32.00	3.22	0.01	0.00				
33.00	3.22	0.01	0.00				
34.00	3.22	0.01	0.00				
35.00	3.22	0.01	0.00				
36.00	3.22	0.01	0.00				
37.00	3.22	0.01	0.00				
38.00	3.22	0.01	0.00				
39.00	3.22	0.01	0.00				
40.00	3.22	0.01	0.00				
41.00	3.22	0.01	0.00				
42.00	3.22	0.01	0.00				
43.00	3.22	0.01	0.00				
44.00	3.22	0.01	0.00				
45.00	3.22	0.01	0.00				
46.00	3.22	0.01	0.00				
47.00	3.22	0.01	0.00				
48.00	3.22	0.01	0.00				
49.00	3.22	0.01	0.00				
50.00	3.22	0.01	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR B3: North Lot B3

Runoff = 1.45 cfs @ 12.09 hrs, Volume= 0.119 af, Depth= 2.99"
Routed to Pond B3 : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.476	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.476	98	Weighted Average
0.476		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR B3: North Lot B3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	2.99	0.00
1.00	0.03	0.00	0.00	52.00	3.22	2.99	0.00
2.00	0.06	0.00	0.00	53.00	3.22	2.99	0.00
3.00	0.10	0.01	0.01	54.00	3.22	2.99	0.00
4.00	0.14	0.03	0.01	55.00	3.22	2.99	0.00
5.00	0.18	0.06	0.01	56.00	3.22	2.99	0.00
6.00	0.23	0.09	0.02	57.00	3.22	2.99	0.00
7.00	0.29	0.14	0.03	58.00	3.22	2.99	0.00
8.00	0.37	0.20	0.03	59.00	3.22	2.99	0.00
9.00	0.47	0.29	0.05	60.00	3.22	2.99	0.00
10.00	0.61	0.42	0.07	61.00	3.22	2.99	0.00
11.00	0.80	0.60	0.10	62.00	3.22	2.99	0.00
12.00	1.61	1.39	0.94	63.00	3.22	2.99	0.00
13.00	2.41	2.19	0.13	64.00	3.22	2.99	0.00
14.00	2.61	2.38	0.08	65.00	3.22	2.99	0.00
15.00	2.75	2.52	0.06	66.00	3.22	2.99	0.00
16.00	2.85	2.62	0.04	67.00	3.22	2.99	0.00
17.00	2.93	2.70	0.03	68.00	3.22	2.99	0.00
18.00	2.99	2.76	0.03	69.00	3.22	2.99	0.00
19.00	3.04	2.81	0.02	70.00	3.22	2.99	0.00
20.00	3.08	2.85	0.02	71.00	3.22	2.99	0.00
21.00	3.12	2.89	0.02	72.00	3.22	2.99	0.00
22.00	3.16	2.93	0.02				
23.00	3.19	2.96	0.01				
24.00	3.22	2.99	0.01				
25.00	3.22	2.99	0.00				
26.00	3.22	2.99	0.00				
27.00	3.22	2.99	0.00				
28.00	3.22	2.99	0.00				
29.00	3.22	2.99	0.00				
30.00	3.22	2.99	0.00				
31.00	3.22	2.99	0.00				
32.00	3.22	2.99	0.00				
33.00	3.22	2.99	0.00				
34.00	3.22	2.99	0.00				
35.00	3.22	2.99	0.00				
36.00	3.22	2.99	0.00				
37.00	3.22	2.99	0.00				
38.00	3.22	2.99	0.00				
39.00	3.22	2.99	0.00				
40.00	3.22	2.99	0.00				
41.00	3.22	2.99	0.00				
42.00	3.22	2.99	0.00				
43.00	3.22	2.99	0.00				
44.00	3.22	2.99	0.00				
45.00	3.22	2.99	0.00				
46.00	3.22	2.99	0.00				
47.00	3.22	2.99	0.00				
48.00	3.22	2.99	0.00				
49.00	3.22	2.99	0.00				
50.00	3.22	2.99	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR B4: North Lot B4

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af, Depth= 0.84"
Routed to Pond B4 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.000	98	Impervious
* 0.143	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.143	70	Weighted Average
0.143		100.00% Pervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR B4: North Lot B4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.84	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.84	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.84	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.84	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.84	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.84	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.84	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.84	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.84	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.84	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.84	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.84	0.00
12.00	1.61	0.11	0.06	63.00	3.22	0.84	0.00
13.00	2.41	0.42	0.02	64.00	3.22	0.84	0.00
14.00	2.61	0.51	0.01	65.00	3.22	0.84	0.00
15.00	2.75	0.58	0.01	66.00	3.22	0.84	0.00
16.00	2.85	0.63	0.01	67.00	3.22	0.84	0.00
17.00	2.93	0.67	0.01	68.00	3.22	0.84	0.00
18.00	2.99	0.71	0.00	69.00	3.22	0.84	0.00
19.00	3.04	0.74	0.00	70.00	3.22	0.84	0.00
20.00	3.08	0.76	0.00	71.00	3.22	0.84	0.00
21.00	3.12	0.78	0.00	72.00	3.22	0.84	0.00
22.00	3.16	0.80	0.00				
23.00	3.19	0.82	0.00				
24.00	3.22	0.84	0.00				
25.00	3.22	0.84	0.00				
26.00	3.22	0.84	0.00				
27.00	3.22	0.84	0.00				
28.00	3.22	0.84	0.00				
29.00	3.22	0.84	0.00				
30.00	3.22	0.84	0.00				
31.00	3.22	0.84	0.00				
32.00	3.22	0.84	0.00				
33.00	3.22	0.84	0.00				
34.00	3.22	0.84	0.00				
35.00	3.22	0.84	0.00				
36.00	3.22	0.84	0.00				
37.00	3.22	0.84	0.00				
38.00	3.22	0.84	0.00				
39.00	3.22	0.84	0.00				
40.00	3.22	0.84	0.00				
41.00	3.22	0.84	0.00				
42.00	3.22	0.84	0.00				
43.00	3.22	0.84	0.00				
44.00	3.22	0.84	0.00				
45.00	3.22	0.84	0.00				
46.00	3.22	0.84	0.00				
47.00	3.22	0.84	0.00				
48.00	3.22	0.84	0.00				
49.00	3.22	0.84	0.00				
50.00	3.22	0.84	0.00				

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR C: North Lot C

Runoff = 0.00 cfs @ 15.73 hrs, Volume= 0.001 af, Depth= 0.03"
 Routed to Link PR DP C : PR Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.092	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.398	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.490	44	Weighted Average
0.398		81.22% Pervious Area
0.092		18.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	50	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	30	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	171	Total			

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR C: North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.03	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.03	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.03	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.03	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.03	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.03	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.03	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.03	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.03	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.03	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.03	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.03	0.00
12.00	1.61	0.00	0.00	63.00	3.22	0.03	0.00
13.00	2.41	0.00	0.00	64.00	3.22	0.03	0.00
14.00	2.61	0.00	0.00	65.00	3.22	0.03	0.00
15.00	2.75	0.00	0.00	66.00	3.22	0.03	0.00
16.00	2.85	0.01	0.00	67.00	3.22	0.03	0.00
17.00	2.93	0.01	0.00	68.00	3.22	0.03	0.00
18.00	2.99	0.01	0.00	69.00	3.22	0.03	0.00
19.00	3.04	0.02	0.00	70.00	3.22	0.03	0.00
20.00	3.08	0.02	0.00	71.00	3.22	0.03	0.00
21.00	3.12	0.02	0.00	72.00	3.22	0.03	0.00
22.00	3.16	0.03	0.00				
23.00	3.19	0.03	0.00				
24.00	3.22	0.03	0.00				
25.00	3.22	0.03	0.00				
26.00	3.22	0.03	0.00				
27.00	3.22	0.03	0.00				
28.00	3.22	0.03	0.00				
29.00	3.22	0.03	0.00				
30.00	3.22	0.03	0.00				
31.00	3.22	0.03	0.00				
32.00	3.22	0.03	0.00				
33.00	3.22	0.03	0.00				
34.00	3.22	0.03	0.00				
35.00	3.22	0.03	0.00				
36.00	3.22	0.03	0.00				
37.00	3.22	0.03	0.00				
38.00	3.22	0.03	0.00				
39.00	3.22	0.03	0.00				
40.00	3.22	0.03	0.00				
41.00	3.22	0.03	0.00				
42.00	3.22	0.03	0.00				
43.00	3.22	0.03	0.00				
44.00	3.22	0.03	0.00				
45.00	3.22	0.03	0.00				
46.00	3.22	0.03	0.00				
47.00	3.22	0.03	0.00				
48.00	3.22	0.03	0.00				
49.00	3.22	0.03	0.00				
50.00	3.22	0.03	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR D1: Jordan Lot

Runoff = 0.76 cfs @ 12.14 hrs, Volume= 0.063 af, Depth= 1.17"
Routed to Pond D : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.400	98	Impervious
0.199	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.653	76	Weighted Average
0.253		38.74% Pervious Area
0.400		61.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	24	0.0021	0.05		Sheet Flow, Grass: Short n= 0.150 P2= 3.22"
1.6	289	0.0225	3.04		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.3	313	Total			

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR D1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	1.17	0.00
1.00	0.03	0.00	0.00	52.00	3.22	1.17	0.00
2.00	0.06	0.00	0.00	53.00	3.22	1.17	0.00
3.00	0.10	0.00	0.00	54.00	3.22	1.17	0.00
4.00	0.14	0.00	0.00	55.00	3.22	1.17	0.00
5.00	0.18	0.00	0.00	56.00	3.22	1.17	0.00
6.00	0.23	0.00	0.00	57.00	3.22	1.17	0.00
7.00	0.29	0.00	0.00	58.00	3.22	1.17	0.00
8.00	0.37	0.00	0.00	59.00	3.22	1.17	0.00
9.00	0.47	0.00	0.00	60.00	3.22	1.17	0.00
10.00	0.61	0.00	0.00	61.00	3.22	1.17	0.00
11.00	0.80	0.01	0.01	62.00	3.22	1.17	0.00
12.00	1.61	0.23	0.33	63.00	3.22	1.17	0.00
13.00	2.41	0.64	0.11	64.00	3.22	1.17	0.00
14.00	2.61	0.76	0.07	65.00	3.22	1.17	0.00
15.00	2.75	0.85	0.05	66.00	3.22	1.17	0.00
16.00	2.85	0.92	0.04	67.00	3.22	1.17	0.00
17.00	2.93	0.97	0.03	68.00	3.22	1.17	0.00
18.00	2.99	1.01	0.02	69.00	3.22	1.17	0.00
19.00	3.04	1.04	0.02	70.00	3.22	1.17	0.00
20.00	3.08	1.07	0.02	71.00	3.22	1.17	0.00
21.00	3.12	1.10	0.02	72.00	3.22	1.17	0.00
22.00	3.16	1.12	0.02				
23.00	3.19	1.15	0.01				
24.00	3.22	1.17	0.01				
25.00	3.22	1.17	0.00				
26.00	3.22	1.17	0.00				
27.00	3.22	1.17	0.00				
28.00	3.22	1.17	0.00				
29.00	3.22	1.17	0.00				
30.00	3.22	1.17	0.00				
31.00	3.22	1.17	0.00				
32.00	3.22	1.17	0.00				
33.00	3.22	1.17	0.00				
34.00	3.22	1.17	0.00				
35.00	3.22	1.17	0.00				
36.00	3.22	1.17	0.00				
37.00	3.22	1.17	0.00				
38.00	3.22	1.17	0.00				
39.00	3.22	1.17	0.00				
40.00	3.22	1.17	0.00				
41.00	3.22	1.17	0.00				
42.00	3.22	1.17	0.00				
43.00	3.22	1.17	0.00				
44.00	3.22	1.17	0.00				
45.00	3.22	1.17	0.00				
46.00	3.22	1.17	0.00				
47.00	3.22	1.17	0.00				
48.00	3.22	1.17	0.00				
49.00	3.22	1.17	0.00				
50.00	3.22	1.17	0.00				

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
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Summary for Subcatchment PR D2: Front Yard

Runoff = 0.44 cfs @ 12.16 hrs, Volume= 0.041 af, Depth= 0.84"
 Routed to Link PR DR D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.123	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.292	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	70	Weighted Average
0.459		78.87% Pervious Area
0.123		21.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	75	0.0267	1.14		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.4	120	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.2	328	Total			

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR D2: Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	0.84	0.00
1.00	0.03	0.00	0.00	52.00	3.22	0.84	0.00
2.00	0.06	0.00	0.00	53.00	3.22	0.84	0.00
3.00	0.10	0.00	0.00	54.00	3.22	0.84	0.00
4.00	0.14	0.00	0.00	55.00	3.22	0.84	0.00
5.00	0.18	0.00	0.00	56.00	3.22	0.84	0.00
6.00	0.23	0.00	0.00	57.00	3.22	0.84	0.00
7.00	0.29	0.00	0.00	58.00	3.22	0.84	0.00
8.00	0.37	0.00	0.00	59.00	3.22	0.84	0.00
9.00	0.47	0.00	0.00	60.00	3.22	0.84	0.00
10.00	0.61	0.00	0.00	61.00	3.22	0.84	0.00
11.00	0.80	0.00	0.00	62.00	3.22	0.84	0.00
12.00	1.61	0.11	0.15	63.00	3.22	0.84	0.00
13.00	2.41	0.42	0.08	64.00	3.22	0.84	0.00
14.00	2.61	0.51	0.05	65.00	3.22	0.84	0.00
15.00	2.75	0.58	0.04	66.00	3.22	0.84	0.00
16.00	2.85	0.63	0.03	67.00	3.22	0.84	0.00
17.00	2.93	0.67	0.02	68.00	3.22	0.84	0.00
18.00	2.99	0.71	0.02	69.00	3.22	0.84	0.00
19.00	3.04	0.74	0.02	70.00	3.22	0.84	0.00
20.00	3.08	0.76	0.01	71.00	3.22	0.84	0.00
21.00	3.12	0.78	0.01	72.00	3.22	0.84	0.00
22.00	3.16	0.80	0.01				
23.00	3.19	0.82	0.01				
24.00	3.22	0.84	0.01				
25.00	3.22	0.84	0.00				
26.00	3.22	0.84	0.00				
27.00	3.22	0.84	0.00				
28.00	3.22	0.84	0.00				
29.00	3.22	0.84	0.00				
30.00	3.22	0.84	0.00				
31.00	3.22	0.84	0.00				
32.00	3.22	0.84	0.00				
33.00	3.22	0.84	0.00				
34.00	3.22	0.84	0.00				
35.00	3.22	0.84	0.00				
36.00	3.22	0.84	0.00				
37.00	3.22	0.84	0.00				
38.00	3.22	0.84	0.00				
39.00	3.22	0.84	0.00				
40.00	3.22	0.84	0.00				
41.00	3.22	0.84	0.00				
42.00	3.22	0.84	0.00				
43.00	3.22	0.84	0.00				
44.00	3.22	0.84	0.00				
45.00	3.22	0.84	0.00				
46.00	3.22	0.84	0.00				
47.00	3.22	0.84	0.00				
48.00	3.22	0.84	0.00				
49.00	3.22	0.84	0.00				
50.00	3.22	0.84	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR E1: Jordan Lot

Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af, Depth= 1.93"
Routed to Pond 2P : WQS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.038	98	Impervious
0.008	32	Woods/grass comb., Good, HSG A
0.046	87	Weighted Average
0.008		17.39% Pervious Area
0.038		82.61% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR E1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	1.93	0.00
1.00	0.03	0.00	0.00	52.00	3.22	1.93	0.00
2.00	0.06	0.00	0.00	53.00	3.22	1.93	0.00
3.00	0.10	0.00	0.00	54.00	3.22	1.93	0.00
4.00	0.14	0.00	0.00	55.00	3.22	1.93	0.00
5.00	0.18	0.00	0.00	56.00	3.22	1.93	0.00
6.00	0.23	0.00	0.00	57.00	3.22	1.93	0.00
7.00	0.29	0.00	0.00	58.00	3.22	1.93	0.00
8.00	0.37	0.00	0.00	59.00	3.22	1.93	0.00
9.00	0.47	0.02	0.00	60.00	3.22	1.93	0.00
10.00	0.61	0.05	0.00	61.00	3.22	1.93	0.00
11.00	0.80	0.13	0.00	62.00	3.22	1.93	0.00
12.00	1.61	0.61	0.06	63.00	3.22	1.93	0.00
13.00	2.41	1.24	0.01	64.00	3.22	1.93	0.00
14.00	2.61	1.40	0.01	65.00	3.22	1.93	0.00
15.00	2.75	1.52	0.00	66.00	3.22	1.93	0.00
16.00	2.85	1.61	0.00	67.00	3.22	1.93	0.00
17.00	2.93	1.68	0.00	68.00	3.22	1.93	0.00
18.00	2.99	1.73	0.00	69.00	3.22	1.93	0.00
19.00	3.04	1.77	0.00	70.00	3.22	1.93	0.00
20.00	3.08	1.81	0.00	71.00	3.22	1.93	0.00
21.00	3.12	1.85	0.00	72.00	3.22	1.93	0.00
22.00	3.16	1.88	0.00				
23.00	3.19	1.91	0.00				
24.00	3.22	1.93	0.00				
25.00	3.22	1.93	0.00				
26.00	3.22	1.93	0.00				
27.00	3.22	1.93	0.00				
28.00	3.22	1.93	0.00				
29.00	3.22	1.93	0.00				
30.00	3.22	1.93	0.00				
31.00	3.22	1.93	0.00				
32.00	3.22	1.93	0.00				
33.00	3.22	1.93	0.00				
34.00	3.22	1.93	0.00				
35.00	3.22	1.93	0.00				
36.00	3.22	1.93	0.00				
37.00	3.22	1.93	0.00				
38.00	3.22	1.93	0.00				
39.00	3.22	1.93	0.00				
40.00	3.22	1.93	0.00				
41.00	3.22	1.93	0.00				
42.00	3.22	1.93	0.00				
43.00	3.22	1.93	0.00				
44.00	3.22	1.93	0.00				
45.00	3.22	1.93	0.00				
46.00	3.22	1.93	0.00				
47.00	3.22	1.93	0.00				
48.00	3.22	1.93	0.00				
49.00	3.22	1.93	0.00				
50.00	3.22	1.93	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR E2: Jordan Lot

Runoff = 0.19 cfs @ 12.18 hrs, Volume= 0.017 af, Depth= 1.05"
 Routed to Link PR DP E : EX BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.128	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.071	32	Woods/grass comb., Good, HSG A
0.199	74	Weighted Average
0.071		35.68% Pervious Area
0.128		64.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	55	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.3	45	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0					Direct Entry,
11.8	100	Total			

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR E2: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	1.05	0.00
1.00	0.03	0.00	0.00	52.00	3.22	1.05	0.00
2.00	0.06	0.00	0.00	53.00	3.22	1.05	0.00
3.00	0.10	0.00	0.00	54.00	3.22	1.05	0.00
4.00	0.14	0.00	0.00	55.00	3.22	1.05	0.00
5.00	0.18	0.00	0.00	56.00	3.22	1.05	0.00
6.00	0.23	0.00	0.00	57.00	3.22	1.05	0.00
7.00	0.29	0.00	0.00	58.00	3.22	1.05	0.00
8.00	0.37	0.00	0.00	59.00	3.22	1.05	0.00
9.00	0.47	0.00	0.00	60.00	3.22	1.05	0.00
10.00	0.61	0.00	0.00	61.00	3.22	1.05	0.00
11.00	0.80	0.00	0.00	62.00	3.22	1.05	0.00
12.00	1.61	0.19	0.07	63.00	3.22	1.05	0.00
13.00	2.41	0.56	0.03	64.00	3.22	1.05	0.00
14.00	2.61	0.67	0.02	65.00	3.22	1.05	0.00
15.00	2.75	0.75	0.02	66.00	3.22	1.05	0.00
16.00	2.85	0.82	0.01	67.00	3.22	1.05	0.00
17.00	2.93	0.86	0.01	68.00	3.22	1.05	0.00
18.00	2.99	0.90	0.01	69.00	3.22	1.05	0.00
19.00	3.04	0.93	0.01	70.00	3.22	1.05	0.00
20.00	3.08	0.96	0.01	71.00	3.22	1.05	0.00
21.00	3.12	0.99	0.01	72.00	3.22	1.05	0.00
22.00	3.16	1.01	0.00				
23.00	3.19	1.03	0.00				
24.00	3.22	1.05	0.00				
25.00	3.22	1.05	0.00				
26.00	3.22	1.05	0.00				
27.00	3.22	1.05	0.00				
28.00	3.22	1.05	0.00				
29.00	3.22	1.05	0.00				
30.00	3.22	1.05	0.00				
31.00	3.22	1.05	0.00				
32.00	3.22	1.05	0.00				
33.00	3.22	1.05	0.00				
34.00	3.22	1.05	0.00				
35.00	3.22	1.05	0.00				
36.00	3.22	1.05	0.00				
37.00	3.22	1.05	0.00				
38.00	3.22	1.05	0.00				
39.00	3.22	1.05	0.00				
40.00	3.22	1.05	0.00				
41.00	3.22	1.05	0.00				
42.00	3.22	1.05	0.00				
43.00	3.22	1.05	0.00				
44.00	3.22	1.05	0.00				
45.00	3.22	1.05	0.00				
46.00	3.22	1.05	0.00				
47.00	3.22	1.05	0.00				
48.00	3.22	1.05	0.00				
49.00	3.22	1.05	0.00				
50.00	3.22	1.05	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Subcatchment PR F: Upper Lot

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.083 af, Depth= 1.77"
 Routed to Link PR DP F : PR Main Campus

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

Area (ac)	CN	Description
* 0.356	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.135	79	Woods/grass comb., Good, HSG D
0.069	32	Woods/grass comb., Good, HSG A
0.560	85	Weighted Average
0.204		36.43% Pervious Area
0.356		63.57% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Subcatchment PR F: Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	3.22	1.77	0.00
1.00	0.03	0.00	0.00	52.00	3.22	1.77	0.00
2.00	0.06	0.00	0.00	53.00	3.22	1.77	0.00
3.00	0.10	0.00	0.00	54.00	3.22	1.77	0.00
4.00	0.14	0.00	0.00	55.00	3.22	1.77	0.00
5.00	0.18	0.00	0.00	56.00	3.22	1.77	0.00
6.00	0.23	0.00	0.00	57.00	3.22	1.77	0.00
7.00	0.29	0.00	0.00	58.00	3.22	1.77	0.00
8.00	0.37	0.00	0.00	59.00	3.22	1.77	0.00
9.00	0.47	0.01	0.01	60.00	3.22	1.77	0.00
10.00	0.61	0.03	0.02	61.00	3.22	1.77	0.00
11.00	0.80	0.09	0.05	62.00	3.22	1.77	0.00
12.00	1.61	0.52	0.68	63.00	3.22	1.77	0.00
13.00	2.41	1.11	0.12	64.00	3.22	1.77	0.00
14.00	2.61	1.27	0.08	65.00	3.22	1.77	0.00
15.00	2.75	1.38	0.06	66.00	3.22	1.77	0.00
16.00	2.85	1.47	0.04	67.00	3.22	1.77	0.00
17.00	2.93	1.53	0.03	68.00	3.22	1.77	0.00
18.00	2.99	1.58	0.03	69.00	3.22	1.77	0.00
19.00	3.04	1.62	0.02	70.00	3.22	1.77	0.00
20.00	3.08	1.66	0.02	71.00	3.22	1.77	0.00
21.00	3.12	1.69	0.02	72.00	3.22	1.77	0.00
22.00	3.16	1.72	0.02				
23.00	3.19	1.75	0.02				
24.00	3.22	1.77	0.01				
25.00	3.22	1.77	0.00				
26.00	3.22	1.77	0.00				
27.00	3.22	1.77	0.00				
28.00	3.22	1.77	0.00				
29.00	3.22	1.77	0.00				
30.00	3.22	1.77	0.00				
31.00	3.22	1.77	0.00				
32.00	3.22	1.77	0.00				
33.00	3.22	1.77	0.00				
34.00	3.22	1.77	0.00				
35.00	3.22	1.77	0.00				
36.00	3.22	1.77	0.00				
37.00	3.22	1.77	0.00				
38.00	3.22	1.77	0.00				
39.00	3.22	1.77	0.00				
40.00	3.22	1.77	0.00				
41.00	3.22	1.77	0.00				
42.00	3.22	1.77	0.00				
43.00	3.22	1.77	0.00				
44.00	3.22	1.77	0.00				
45.00	3.22	1.77	0.00				
46.00	3.22	1.77	0.00				
47.00	3.22	1.77	0.00				
48.00	3.22	1.77	0.00				
49.00	3.22	1.77	0.00				
50.00	3.22	1.77	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Pond 2P: WQS

Inflow Area = 0.046 ac, 82.61% Impervious, Inflow Depth = 1.93" for 2-yr 24-hr event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af
Outflow = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af
Routed to Link PR DP E : EX BMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 249.15' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 12.09 hrs HW=249.15' TW=0.00' (Dynamic Tailwater)
↑1=Orifice/Grate (Orifice Controls 0.10 cfs @ 1.33 fps)

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Pond 2P: WQS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	249.00	0.00	51.00	0.00	249.00	0.00
1.00	0.00	249.00	0.00	52.00	0.00	249.00	0.00
2.00	0.00	249.00	0.00	53.00	0.00	249.00	0.00
3.00	0.00	249.00	0.00	54.00	0.00	249.00	0.00
4.00	0.00	249.00	0.00	55.00	0.00	249.00	0.00
5.00	0.00	249.00	0.00	56.00	0.00	249.00	0.00
6.00	0.00	249.00	0.00	57.00	0.00	249.00	0.00
7.00	0.00	249.00	0.00	58.00	0.00	249.00	0.00
8.00	0.00	249.01	0.00	59.00	0.00	249.00	0.00
9.00	0.00	249.01	0.00	60.00	0.00	249.00	0.00
10.00	0.00	249.02	0.00	61.00	0.00	249.00	0.00
11.00	0.00	249.03	0.00	62.00	0.00	249.00	0.00
12.00	0.06	249.12	0.06	63.00	0.00	249.00	0.00
13.00	0.01	249.05	0.01	64.00	0.00	249.00	0.00
14.00	0.01	249.04	0.01	65.00	0.00	249.00	0.00
15.00	0.00	249.03	0.00	66.00	0.00	249.00	0.00
16.00	0.00	249.03	0.00	67.00	0.00	249.00	0.00
17.00	0.00	249.02	0.00	68.00	0.00	249.00	0.00
18.00	0.00	249.02	0.00	69.00	0.00	249.00	0.00
19.00	0.00	249.02	0.00	70.00	0.00	249.00	0.00
20.00	0.00	249.02	0.00	71.00	0.00	249.00	0.00
21.00	0.00	249.02	0.00	72.00	0.00	249.00	0.00
22.00	0.00	249.02	0.00				
23.00	0.00	249.02	0.00				
24.00	0.00	249.02	0.00				
25.00	0.00	249.00	0.00				
26.00	0.00	249.00	0.00				
27.00	0.00	249.00	0.00				
28.00	0.00	249.00	0.00				
29.00	0.00	249.00	0.00				
30.00	0.00	249.00	0.00				
31.00	0.00	249.00	0.00				
32.00	0.00	249.00	0.00				
33.00	0.00	249.00	0.00				
34.00	0.00	249.00	0.00				
35.00	0.00	249.00	0.00				
36.00	0.00	249.00	0.00				
37.00	0.00	249.00	0.00				
38.00	0.00	249.00	0.00				
39.00	0.00	249.00	0.00				
40.00	0.00	249.00	0.00				
41.00	0.00	249.00	0.00				
42.00	0.00	249.00	0.00				
43.00	0.00	249.00	0.00				
44.00	0.00	249.00	0.00				
45.00	0.00	249.00	0.00				
46.00	0.00	249.00	0.00				
47.00	0.00	249.00	0.00				
48.00	0.00	249.00	0.00				
49.00	0.00	249.00	0.00				
50.00	0.00	249.00	0.00				

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Stage-Area-Storage for Pond 2P: WQS

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
249.00	0.000	249.51	0.000
249.01	0.000	249.52	0.000
249.02	0.000	249.53	0.000
249.03	0.000	249.54	0.000
249.04	0.000	249.55	0.000
249.05	0.000	249.56	0.000
249.06	0.000	249.57	0.000
249.07	0.000	249.58	0.000
249.08	0.000	249.59	0.000
249.09	0.000	249.60	0.000
249.10	0.000	249.61	0.000
249.11	0.000	249.62	0.000
249.12	0.000	249.63	0.000
249.13	0.000	249.64	0.000
249.14	0.000	249.65	0.000
249.15	0.000	249.66	0.000
249.16	0.000	249.67	0.000
249.17	0.000	249.68	0.000
249.18	0.000	249.69	0.000
249.19	0.000	249.70	0.000
249.20	0.000	249.71	0.000
249.21	0.000	249.72	0.000
249.22	0.000	249.73	0.000
249.23	0.000	249.74	0.000
249.24	0.000	249.75	0.000
249.25	0.000	249.76	0.000
249.26	0.000	249.77	0.000
249.27	0.000	249.78	0.000
249.28	0.000	249.79	0.000
249.29	0.000	249.80	0.000
249.30	0.000	249.81	0.000
249.31	0.000	249.82	0.000
249.32	0.000	249.83	0.000
249.33	0.000	249.84	0.000
249.34	0.000	249.85	0.000
249.35	0.000	249.86	0.000
249.36	0.000	249.87	0.000
249.37	0.000	249.88	0.000
249.38	0.000	249.89	0.000
249.39	0.000	249.90	0.000
249.40	0.000	249.91	0.000
249.41	0.000	249.92	0.000
249.42	0.000	249.93	0.000
249.43	0.000	249.94	0.000
249.44	0.000	249.95	0.000
249.45	0.000	249.96	0.000
249.46	0.000	249.97	0.000
249.47	0.000	249.98	0.000
249.48	0.000	249.99	0.000
249.49	0.000	250.00	0.000
249.50	0.000		

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Pond A1: Porous Pave

Inflow Area = 0.225 ac, 100.00% Impervious, Inflow Depth = 2.99" for 2-yr 24-hr event
 Inflow = 0.69 cfs @ 12.09 hrs, Volume= 0.056 af
 Outflow = 0.15 cfs @ 12.50 hrs, Volume= 0.056 af, Atten= 79%, Lag= 24.8 min
 Discarded = 0.15 cfs @ 12.50 hrs, Volume= 0.056 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link PR DP A : PR Park Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 0.19' @ 12.50 hrs Surf.Area= 9,800 sf Storage= 555 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 19.6 min (775.9 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,880 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 19,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	9,800	0	0
2.00	9,800	19,600	19,600

Device	Routing	Invert	Outlet Devices
#0	Primary	2.00'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.588 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.15 cfs @ 12.50 hrs HW=0.19' (Free Discharge)
 ↑**1=Exfiltration** (Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=0.00' (Dynamic Tailwater)

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Hydrograph for Pond A1: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	0.00	0.00	0.00	0.00
2.50	0.00	0	0.00	0.00	0.00	0.00
5.00	0.01	0	0.00	0.01	0.01	0.00
7.50	0.01	0	0.00	0.01	0.01	0.00
10.00	0.03	0	0.00	0.03	0.03	0.00
12.50	0.15	555	0.19	0.15	0.15	0.00
15.00	0.03	0	0.00	0.06	0.06	0.00
17.50	0.01	0	0.00	0.03	0.03	0.00
20.00	0.01	0	0.00	0.02	0.02	0.00
22.50	0.01	0	0.00	0.02	0.02	0.00
25.00	0.00	0	0.00	0.00	0.00	0.00
27.50	0.00	0	0.00	0.00	0.00	0.00
30.00	0.00	0	0.00	0.00	0.00	0.00
32.50	0.00	0	0.00	0.00	0.00	0.00
35.00	0.00	0	0.00	0.00	0.00	0.00
37.50	0.00	0	0.00	0.00	0.00	0.00
40.00	0.00	0	0.00	0.00	0.00	0.00
42.50	0.00	0	0.00	0.00	0.00	0.00
45.00	0.00	0	0.00	0.00	0.00	0.00
47.50	0.00	0	0.00	0.00	0.00	0.00
50.00	0.00	0	0.00	0.00	0.00	0.00
52.50	0.00	0	0.00	0.00	0.00	0.00
55.00	0.00	0	0.00	0.00	0.00	0.00
57.50	0.00	0	0.00	0.00	0.00	0.00
60.00	0.00	0	0.00	0.00	0.00	0.00
62.50	0.00	0	0.00	0.00	0.00	0.00
65.00	0.00	0	0.00	0.00	0.00	0.00
67.50	0.00	0	0.00	0.00	0.00	0.00
70.00	0.00	0	0.00	0.00	0.00	0.00
72.50	0.00	0	0.00	0.00	0.00	0.00

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Stage-Area-Storage for Pond A1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	9,800	0	1.02	9,800	2,999
0.02	9,800	59	1.04	9,800	3,058
0.04	9,800	118	1.06	9,800	3,116
0.06	9,800	176	1.08	9,800	3,175
0.08	9,800	235	1.10	9,800	3,234
0.10	9,800	294	1.12	9,800	3,293
0.12	9,800	353	1.14	9,800	3,352
0.14	9,800	412	1.16	9,800	3,410
0.16	9,800	470	1.18	9,800	3,469
0.18	9,800	529	1.20	9,800	3,528
0.20	9,800	588	1.22	9,800	3,587
0.22	9,800	647	1.24	9,800	3,646
0.24	9,800	706	1.26	9,800	3,704
0.26	9,800	764	1.28	9,800	3,763
0.28	9,800	823	1.30	9,800	3,822
0.30	9,800	882	1.32	9,800	3,881
0.32	9,800	941	1.34	9,800	3,940
0.34	9,800	1,000	1.36	9,800	3,998
0.36	9,800	1,058	1.38	9,800	4,057
0.38	9,800	1,117	1.40	9,800	4,116
0.40	9,800	1,176	1.42	9,800	4,175
0.42	9,800	1,235	1.44	9,800	4,234
0.44	9,800	1,294	1.46	9,800	4,292
0.46	9,800	1,352	1.48	9,800	4,351
0.48	9,800	1,411	1.50	9,800	4,410
0.50	9,800	1,470	1.52	9,800	4,469
0.52	9,800	1,529	1.54	9,800	4,528
0.54	9,800	1,588	1.56	9,800	4,586
0.56	9,800	1,646	1.58	9,800	4,645
0.58	9,800	1,705	1.60	9,800	4,704
0.60	9,800	1,764	1.62	9,800	4,763
0.62	9,800	1,823	1.64	9,800	4,822
0.64	9,800	1,882	1.66	9,800	4,880
0.66	9,800	1,940	1.68	9,800	4,939
0.68	9,800	1,999	1.70	9,800	4,998
0.70	9,800	2,058	1.72	9,800	5,057
0.72	9,800	2,117	1.74	9,800	5,116
0.74	9,800	2,176	1.76	9,800	5,174
0.76	9,800	2,234	1.78	9,800	5,233
0.78	9,800	2,293	1.80	9,800	5,292
0.80	9,800	2,352	1.82	9,800	5,351
0.82	9,800	2,411	1.84	9,800	5,410
0.84	9,800	2,470	1.86	9,800	5,468
0.86	9,800	2,528	1.88	9,800	5,527
0.88	9,800	2,587	1.90	9,800	5,586
0.90	9,800	2,646	1.92	9,800	5,645
0.92	9,800	2,705	1.94	9,800	5,704
0.94	9,800	2,764	1.96	9,800	5,762
0.96	9,800	2,822	1.98	9,800	5,821
0.98	9,800	2,881	2.00	9,800	5,880
1.00	9,800	2,940			

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Summary for Pond B1: Porous Pave

Inflow Area = 1.238 ac, 71.16% Impervious, Inflow Depth = 2.01" for 2-yr 24-hr event
 Inflow = 2.85 cfs @ 12.09 hrs, Volume= 0.208 af
 Outflow = 0.38 cfs @ 12.68 hrs, Volume= 0.208 af, Atten= 87%, Lag= 35.6 min
 Discarded = 0.38 cfs @ 12.68 hrs, Volume= 0.208 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 0.27' @ 12.68 hrs Surf.Area= 36,800 sf Storage= 2,987 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 59.1 min (873.9 - 814.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	22,080 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 73,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	36,800	0	0
2.00	36,800	73,600	73,600

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.391 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.38 cfs @ 12.68 hrs HW=0.27' (Free Discharge)
 ↑1=Exfiltration - TP8 (Controls 0.38 cfs)

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Pond B1: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.01	0	0.00	0.01
10.00	0.07	0	0.00	0.07
12.50	0.67	2,921	0.26	0.38
15.00	0.14	1,621	0.15	0.36
17.50	0.07	0	0.00	0.00
20.00	0.05	0	0.00	0.00
22.50	0.04	0	0.00	0.00
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

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Stage-Area-Storage for Pond B1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	36,800	0	1.02	36,800	11,261
0.02	36,800	221	1.04	36,800	11,482
0.04	36,800	442	1.06	36,800	11,702
0.06	36,800	662	1.08	36,800	11,923
0.08	36,800	883	1.10	36,800	12,144
0.10	36,800	1,104	1.12	36,800	12,365
0.12	36,800	1,325	1.14	36,800	12,586
0.14	36,800	1,546	1.16	36,800	12,806
0.16	36,800	1,766	1.18	36,800	13,027
0.18	36,800	1,987	1.20	36,800	13,248
0.20	36,800	2,208	1.22	36,800	13,469
0.22	36,800	2,429	1.24	36,800	13,690
0.24	36,800	2,650	1.26	36,800	13,910
0.26	36,800	2,870	1.28	36,800	14,131
0.28	36,800	3,091	1.30	36,800	14,352
0.30	36,800	3,312	1.32	36,800	14,573
0.32	36,800	3,533	1.34	36,800	14,794
0.34	36,800	3,754	1.36	36,800	15,014
0.36	36,800	3,974	1.38	36,800	15,235
0.38	36,800	4,195	1.40	36,800	15,456
0.40	36,800	4,416	1.42	36,800	15,677
0.42	36,800	4,637	1.44	36,800	15,898
0.44	36,800	4,858	1.46	36,800	16,118
0.46	36,800	5,078	1.48	36,800	16,339
0.48	36,800	5,299	1.50	36,800	16,560
0.50	36,800	5,520	1.52	36,800	16,781
0.52	36,800	5,741	1.54	36,800	17,002
0.54	36,800	5,962	1.56	36,800	17,222
0.56	36,800	6,182	1.58	36,800	17,443
0.58	36,800	6,403	1.60	36,800	17,664
0.60	36,800	6,624	1.62	36,800	17,885
0.62	36,800	6,845	1.64	36,800	18,106
0.64	36,800	7,066	1.66	36,800	18,326
0.66	36,800	7,286	1.68	36,800	18,547
0.68	36,800	7,507	1.70	36,800	18,768
0.70	36,800	7,728	1.72	36,800	18,989
0.72	36,800	7,949	1.74	36,800	19,210
0.74	36,800	8,170	1.76	36,800	19,430
0.76	36,800	8,390	1.78	36,800	19,651
0.78	36,800	8,611	1.80	36,800	19,872
0.80	36,800	8,832	1.82	36,800	20,093
0.82	36,800	9,053	1.84	36,800	20,314
0.84	36,800	9,274	1.86	36,800	20,534
0.86	36,800	9,494	1.88	36,800	20,755
0.88	36,800	9,715	1.90	36,800	20,976
0.90	36,800	9,936	1.92	36,800	21,197
0.92	36,800	10,157	1.94	36,800	21,418
0.94	36,800	10,378	1.96	36,800	21,638
0.96	36,800	10,598	1.98	36,800	21,859
0.98	36,800	10,819	2.00	36,800	22,080
1.00	36,800	11,040			

Belmont Hill School - Proposed Conditions

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Summary for Pond B3: Subsurface Chambers

Inflow Area = 0.476 ac, 100.00% Impervious, Inflow Depth = 2.99" for 2-yr 24-hr event
 Inflow = 1.45 cfs @ 12.09 hrs, Volume= 0.119 af
 Outflow = 0.07 cfs @ 14.57 hrs, Volume= 0.119 af, Atten= 95%, Lag= 148.9 min
 Discarded = 0.07 cfs @ 14.57 hrs, Volume= 0.119 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link PR DP B : PR Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 259.44' @ 14.57 hrs Surf.Area= 2,445 sf Storage= 2,635 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 369.8 min (1,126.0 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	258.00'	1,672 cf	32.87"W x 74.37"L x 3.56"H Field A 8,714 cf Overall - 4,533 cf Embedded = 4,181 cf x 40.0% Voids
#2A	258.33'	4,306 cf	ACF R-Tank SD 3 x 660 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 660 Chambers in 22 Rows
		5,979 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	259.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 0.50 1.50 Width (feet) 1.50 1.50 4.00 4.00
#2	Discarded	258.00'	0.800 in/hr Exfiltration - TP3 over Surface area Conductivity to Groundwater Elevation = 255.00'
#3	Primary	257.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 14.57 hrs HW=259.44' (Free Discharge)
 ↑ **2=Exfiltration - TP3** (Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=258.00' TW=0.00' (Dynamic Tailwater)
 ↑ **3=Orifice/Grate** (Passes 0.00 cfs of 0.17 cfs potential flow)
 ↑ **1=Custom Weir/Orifice** (Controls 0.00 cfs)

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Belmont Hill School - Proposed

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Pond B3: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

30 Chambers/Row x 2.35' Long = 70.37' Row Length +24.0" End Stone x 2 = 74.37' Base Length

22 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 32.87' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

660 Chambers x 6.5 cf = 4,306.2 cf Chamber Storage

660 Chambers x 6.9 cf = 4,532.9 cf Displacement

8,713.9 cf Field - 4,532.9 cf Chambers = 4,181.1 cf Stone x 40.0% Voids = 1,672.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,978.7 cf = 0.137 af

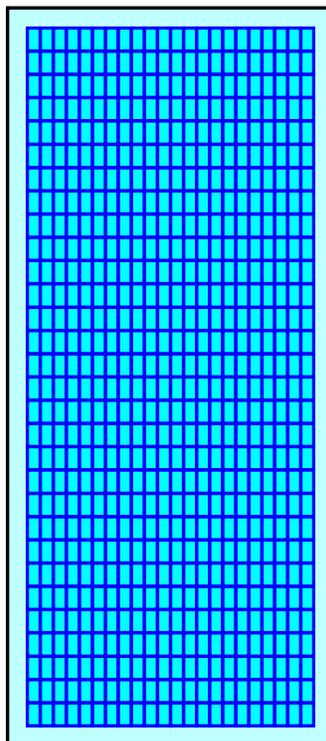
Overall Storage Efficiency = 68.6%

Overall System Size = 74.37' x 32.87' x 3.56'

660 Chambers

322.7 cy Field

154.9 cy Stone



Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Pond B3: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	258.00	0.00	0.00	0.00
2.50	0.00	0	258.00	0.00	0.00	0.00
5.00	0.01	0	258.00	0.01	0.01	0.00
7.50	0.03	0	258.00	0.03	0.03	0.00
10.00	0.07	52	258.05	0.05	0.05	0.00
12.50	0.31	2,317	259.28	0.06	0.06	0.00
15.00	0.06	2,629	259.43	0.07	0.07	0.00
17.50	0.03	2,404	259.32	0.07	0.07	0.00
20.00	0.02	2,039	259.15	0.06	0.06	0.00
22.50	0.02	1,650	258.97	0.06	0.06	0.00
25.00	0.00	1,208	258.75	0.06	0.06	0.00
27.50	0.00	714	258.52	0.05	0.05	0.00
30.00	0.00	252	258.26	0.05	0.05	0.00
32.50	0.00	0	258.00	0.00	0.00	0.00
35.00	0.00	0	258.00	0.00	0.00	0.00
37.50	0.00	0	258.00	0.00	0.00	0.00
40.00	0.00	0	258.00	0.00	0.00	0.00
42.50	0.00	0	258.00	0.00	0.00	0.00
45.00	0.00	0	258.00	0.00	0.00	0.00
47.50	0.00	0	258.00	0.00	0.00	0.00
50.00	0.00	0	258.00	0.00	0.00	0.00
52.50	0.00	0	258.00	0.00	0.00	0.00
55.00	0.00	0	258.00	0.00	0.00	0.00
57.50	0.00	0	258.00	0.00	0.00	0.00
60.00	0.00	0	258.00	0.00	0.00	0.00
62.50	0.00	0	258.00	0.00	0.00	0.00
65.00	0.00	0	258.00	0.00	0.00	0.00
67.50	0.00	0	258.00	0.00	0.00	0.00
70.00	0.00	0	258.00	0.00	0.00	0.00
72.50	0.00	0	258.00	0.00	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Stage-Area-Storage for Pond B3: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.00	2,445	0	260.55	2,445	4,971
258.05	2,445	49	260.60	2,445	5,036
258.10	2,445	98	260.65	2,445	5,085
258.15	2,445	147	260.70	2,445	5,133
258.20	2,445	196	260.75	2,445	5,182
258.25	2,445	244	260.80	2,445	5,231
258.30	2,445	293	260.85	2,445	5,280
258.35	2,445	361	260.90	2,445	5,329
258.40	2,445	466	260.95	2,445	5,378
258.45	2,445	570	261.00	2,445	5,427
258.50	2,445	675	261.05	2,445	5,476
258.55	2,445	780	261.10	2,445	5,525
258.60	2,445	885	261.15	2,445	5,574
258.65	2,445	990	261.20	2,445	5,622
258.70	2,445	1,094	261.25	2,445	5,671
258.75	2,445	1,199	261.30	2,445	5,720
258.80	2,445	1,304	261.35	2,445	5,769
258.85	2,445	1,409	261.40	2,445	5,818
258.90	2,445	1,513	261.45	2,445	5,867
258.95	2,445	1,618	261.50	2,445	5,916
259.00	2,445	1,723	261.55	2,445	5,965
259.05	2,445	1,828			
259.10	2,445	1,932			
259.15	2,445	2,037			
259.20	2,445	2,142			
259.25	2,445	2,247			
259.30	2,445	2,352			
259.35	2,445	2,456			
259.40	2,445	2,561			
259.45	2,445	2,666			
259.50	2,445	2,771			
259.55	2,445	2,875			
259.60	2,445	2,980			
259.65	2,445	3,085			
259.70	2,445	3,190			
259.75	2,445	3,294			
259.80	2,445	3,399			
259.85	2,445	3,504			
259.90	2,445	3,609			
259.95	2,445	3,714			
260.00	2,445	3,818			
260.05	2,445	3,923			
260.10	2,445	4,028			
260.15	2,445	4,133			
260.20	2,445	4,237			
260.25	2,445	4,342			
260.30	2,445	4,447			
260.35	2,445	4,552			
260.40	2,445	4,656			
260.45	2,445	4,761			
260.50	2,445	4,866			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Pond B4: Porous Pave

Inflow Area = 0.143 ac, 0.00% Impervious, Inflow Depth = 0.84" for 2-yr 24-hr event
 Inflow = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af
 Outflow = 0.12 cfs @ 12.13 hrs, Volume= 0.010 af, Atten= 6%, Lag= 1.3 min
 Discarded = 0.12 cfs @ 12.13 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 0.00' @ 12.14 hrs Surf.Area= 6,200 sf Storage= 1 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.5 min (875.8 - 875.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,720 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 12,400 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	6,200	0	0
2.00	6,200	12,400	12,400

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.800 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.11 cfs @ 12.13 hrs HW=0.00' (Free Discharge)
 ↑1=Exfiltration - TP8 (Controls 0.11 cfs)

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Pond B4: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.00	0	0.00	0.00
10.00	0.00	0	0.00	0.00
12.50	0.04	0	0.00	0.05
15.00	0.01	0	0.00	0.02
17.50	0.00	0	0.00	0.01
20.00	0.00	0	0.00	0.01
22.50	0.00	0	0.00	0.01
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Stage-Area-Storage for Pond B4: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	6,200	0	1.02	6,200	1,897
0.02	6,200	37	1.04	6,200	1,934
0.04	6,200	74	1.06	6,200	1,972
0.06	6,200	112	1.08	6,200	2,009
0.08	6,200	149	1.10	6,200	2,046
0.10	6,200	186	1.12	6,200	2,083
0.12	6,200	223	1.14	6,200	2,120
0.14	6,200	260	1.16	6,200	2,158
0.16	6,200	298	1.18	6,200	2,195
0.18	6,200	335	1.20	6,200	2,232
0.20	6,200	372	1.22	6,200	2,269
0.22	6,200	409	1.24	6,200	2,306
0.24	6,200	446	1.26	6,200	2,344
0.26	6,200	484	1.28	6,200	2,381
0.28	6,200	521	1.30	6,200	2,418
0.30	6,200	558	1.32	6,200	2,455
0.32	6,200	595	1.34	6,200	2,492
0.34	6,200	632	1.36	6,200	2,530
0.36	6,200	670	1.38	6,200	2,567
0.38	6,200	707	1.40	6,200	2,604
0.40	6,200	744	1.42	6,200	2,641
0.42	6,200	781	1.44	6,200	2,678
0.44	6,200	818	1.46	6,200	2,716
0.46	6,200	856	1.48	6,200	2,753
0.48	6,200	893	1.50	6,200	2,790
0.50	6,200	930	1.52	6,200	2,827
0.52	6,200	967	1.54	6,200	2,864
0.54	6,200	1,004	1.56	6,200	2,902
0.56	6,200	1,042	1.58	6,200	2,939
0.58	6,200	1,079	1.60	6,200	2,976
0.60	6,200	1,116	1.62	6,200	3,013
0.62	6,200	1,153	1.64	6,200	3,050
0.64	6,200	1,190	1.66	6,200	3,088
0.66	6,200	1,228	1.68	6,200	3,125
0.68	6,200	1,265	1.70	6,200	3,162
0.70	6,200	1,302	1.72	6,200	3,199
0.72	6,200	1,339	1.74	6,200	3,236
0.74	6,200	1,376	1.76	6,200	3,274
0.76	6,200	1,414	1.78	6,200	3,311
0.78	6,200	1,451	1.80	6,200	3,348
0.80	6,200	1,488	1.82	6,200	3,385
0.82	6,200	1,525	1.84	6,200	3,422
0.84	6,200	1,562	1.86	6,200	3,460
0.86	6,200	1,600	1.88	6,200	3,497
0.88	6,200	1,637	1.90	6,200	3,534
0.90	6,200	1,674	1.92	6,200	3,571
0.92	6,200	1,711	1.94	6,200	3,608
0.94	6,200	1,748	1.96	6,200	3,646
0.96	6,200	1,786	1.98	6,200	3,683
0.98	6,200	1,823	2.00	6,200	3,720
1.00	6,200	1,860			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Pond D: Subsurface Chambers

Inflow Area = 0.653 ac, 61.26% Impervious, Inflow Depth = 1.17" for 2-yr 24-hr event
 Inflow = 0.76 cfs @ 12.14 hrs, Volume= 0.063 af
 Outflow = 0.06 cfs @ 14.60 hrs, Volume= 0.063 af, Atten= 92%, Lag= 147.2 min
 Discarded = 0.06 cfs @ 14.60 hrs, Volume= 0.063 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link PR DR D : Marsh Street CBs

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 252.24' @ 14.60 hrs Surf.Area= 2,533 sf Storage= 1,218 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 216.2 min (1,074.5 - 858.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	251.50'	1,744 cf	30.25"W x 83.76"L x 3.56"H Field A 9,030 cf Overall - 4,670 cf Embedded = 4,360 cf x 40.0% Voids
#2A	251.83'	4,437 cf	ACF R-Tank SD 3 x 680 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 680 Chambers in 20 Rows
		6,181 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	253.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 1.00 2.00 Width (feet) 4.00 4.00 4.00 4.00
#2	Discarded	251.50'	0.940 in/hr Exfiltration - TP-207 over Surface area Conductivity to Groundwater Elevation = 240.00'
#3	Primary	249.15'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 14.60 hrs HW=252.24' (Free Discharge)
 ↳2=Exfiltration - TP-207 (Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=251.50' TW=0.00' (Dynamic Tailwater)
 ↳3=Orifice/Grate (Passes 0.00 cfs of 5.14 cfs potential flow)
 ↳1=Custom Weir/Orifice (Controls 0.00 cfs)

Belmont Hill School - Proposed Conditions

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Pond D: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

34 Chambers/Row x 2.35' Long = 79.76' Row Length +24.0" End Stone x 2 = 83.76' Base Length

20 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 30.25' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

680 Chambers x 6.5 cf = 4,436.7 cf Chamber Storage

680 Chambers x 6.9 cf = 4,670.2 cf Displacement

9,029.7 cf Field - 4,670.2 cf Chambers = 4,359.5 cf Stone x 40.0% Voids = 1,743.8 cf Stone Storage

Chamber Storage + Stone Storage = 6,180.5 cf = 0.142 af

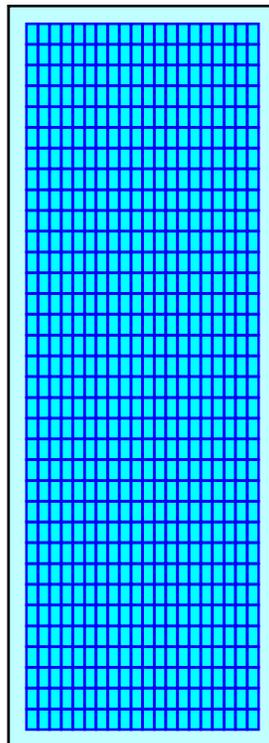
Overall Storage Efficiency = 68.4%

Overall System Size = 83.76' x 30.25' x 3.56'

680 Chambers

334.4 cy Field

161.5 cy Stone



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Hydrograph for Pond D: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	251.50	0.00	0.00	0.00
2.50	0.00	0	251.50	0.00	0.00	0.00
5.00	0.00	0	251.50	0.00	0.00	0.00
7.50	0.00	0	251.50	0.00	0.00	0.00
10.00	0.00	0	251.50	0.00	0.00	0.00
12.50	0.28	945	252.11	0.06	0.06	0.00
15.00	0.05	1,214	252.24	0.06	0.06	0.00
17.50	0.03	1,027	252.15	0.06	0.06	0.00
20.00	0.02	704	252.00	0.06	0.06	0.00
22.50	0.02	344	251.84	0.06	0.06	0.00
25.00	0.00	0	251.50	0.00	0.00	0.00
27.50	0.00	0	251.50	0.00	0.00	0.00
30.00	0.00	0	251.50	0.00	0.00	0.00
32.50	0.00	0	251.50	0.00	0.00	0.00
35.00	0.00	0	251.50	0.00	0.00	0.00
37.50	0.00	0	251.50	0.00	0.00	0.00
40.00	0.00	0	251.50	0.00	0.00	0.00
42.50	0.00	0	251.50	0.00	0.00	0.00
45.00	0.00	0	251.50	0.00	0.00	0.00
47.50	0.00	0	251.50	0.00	0.00	0.00
50.00	0.00	0	251.50	0.00	0.00	0.00
52.50	0.00	0	251.50	0.00	0.00	0.00
55.00	0.00	0	251.50	0.00	0.00	0.00
57.50	0.00	0	251.50	0.00	0.00	0.00
60.00	0.00	0	251.50	0.00	0.00	0.00
62.50	0.00	0	251.50	0.00	0.00	0.00
65.00	0.00	0	251.50	0.00	0.00	0.00
67.50	0.00	0	251.50	0.00	0.00	0.00
70.00	0.00	0	251.50	0.00	0.00	0.00
72.50	0.00	0	251.50	0.00	0.00	0.00

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Belmont Hill School - Proposed

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Stage-Area-Storage for Pond D: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
251.50	2,533	0	254.05	2,533	5,136
251.55	2,533	51	254.10	2,533	5,203
251.60	2,533	101	254.15	2,533	5,254
251.65	2,533	152	254.20	2,533	5,305
251.70	2,533	203	254.25	2,533	5,355
251.75	2,533	253	254.30	2,533	5,406
251.80	2,533	304	254.35	2,533	5,457
251.85	2,533	374	254.40	2,533	5,507
251.90	2,533	482	254.45	2,533	5,558
251.95	2,533	590	254.50	2,533	5,609
252.00	2,533	699	254.55	2,533	5,659
252.05	2,533	807	254.60	2,533	5,710
252.10	2,533	915	254.65	2,533	5,761
252.15	2,533	1,023	254.70	2,533	5,811
252.20	2,533	1,132	254.75	2,533	5,862
252.25	2,533	1,240	254.80	2,533	5,913
252.30	2,533	1,348	254.85	2,533	5,963
252.35	2,533	1,456	254.90	2,533	6,014
252.40	2,533	1,564	254.95	2,533	6,065
252.45	2,533	1,673	255.00	2,533	6,115
252.50	2,533	1,781	255.05	2,533	6,166
252.55	2,533	1,889	255.10	2,533	6,181
252.60	2,533	1,997	255.15	2,533	6,181
252.65	2,533	2,106	255.20	2,533	6,181
252.70	2,533	2,214	255.25	2,533	6,181
252.75	2,533	2,322	255.30	2,533	6,181
252.80	2,533	2,430	255.35	2,533	6,181
252.85	2,533	2,539	255.40	2,533	6,181
252.90	2,533	2,647	255.45	2,533	6,181
252.95	2,533	2,755	255.50	2,533	6,181
253.00	2,533	2,863			
253.05	2,533	2,972			
253.10	2,533	3,080			
253.15	2,533	3,188			
253.20	2,533	3,296			
253.25	2,533	3,404			
253.30	2,533	3,513			
253.35	2,533	3,621			
253.40	2,533	3,729			
253.45	2,533	3,837			
253.50	2,533	3,946			
253.55	2,533	4,054			
253.60	2,533	4,162			
253.65	2,533	4,270			
253.70	2,533	4,379			
253.75	2,533	4,487			
253.80	2,533	4,595			
253.85	2,533	4,703			
253.90	2,533	4,812			
253.95	2,533	4,920			
254.00	2,533	5,028			

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link PR DP A: PR Park Ave

Inflow Area = 1.875 ac, 27.31% Impervious, Inflow Depth = 0.88" for 2-yr 24-hr event
Inflow = 1.30 cfs @ 12.25 hrs, Volume= 0.137 af
Primary = 1.30 cfs @ 12.25 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link PR DP A: PR Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.38	0.00	0.38	63.00	0.00	0.00	0.00
13.00	0.27	0.00	0.27	64.00	0.00	0.00	0.00
14.00	0.16	0.00	0.16	65.00	0.00	0.00	0.00
15.00	0.12	0.00	0.12	66.00	0.00	0.00	0.00
16.00	0.09	0.00	0.09	67.00	0.00	0.00	0.00
17.00	0.07	0.00	0.07	68.00	0.00	0.00	0.00
18.00	0.06	0.00	0.06	69.00	0.00	0.00	0.00
19.00	0.05	0.00	0.05	70.00	0.00	0.00	0.00
20.00	0.04	0.00	0.04	71.00	0.00	0.00	0.00
21.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
22.00	0.04	0.00	0.04				
23.00	0.03	0.00	0.03				
24.00	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link PR DP B: PR Wetlands

Inflow Area = 3.817 ac, 41.97% Impervious, Inflow Depth = 0.01" for 2-yr 24-hr event
Inflow = 0.00 cfs @ 21.46 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 21.46 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link PR DP B: PR Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
21.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link PR DP C: PR Prospect St

Inflow Area = 0.490 ac, 18.78% Impervious, Inflow Depth = 0.03" for 2-yr 24-hr event
Inflow = 0.00 cfs @ 15.73 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 15.73 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link PR DP C: PR Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
21.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link PR DP E: EX BMP

Inflow Area = 0.245 ac, 67.76% Impervious, Inflow Depth = 1.22" for 2-yr 24-hr event
Inflow = 0.27 cfs @ 12.15 hrs, Volume= 0.025 af
Primary = 0.27 cfs @ 12.15 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link PR DP E: EX BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.01	0.00	0.01	62.00	0.00	0.00	0.00
12.00	0.13	0.00	0.13	63.00	0.00	0.00	0.00
13.00	0.04	0.00	0.04	64.00	0.00	0.00	0.00
14.00	0.03	0.00	0.03	65.00	0.00	0.00	0.00
15.00	0.02	0.00	0.02	66.00	0.00	0.00	0.00
16.00	0.01	0.00	0.01	67.00	0.00	0.00	0.00
17.00	0.01	0.00	0.01	68.00	0.00	0.00	0.00
18.00	0.01	0.00	0.01	69.00	0.00	0.00	0.00
19.00	0.01	0.00	0.01	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link PR DP F: PR Main Campus

Inflow Area = 2.040 ac, 51.23% Impervious, Inflow Depth = 0.87" for 2-yr 24-hr event
Inflow = 1.77 cfs @ 12.11 hrs, Volume= 0.148 af
Primary = 1.77 cfs @ 12.11 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link PR DP F: PR Main Campus

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.05	0.00	0.05	62.00	0.00	0.00	0.00
12.00	0.96	0.00	0.96	63.00	0.00	0.00	0.00
13.00	0.23	0.00	0.23	64.00	0.00	0.00	0.00
14.00	0.15	0.00	0.15	65.00	0.00	0.00	0.00
15.00	0.12	0.00	0.12	66.00	0.00	0.00	0.00
16.00	0.08	0.00	0.08	67.00	0.00	0.00	0.00
17.00	0.07	0.00	0.07	68.00	0.00	0.00	0.00
18.00	0.05	0.00	0.05	69.00	0.00	0.00	0.00
19.00	0.05	0.00	0.05	70.00	0.00	0.00	0.00
20.00	0.04	0.00	0.04	71.00	0.00	0.00	0.00
21.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
22.00	0.03	0.00	0.03				
23.00	0.03	0.00	0.03				
24.00	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Summary for Link PR DR D: Marsh Street CBs

Inflow Area = 1.235 ac, 42.35% Impervious, Inflow Depth = 0.40" for 2-yr 24-hr event
Inflow = 0.44 cfs @ 12.16 hrs, Volume= 0.041 af
Primary = 0.44 cfs @ 12.16 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 2-yr 24-hr Rainfall=3.22"

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Hydrograph for Link PR DR D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.15	0.00	0.15	63.00	0.00	0.00	0.00
13.00	0.08	0.00	0.08	64.00	0.00	0.00	0.00
14.00	0.05	0.00	0.05	65.00	0.00	0.00	0.00
15.00	0.04	0.00	0.04	66.00	0.00	0.00	0.00
16.00	0.03	0.00	0.03	67.00	0.00	0.00	0.00
17.00	0.02	0.00	0.02	68.00	0.00	0.00	0.00
18.00	0.02	0.00	0.02	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR A1: North Lot A1

Runoff = 1.05 cfs @ 12.09 hrs, Volume= 0.087 af, Depth= 4.63"
Routed to Pond A1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.225	98	Permeable Pavement
0.225		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR A1: North Lot A1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	4.63	0.00
1.00	0.05	0.00	0.00	52.00	4.87	4.63	0.00
2.00	0.10	0.01	0.00	53.00	4.87	4.63	0.00
3.00	0.15	0.04	0.01	54.00	4.87	4.63	0.00
4.00	0.21	0.08	0.01	55.00	4.87	4.63	0.00
5.00	0.28	0.13	0.01	56.00	4.87	4.63	0.00
6.00	0.35	0.19	0.01	57.00	4.87	4.63	0.00
7.00	0.44	0.26	0.02	58.00	4.87	4.63	0.00
8.00	0.56	0.37	0.03	59.00	4.87	4.63	0.00
9.00	0.71	0.51	0.04	60.00	4.87	4.63	0.00
10.00	0.92	0.71	0.05	61.00	4.87	4.63	0.00
11.00	1.22	1.00	0.08	62.00	4.87	4.63	0.00
12.00	2.43	2.21	0.68	63.00	4.87	4.63	0.00
13.00	3.65	3.42	0.09	64.00	4.87	4.63	0.00
14.00	3.95	3.71	0.06	65.00	4.87	4.63	0.00
15.00	4.16	3.92	0.04	66.00	4.87	4.63	0.00
16.00	4.31	4.08	0.03	67.00	4.87	4.63	0.00
17.00	4.43	4.19	0.02	68.00	4.87	4.63	0.00
18.00	4.52	4.28	0.02	69.00	4.87	4.63	0.00
19.00	4.59	4.36	0.02	70.00	4.87	4.63	0.00
20.00	4.66	4.42	0.01	71.00	4.87	4.63	0.00
21.00	4.72	4.48	0.01	72.00	4.87	4.63	0.00
22.00	4.78	4.54	0.01				
23.00	4.83	4.59	0.01				
24.00	4.87	4.63	0.01				
25.00	4.87	4.63	0.00				
26.00	4.87	4.63	0.00				
27.00	4.87	4.63	0.00				
28.00	4.87	4.63	0.00				
29.00	4.87	4.63	0.00				
30.00	4.87	4.63	0.00				
31.00	4.87	4.63	0.00				
32.00	4.87	4.63	0.00				
33.00	4.87	4.63	0.00				
34.00	4.87	4.63	0.00				
35.00	4.87	4.63	0.00				
36.00	4.87	4.63	0.00				
37.00	4.87	4.63	0.00				
38.00	4.87	4.63	0.00				
39.00	4.87	4.63	0.00				
40.00	4.87	4.63	0.00				
41.00	4.87	4.63	0.00				
42.00	4.87	4.63	0.00				
43.00	4.87	4.63	0.00				
44.00	4.87	4.63	0.00				
45.00	4.87	4.63	0.00				
46.00	4.87	4.63	0.00				
47.00	4.87	4.63	0.00				
48.00	4.87	4.63	0.00				
49.00	4.87	4.63	0.00				
50.00	4.87	4.63	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR A2: North Lot A3

Runoff = 3.02 cfs @ 12.24 hrs, Volume= 0.300 af, Depth= 2.18"
 Routed to Link PR DP A : PR Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.287	98	Impervious
* 0.042	70	Perm pavement w/out storage
0.322	32	Woods/grass comb., Good, HSG A
0.999	79	Woods/grass comb., Good, HSG D
1.650	73	Weighted Average
1.363		82.61% Pervious Area
0.287		17.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
2.2	130	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
16.5	240	Total			

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR A2: North Lot A3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	2.18	0.00
1.00	0.05	0.00	0.00	52.00	4.87	2.18	0.00
2.00	0.10	0.00	0.00	53.00	4.87	2.18	0.00
3.00	0.15	0.00	0.00	54.00	4.87	2.18	0.00
4.00	0.21	0.00	0.00	55.00	4.87	2.18	0.00
5.00	0.28	0.00	0.00	56.00	4.87	2.18	0.00
6.00	0.35	0.00	0.00	57.00	4.87	2.18	0.00
7.00	0.44	0.00	0.00	58.00	4.87	2.18	0.00
8.00	0.56	0.00	0.00	59.00	4.87	2.18	0.00
9.00	0.71	0.00	0.00	60.00	4.87	2.18	0.00
10.00	0.92	0.01	0.02	61.00	4.87	2.18	0.00
11.00	1.22	0.05	0.10	62.00	4.87	2.18	0.00
12.00	2.43	0.53	1.12	63.00	4.87	2.18	0.00
13.00	3.65	1.28	0.55	64.00	4.87	2.18	0.00
14.00	3.95	1.49	0.32	65.00	4.87	2.18	0.00
15.00	4.16	1.64	0.24	66.00	4.87	2.18	0.00
16.00	4.31	1.76	0.17	67.00	4.87	2.18	0.00
17.00	4.43	1.84	0.13	68.00	4.87	2.18	0.00
18.00	4.52	1.91	0.11	69.00	4.87	2.18	0.00
19.00	4.59	1.97	0.09	70.00	4.87	2.18	0.00
20.00	4.66	2.02	0.08	71.00	4.87	2.18	0.00
21.00	4.72	2.06	0.08	72.00	4.87	2.18	0.00
22.00	4.78	2.11	0.07				
23.00	4.83	2.14	0.06				
24.00	4.87	2.18	0.06				
25.00	4.87	2.18	0.00				
26.00	4.87	2.18	0.00				
27.00	4.87	2.18	0.00				
28.00	4.87	2.18	0.00				
29.00	4.87	2.18	0.00				
30.00	4.87	2.18	0.00				
31.00	4.87	2.18	0.00				
32.00	4.87	2.18	0.00				
33.00	4.87	2.18	0.00				
34.00	4.87	2.18	0.00				
35.00	4.87	2.18	0.00				
36.00	4.87	2.18	0.00				
37.00	4.87	2.18	0.00				
38.00	4.87	2.18	0.00				
39.00	4.87	2.18	0.00				
40.00	4.87	2.18	0.00				
41.00	4.87	2.18	0.00				
42.00	4.87	2.18	0.00				
43.00	4.87	2.18	0.00				
44.00	4.87	2.18	0.00				
45.00	4.87	2.18	0.00				
46.00	4.87	2.18	0.00				
47.00	4.87	2.18	0.00				
48.00	4.87	2.18	0.00				
49.00	4.87	2.18	0.00				
50.00	4.87	2.18	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR B1: North Lot B1

Runoff = 4.92 cfs @ 12.09 hrs, Volume= 0.366 af, Depth= 3.55"
Routed to Pond B1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

	Area (ac)	CN	Description
*	0.034	98	Impervious
*	0.847	98	Permeable Pavement
	0.123	32	Woods/grass comb., Good, HSG A
	0.234	79	Woods/grass comb., Good, HSG D
	1.238	88	Weighted Average
	0.357		28.84% Pervious Area
	0.881		71.16% Impervious Area

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

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR B1: North Lot B1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	3.55	0.00
1.00	0.05	0.00	0.00	52.00	4.87	3.55	0.00
2.00	0.10	0.00	0.00	53.00	4.87	3.55	0.00
3.00	0.15	0.00	0.00	54.00	4.87	3.55	0.00
4.00	0.21	0.00	0.00	55.00	4.87	3.55	0.00
5.00	0.28	0.00	0.00	56.00	4.87	3.55	0.00
6.00	0.35	0.00	0.01	57.00	4.87	3.55	0.00
7.00	0.44	0.02	0.02	58.00	4.87	3.55	0.00
8.00	0.56	0.05	0.05	59.00	4.87	3.55	0.00
9.00	0.71	0.11	0.09	60.00	4.87	3.55	0.00
10.00	0.92	0.21	0.15	61.00	4.87	3.55	0.00
11.00	1.22	0.39	0.28	62.00	4.87	3.55	0.00
12.00	2.43	1.33	3.08	63.00	4.87	3.55	0.00
13.00	3.65	2.41	0.45	64.00	4.87	3.55	0.00
14.00	3.95	2.68	0.29	65.00	4.87	3.55	0.00
15.00	4.16	2.88	0.22	66.00	4.87	3.55	0.00
16.00	4.31	3.02	0.15	67.00	4.87	3.55	0.00
17.00	4.43	3.13	0.12	68.00	4.87	3.55	0.00
18.00	4.52	3.21	0.09	69.00	4.87	3.55	0.00
19.00	4.59	3.28	0.08	70.00	4.87	3.55	0.00
20.00	4.66	3.35	0.08	71.00	4.87	3.55	0.00
21.00	4.72	3.40	0.07	72.00	4.87	3.55	0.00
22.00	4.78	3.46	0.06				
23.00	4.83	3.50	0.06				
24.00	4.87	3.55	0.05				
25.00	4.87	3.55	0.00				
26.00	4.87	3.55	0.00				
27.00	4.87	3.55	0.00				
28.00	4.87	3.55	0.00				
29.00	4.87	3.55	0.00				
30.00	4.87	3.55	0.00				
31.00	4.87	3.55	0.00				
32.00	4.87	3.55	0.00				
33.00	4.87	3.55	0.00				
34.00	4.87	3.55	0.00				
35.00	4.87	3.55	0.00				
36.00	4.87	3.55	0.00				
37.00	4.87	3.55	0.00				
38.00	4.87	3.55	0.00				
39.00	4.87	3.55	0.00				
40.00	4.87	3.55	0.00				
41.00	4.87	3.55	0.00				
42.00	4.87	3.55	0.00				
43.00	4.87	3.55	0.00				
44.00	4.87	3.55	0.00				
45.00	4.87	3.55	0.00				
46.00	4.87	3.55	0.00				
47.00	4.87	3.55	0.00				
48.00	4.87	3.55	0.00				
49.00	4.87	3.55	0.00				
50.00	4.87	3.55	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR B2: North Lot B2

Runoff = 0.15 cfs @ 12.53 hrs, Volume= 0.046 af, Depth= 0.28"
 Routed to Link PR DP B : PR Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.245	98	Impervious
1.655	32	Woods/grass comb., Good, HSG A
0.060	79	Woods/grass comb., Good, HSG D
1.960	42	Weighted Average
1.715		87.50% Pervious Area
0.245		12.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0300	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
1.6	110	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	162	0.0100	5.36	4.21	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, bends & connections
0.4	48	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.6	420	Total			

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR B2: North Lot B2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	0.28	0.00
1.00	0.05	0.00	0.00	52.00	4.87	0.28	0.00
2.00	0.10	0.00	0.00	53.00	4.87	0.28	0.00
3.00	0.15	0.00	0.00	54.00	4.87	0.28	0.00
4.00	0.21	0.00	0.00	55.00	4.87	0.28	0.00
5.00	0.28	0.00	0.00	56.00	4.87	0.28	0.00
6.00	0.35	0.00	0.00	57.00	4.87	0.28	0.00
7.00	0.44	0.00	0.00	58.00	4.87	0.28	0.00
8.00	0.56	0.00	0.00	59.00	4.87	0.28	0.00
9.00	0.71	0.00	0.00	60.00	4.87	0.28	0.00
10.00	0.92	0.00	0.00	61.00	4.87	0.28	0.00
11.00	1.22	0.00	0.00	62.00	4.87	0.28	0.00
12.00	2.43	0.00	0.00	63.00	4.87	0.28	0.00
13.00	3.65	0.05	0.10	64.00	4.87	0.28	0.00
14.00	3.95	0.09	0.08	65.00	4.87	0.28	0.00
15.00	4.16	0.13	0.07	66.00	4.87	0.28	0.00
16.00	4.31	0.16	0.05	67.00	4.87	0.28	0.00
17.00	4.43	0.18	0.04	68.00	4.87	0.28	0.00
18.00	4.52	0.20	0.03	69.00	4.87	0.28	0.00
19.00	4.59	0.21	0.03	70.00	4.87	0.28	0.00
20.00	4.66	0.23	0.03	71.00	4.87	0.28	0.00
21.00	4.72	0.24	0.03	72.00	4.87	0.28	0.00
22.00	4.78	0.26	0.03				
23.00	4.83	0.27	0.02				
24.00	4.87	0.28	0.02				
25.00	4.87	0.28	0.00				
26.00	4.87	0.28	0.00				
27.00	4.87	0.28	0.00				
28.00	4.87	0.28	0.00				
29.00	4.87	0.28	0.00				
30.00	4.87	0.28	0.00				
31.00	4.87	0.28	0.00				
32.00	4.87	0.28	0.00				
33.00	4.87	0.28	0.00				
34.00	4.87	0.28	0.00				
35.00	4.87	0.28	0.00				
36.00	4.87	0.28	0.00				
37.00	4.87	0.28	0.00				
38.00	4.87	0.28	0.00				
39.00	4.87	0.28	0.00				
40.00	4.87	0.28	0.00				
41.00	4.87	0.28	0.00				
42.00	4.87	0.28	0.00				
43.00	4.87	0.28	0.00				
44.00	4.87	0.28	0.00				
45.00	4.87	0.28	0.00				
46.00	4.87	0.28	0.00				
47.00	4.87	0.28	0.00				
48.00	4.87	0.28	0.00				
49.00	4.87	0.28	0.00				
50.00	4.87	0.28	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR B3: North Lot B3

Runoff = 2.21 cfs @ 12.09 hrs, Volume= 0.184 af, Depth= 4.63"
Routed to Pond B3 : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.476	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.476	98	Weighted Average
0.476		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions*Type III 24-hr 10-yr 24-hr Rainfall=4.87"*

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Hydrograph for Subcatchment PR B3: North Lot B3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	4.63	0.00
1.00	0.05	0.00	0.00	52.00	4.87	4.63	0.00
2.00	0.10	0.01	0.01	53.00	4.87	4.63	0.00
3.00	0.15	0.04	0.01	54.00	4.87	4.63	0.00
4.00	0.21	0.08	0.02	55.00	4.87	4.63	0.00
5.00	0.28	0.13	0.03	56.00	4.87	4.63	0.00
6.00	0.35	0.19	0.03	57.00	4.87	4.63	0.00
7.00	0.44	0.26	0.04	58.00	4.87	4.63	0.00
8.00	0.56	0.37	0.05	59.00	4.87	4.63	0.00
9.00	0.71	0.51	0.08	60.00	4.87	4.63	0.00
10.00	0.92	0.71	0.11	61.00	4.87	4.63	0.00
11.00	1.22	1.00	0.16	62.00	4.87	4.63	0.00
12.00	2.43	2.21	1.44	63.00	4.87	4.63	0.00
13.00	3.65	3.42	0.19	64.00	4.87	4.63	0.00
14.00	3.95	3.71	0.12	65.00	4.87	4.63	0.00
15.00	4.16	3.92	0.09	66.00	4.87	4.63	0.00
16.00	4.31	4.08	0.06	67.00	4.87	4.63	0.00
17.00	4.43	4.19	0.05	68.00	4.87	4.63	0.00
18.00	4.52	4.28	0.04	69.00	4.87	4.63	0.00
19.00	4.59	4.36	0.03	70.00	4.87	4.63	0.00
20.00	4.66	4.42	0.03	71.00	4.87	4.63	0.00
21.00	4.72	4.48	0.03	72.00	4.87	4.63	0.00
22.00	4.78	4.54	0.03				
23.00	4.83	4.59	0.02				
24.00	4.87	4.63	0.02				
25.00	4.87	4.63	0.00				
26.00	4.87	4.63	0.00				
27.00	4.87	4.63	0.00				
28.00	4.87	4.63	0.00				
29.00	4.87	4.63	0.00				
30.00	4.87	4.63	0.00				
31.00	4.87	4.63	0.00				
32.00	4.87	4.63	0.00				
33.00	4.87	4.63	0.00				
34.00	4.87	4.63	0.00				
35.00	4.87	4.63	0.00				
36.00	4.87	4.63	0.00				
37.00	4.87	4.63	0.00				
38.00	4.87	4.63	0.00				
39.00	4.87	4.63	0.00				
40.00	4.87	4.63	0.00				
41.00	4.87	4.63	0.00				
42.00	4.87	4.63	0.00				
43.00	4.87	4.63	0.00				
44.00	4.87	4.63	0.00				
45.00	4.87	4.63	0.00				
46.00	4.87	4.63	0.00				
47.00	4.87	4.63	0.00				
48.00	4.87	4.63	0.00				
49.00	4.87	4.63	0.00				
50.00	4.87	4.63	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR B4: North Lot B4

Runoff = 0.31 cfs @ 12.10 hrs, Volume= 0.023 af, Depth= 1.94"
Routed to Pond B4 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.000	98	Impervious
* 0.143	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.143	70	Weighted Average
0.143		100.00% Pervious Area

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

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR B4: North Lot B4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	1.94	0.00
1.00	0.05	0.00	0.00	52.00	4.87	1.94	0.00
2.00	0.10	0.00	0.00	53.00	4.87	1.94	0.00
3.00	0.15	0.00	0.00	54.00	4.87	1.94	0.00
4.00	0.21	0.00	0.00	55.00	4.87	1.94	0.00
5.00	0.28	0.00	0.00	56.00	4.87	1.94	0.00
6.00	0.35	0.00	0.00	57.00	4.87	1.94	0.00
7.00	0.44	0.00	0.00	58.00	4.87	1.94	0.00
8.00	0.56	0.00	0.00	59.00	4.87	1.94	0.00
9.00	0.71	0.00	0.00	60.00	4.87	1.94	0.00
10.00	0.92	0.00	0.00	61.00	4.87	1.94	0.00
11.00	1.22	0.03	0.01	62.00	4.87	1.94	0.00
12.00	2.43	0.42	0.17	63.00	4.87	1.94	0.00
13.00	3.65	1.10	0.04	64.00	4.87	1.94	0.00
14.00	3.95	1.30	0.02	65.00	4.87	1.94	0.00
15.00	4.16	1.44	0.02	66.00	4.87	1.94	0.00
16.00	4.31	1.54	0.01	67.00	4.87	1.94	0.00
17.00	4.43	1.62	0.01	68.00	4.87	1.94	0.00
18.00	4.52	1.69	0.01	69.00	4.87	1.94	0.00
19.00	4.59	1.74	0.01	70.00	4.87	1.94	0.00
20.00	4.66	1.79	0.01	71.00	4.87	1.94	0.00
21.00	4.72	1.83	0.01	72.00	4.87	1.94	0.00
22.00	4.78	1.87	0.01				
23.00	4.83	1.91	0.00				
24.00	4.87	1.94	0.00				
25.00	4.87	1.94	0.00				
26.00	4.87	1.94	0.00				
27.00	4.87	1.94	0.00				
28.00	4.87	1.94	0.00				
29.00	4.87	1.94	0.00				
30.00	4.87	1.94	0.00				
31.00	4.87	1.94	0.00				
32.00	4.87	1.94	0.00				
33.00	4.87	1.94	0.00				
34.00	4.87	1.94	0.00				
35.00	4.87	1.94	0.00				
36.00	4.87	1.94	0.00				
37.00	4.87	1.94	0.00				
38.00	4.87	1.94	0.00				
39.00	4.87	1.94	0.00				
40.00	4.87	1.94	0.00				
41.00	4.87	1.94	0.00				
42.00	4.87	1.94	0.00				
43.00	4.87	1.94	0.00				
44.00	4.87	1.94	0.00				
45.00	4.87	1.94	0.00				
46.00	4.87	1.94	0.00				
47.00	4.87	1.94	0.00				
48.00	4.87	1.94	0.00				
49.00	4.87	1.94	0.00				
50.00	4.87	1.94	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR C: North Lot C

Runoff = 0.07 cfs @ 12.44 hrs, Volume= 0.015 af, Depth= 0.36"
 Routed to Link PR DP C : PR Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.092	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.398	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.490	44	Weighted Average
0.398		81.22% Pervious Area
0.092		18.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	50	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	30	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	171	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR C: North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	0.36	0.00
1.00	0.05	0.00	0.00	52.00	4.87	0.36	0.00
2.00	0.10	0.00	0.00	53.00	4.87	0.36	0.00
3.00	0.15	0.00	0.00	54.00	4.87	0.36	0.00
4.00	0.21	0.00	0.00	55.00	4.87	0.36	0.00
5.00	0.28	0.00	0.00	56.00	4.87	0.36	0.00
6.00	0.35	0.00	0.00	57.00	4.87	0.36	0.00
7.00	0.44	0.00	0.00	58.00	4.87	0.36	0.00
8.00	0.56	0.00	0.00	59.00	4.87	0.36	0.00
9.00	0.71	0.00	0.00	60.00	4.87	0.36	0.00
10.00	0.92	0.00	0.00	61.00	4.87	0.36	0.00
11.00	1.22	0.00	0.00	62.00	4.87	0.36	0.00
12.00	2.43	0.00	0.00	63.00	4.87	0.36	0.00
13.00	3.65	0.09	0.03	64.00	4.87	0.36	0.00
14.00	3.95	0.14	0.02	65.00	4.87	0.36	0.00
15.00	4.16	0.18	0.02	66.00	4.87	0.36	0.00
16.00	4.31	0.22	0.02	67.00	4.87	0.36	0.00
17.00	4.43	0.24	0.01	68.00	4.87	0.36	0.00
18.00	4.52	0.27	0.01	69.00	4.87	0.36	0.00
19.00	4.59	0.28	0.01	70.00	4.87	0.36	0.00
20.00	4.66	0.30	0.01	71.00	4.87	0.36	0.00
21.00	4.72	0.32	0.01	72.00	4.87	0.36	0.00
22.00	4.78	0.33	0.01				
23.00	4.83	0.35	0.01				
24.00	4.87	0.36	0.01				
25.00	4.87	0.36	0.00				
26.00	4.87	0.36	0.00				
27.00	4.87	0.36	0.00				
28.00	4.87	0.36	0.00				
29.00	4.87	0.36	0.00				
30.00	4.87	0.36	0.00				
31.00	4.87	0.36	0.00				
32.00	4.87	0.36	0.00				
33.00	4.87	0.36	0.00				
34.00	4.87	0.36	0.00				
35.00	4.87	0.36	0.00				
36.00	4.87	0.36	0.00				
37.00	4.87	0.36	0.00				
38.00	4.87	0.36	0.00				
39.00	4.87	0.36	0.00				
40.00	4.87	0.36	0.00				
41.00	4.87	0.36	0.00				
42.00	4.87	0.36	0.00				
43.00	4.87	0.36	0.00				
44.00	4.87	0.36	0.00				
45.00	4.87	0.36	0.00				
46.00	4.87	0.36	0.00				
47.00	4.87	0.36	0.00				
48.00	4.87	0.36	0.00				
49.00	4.87	0.36	0.00				
50.00	4.87	0.36	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR D1: Jordan Lot

Runoff = 1.63 cfs @ 12.14 hrs, Volume= 0.132 af, Depth= 2.43"
 Routed to Pond D : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.400	98	Impervious
0.199	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.653	76	Weighted Average
0.253		38.74% Pervious Area
0.400		61.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	24	0.0021	0.05		Sheet Flow, Grass: Short n= 0.150 P2= 3.22"
1.6	289	0.0225	3.04		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.3	313	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR D1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	2.43	0.00
1.00	0.05	0.00	0.00	52.00	4.87	2.43	0.00
2.00	0.10	0.00	0.00	53.00	4.87	2.43	0.00
3.00	0.15	0.00	0.00	54.00	4.87	2.43	0.00
4.00	0.21	0.00	0.00	55.00	4.87	2.43	0.00
5.00	0.28	0.00	0.00	56.00	4.87	2.43	0.00
6.00	0.35	0.00	0.00	57.00	4.87	2.43	0.00
7.00	0.44	0.00	0.00	58.00	4.87	2.43	0.00
8.00	0.56	0.00	0.00	59.00	4.87	2.43	0.00
9.00	0.71	0.00	0.00	60.00	4.87	2.43	0.00
10.00	0.92	0.02	0.02	61.00	4.87	2.43	0.00
11.00	1.22	0.09	0.06	62.00	4.87	2.43	0.00
12.00	2.43	0.66	0.79	63.00	4.87	2.43	0.00
13.00	3.65	1.48	0.20	64.00	4.87	2.43	0.00
14.00	3.95	1.70	0.13	65.00	4.87	2.43	0.00
15.00	4.16	1.86	0.10	66.00	4.87	2.43	0.00
16.00	4.31	1.98	0.07	67.00	4.87	2.43	0.00
17.00	4.43	2.07	0.06	68.00	4.87	2.43	0.00
18.00	4.52	2.15	0.04	69.00	4.87	2.43	0.00
19.00	4.59	2.20	0.04	70.00	4.87	2.43	0.00
20.00	4.66	2.26	0.03	71.00	4.87	2.43	0.00
21.00	4.72	2.31	0.03	72.00	4.87	2.43	0.00
22.00	4.78	2.35	0.03				
23.00	4.83	2.39	0.03				
24.00	4.87	2.43	0.02				
25.00	4.87	2.43	0.00				
26.00	4.87	2.43	0.00				
27.00	4.87	2.43	0.00				
28.00	4.87	2.43	0.00				
29.00	4.87	2.43	0.00				
30.00	4.87	2.43	0.00				
31.00	4.87	2.43	0.00				
32.00	4.87	2.43	0.00				
33.00	4.87	2.43	0.00				
34.00	4.87	2.43	0.00				
35.00	4.87	2.43	0.00				
36.00	4.87	2.43	0.00				
37.00	4.87	2.43	0.00				
38.00	4.87	2.43	0.00				
39.00	4.87	2.43	0.00				
40.00	4.87	2.43	0.00				
41.00	4.87	2.43	0.00				
42.00	4.87	2.43	0.00				
43.00	4.87	2.43	0.00				
44.00	4.87	2.43	0.00				
45.00	4.87	2.43	0.00				
46.00	4.87	2.43	0.00				
47.00	4.87	2.43	0.00				
48.00	4.87	2.43	0.00				
49.00	4.87	2.43	0.00				
50.00	4.87	2.43	0.00				

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR D2: Front Yard

Runoff = 1.11 cfs @ 12.15 hrs, Volume= 0.094 af, Depth= 1.94"
 Routed to Link PR DR D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.123	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.292	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	70	Weighted Average
0.459		78.87% Pervious Area
0.123		21.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	75	0.0267	1.14		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.4	120	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.2	328	Total			

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR D2: Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	1.94	0.00
1.00	0.05	0.00	0.00	52.00	4.87	1.94	0.00
2.00	0.10	0.00	0.00	53.00	4.87	1.94	0.00
3.00	0.15	0.00	0.00	54.00	4.87	1.94	0.00
4.00	0.21	0.00	0.00	55.00	4.87	1.94	0.00
5.00	0.28	0.00	0.00	56.00	4.87	1.94	0.00
6.00	0.35	0.00	0.00	57.00	4.87	1.94	0.00
7.00	0.44	0.00	0.00	58.00	4.87	1.94	0.00
8.00	0.56	0.00	0.00	59.00	4.87	1.94	0.00
9.00	0.71	0.00	0.00	60.00	4.87	1.94	0.00
10.00	0.92	0.00	0.00	61.00	4.87	1.94	0.00
11.00	1.22	0.03	0.03	62.00	4.87	1.94	0.00
12.00	2.43	0.42	0.48	63.00	4.87	1.94	0.00
13.00	3.65	1.10	0.16	64.00	4.87	1.94	0.00
14.00	3.95	1.30	0.10	65.00	4.87	1.94	0.00
15.00	4.16	1.44	0.08	66.00	4.87	1.94	0.00
16.00	4.31	1.54	0.06	67.00	4.87	1.94	0.00
17.00	4.43	1.62	0.04	68.00	4.87	1.94	0.00
18.00	4.52	1.69	0.03	69.00	4.87	1.94	0.00
19.00	4.59	1.74	0.03	70.00	4.87	1.94	0.00
20.00	4.66	1.79	0.03	71.00	4.87	1.94	0.00
21.00	4.72	1.83	0.02	72.00	4.87	1.94	0.00
22.00	4.78	1.87	0.02				
23.00	4.83	1.91	0.02				
24.00	4.87	1.94	0.02				
25.00	4.87	1.94	0.00				
26.00	4.87	1.94	0.00				
27.00	4.87	1.94	0.00				
28.00	4.87	1.94	0.00				
29.00	4.87	1.94	0.00				
30.00	4.87	1.94	0.00				
31.00	4.87	1.94	0.00				
32.00	4.87	1.94	0.00				
33.00	4.87	1.94	0.00				
34.00	4.87	1.94	0.00				
35.00	4.87	1.94	0.00				
36.00	4.87	1.94	0.00				
37.00	4.87	1.94	0.00				
38.00	4.87	1.94	0.00				
39.00	4.87	1.94	0.00				
40.00	4.87	1.94	0.00				
41.00	4.87	1.94	0.00				
42.00	4.87	1.94	0.00				
43.00	4.87	1.94	0.00				
44.00	4.87	1.94	0.00				
45.00	4.87	1.94	0.00				
46.00	4.87	1.94	0.00				
47.00	4.87	1.94	0.00				
48.00	4.87	1.94	0.00				
49.00	4.87	1.94	0.00				
50.00	4.87	1.94	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR E1: Jordan Lot

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.013 af, Depth= 3.45"
Routed to Pond 2P : WQS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.038	98	Impervious
0.008	32	Woods/grass comb., Good, HSG A
0.046	87	Weighted Average
0.008		17.39% Pervious Area
0.038		82.61% Impervious Area

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

Belmont Hill School - Proposed Conditions*Type III 24-hr 10-yr 24-hr Rainfall=4.87"*

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Hydrograph for Subcatchment PR E1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	3.45	0.00
1.00	0.05	0.00	0.00	52.00	4.87	3.45	0.00
2.00	0.10	0.00	0.00	53.00	4.87	3.45	0.00
3.00	0.15	0.00	0.00	54.00	4.87	3.45	0.00
4.00	0.21	0.00	0.00	55.00	4.87	3.45	0.00
5.00	0.28	0.00	0.00	56.00	4.87	3.45	0.00
6.00	0.35	0.00	0.00	57.00	4.87	3.45	0.00
7.00	0.44	0.01	0.00	58.00	4.87	3.45	0.00
8.00	0.56	0.04	0.00	59.00	4.87	3.45	0.00
9.00	0.71	0.09	0.00	60.00	4.87	3.45	0.00
10.00	0.92	0.18	0.01	61.00	4.87	3.45	0.00
11.00	1.22	0.35	0.01	62.00	4.87	3.45	0.00
12.00	2.43	1.26	0.11	63.00	4.87	3.45	0.00
13.00	3.65	2.32	0.02	64.00	4.87	3.45	0.00
14.00	3.95	2.59	0.01	65.00	4.87	3.45	0.00
15.00	4.16	2.78	0.01	66.00	4.87	3.45	0.00
16.00	4.31	2.93	0.01	67.00	4.87	3.45	0.00
17.00	4.43	3.03	0.00	68.00	4.87	3.45	0.00
18.00	4.52	3.12	0.00	69.00	4.87	3.45	0.00
19.00	4.59	3.19	0.00	70.00	4.87	3.45	0.00
20.00	4.66	3.25	0.00	71.00	4.87	3.45	0.00
21.00	4.72	3.31	0.00	72.00	4.87	3.45	0.00
22.00	4.78	3.36	0.00				
23.00	4.83	3.40	0.00				
24.00	4.87	3.45	0.00				
25.00	4.87	3.45	0.00				
26.00	4.87	3.45	0.00				
27.00	4.87	3.45	0.00				
28.00	4.87	3.45	0.00				
29.00	4.87	3.45	0.00				
30.00	4.87	3.45	0.00				
31.00	4.87	3.45	0.00				
32.00	4.87	3.45	0.00				
33.00	4.87	3.45	0.00				
34.00	4.87	3.45	0.00				
35.00	4.87	3.45	0.00				
36.00	4.87	3.45	0.00				
37.00	4.87	3.45	0.00				
38.00	4.87	3.45	0.00				
39.00	4.87	3.45	0.00				
40.00	4.87	3.45	0.00				
41.00	4.87	3.45	0.00				
42.00	4.87	3.45	0.00				
43.00	4.87	3.45	0.00				
44.00	4.87	3.45	0.00				
45.00	4.87	3.45	0.00				
46.00	4.87	3.45	0.00				
47.00	4.87	3.45	0.00				
48.00	4.87	3.45	0.00				
49.00	4.87	3.45	0.00				
50.00	4.87	3.45	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR E2: Jordan Lot

Runoff = 0.43 cfs @ 12.17 hrs, Volume= 0.037 af, Depth= 2.26"
 Routed to Link PR DP E : EX BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.128	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.071	32	Woods/grass comb., Good, HSG A
0.199	74	Weighted Average
0.071		35.68% Pervious Area
0.128		64.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	55	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.3	45	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0					Direct Entry,
11.8	100	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR E2: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	2.26	0.00
1.00	0.05	0.00	0.00	52.00	4.87	2.26	0.00
2.00	0.10	0.00	0.00	53.00	4.87	2.26	0.00
3.00	0.15	0.00	0.00	54.00	4.87	2.26	0.00
4.00	0.21	0.00	0.00	55.00	4.87	2.26	0.00
5.00	0.28	0.00	0.00	56.00	4.87	2.26	0.00
6.00	0.35	0.00	0.00	57.00	4.87	2.26	0.00
7.00	0.44	0.00	0.00	58.00	4.87	2.26	0.00
8.00	0.56	0.00	0.00	59.00	4.87	2.26	0.00
9.00	0.71	0.00	0.00	60.00	4.87	2.26	0.00
10.00	0.92	0.01	0.00	61.00	4.87	2.26	0.00
11.00	1.22	0.07	0.01	62.00	4.87	2.26	0.00
12.00	2.43	0.57	0.18	63.00	4.87	2.26	0.00
13.00	3.65	1.35	0.06	64.00	4.87	2.26	0.00
14.00	3.95	1.56	0.04	65.00	4.87	2.26	0.00
15.00	4.16	1.71	0.03	66.00	4.87	2.26	0.00
16.00	4.31	1.83	0.02	67.00	4.87	2.26	0.00
17.00	4.43	1.92	0.02	68.00	4.87	2.26	0.00
18.00	4.52	1.99	0.01	69.00	4.87	2.26	0.00
19.00	4.59	2.04	0.01	70.00	4.87	2.26	0.00
20.00	4.66	2.10	0.01	71.00	4.87	2.26	0.00
21.00	4.72	2.14	0.01	72.00	4.87	2.26	0.00
22.00	4.78	2.19	0.01				
23.00	4.83	2.23	0.01				
24.00	4.87	2.26	0.01				
25.00	4.87	2.26	0.00				
26.00	4.87	2.26	0.00				
27.00	4.87	2.26	0.00				
28.00	4.87	2.26	0.00				
29.00	4.87	2.26	0.00				
30.00	4.87	2.26	0.00				
31.00	4.87	2.26	0.00				
32.00	4.87	2.26	0.00				
33.00	4.87	2.26	0.00				
34.00	4.87	2.26	0.00				
35.00	4.87	2.26	0.00				
36.00	4.87	2.26	0.00				
37.00	4.87	2.26	0.00				
38.00	4.87	2.26	0.00				
39.00	4.87	2.26	0.00				
40.00	4.87	2.26	0.00				
41.00	4.87	2.26	0.00				
42.00	4.87	2.26	0.00				
43.00	4.87	2.26	0.00				
44.00	4.87	2.26	0.00				
45.00	4.87	2.26	0.00				
46.00	4.87	2.26	0.00				
47.00	4.87	2.26	0.00				
48.00	4.87	2.26	0.00				
49.00	4.87	2.26	0.00				
50.00	4.87	2.26	0.00				

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Subcatchment PR F: Upper Lot

Runoff = 2.07 cfs @ 12.09 hrs, Volume= 0.152 af, Depth= 3.25"
 Routed to Link PR DP F : PR Main Campus

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr 24-hr Rainfall=4.87"

Area (ac)	CN	Description
* 0.356	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.135	79	Woods/grass comb., Good, HSG D
0.069	32	Woods/grass comb., Good, HSG A
0.560	85	Weighted Average
0.204		36.43% Pervious Area
0.356		63.57% Impervious Area

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

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Subcatchment PR F: Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	4.87	3.25	0.00
1.00	0.05	0.00	0.00	52.00	4.87	3.25	0.00
2.00	0.10	0.00	0.00	53.00	4.87	3.25	0.00
3.00	0.15	0.00	0.00	54.00	4.87	3.25	0.00
4.00	0.21	0.00	0.00	55.00	4.87	3.25	0.00
5.00	0.28	0.00	0.00	56.00	4.87	3.25	0.00
6.00	0.35	0.00	0.00	57.00	4.87	3.25	0.00
7.00	0.44	0.00	0.00	58.00	4.87	3.25	0.00
8.00	0.56	0.02	0.01	59.00	4.87	3.25	0.00
9.00	0.71	0.06	0.03	60.00	4.87	3.25	0.00
10.00	0.92	0.14	0.05	61.00	4.87	3.25	0.00
11.00	1.22	0.28	0.10	62.00	4.87	3.25	0.00
12.00	2.43	1.13	1.28	63.00	4.87	3.25	0.00
13.00	3.65	2.15	0.20	64.00	4.87	3.25	0.00
14.00	3.95	2.41	0.13	65.00	4.87	3.25	0.00
15.00	4.16	2.60	0.10	66.00	4.87	3.25	0.00
16.00	4.31	2.74	0.07	67.00	4.87	3.25	0.00
17.00	4.43	2.84	0.05	68.00	4.87	3.25	0.00
18.00	4.52	2.93	0.04	69.00	4.87	3.25	0.00
19.00	4.59	2.99	0.04	70.00	4.87	3.25	0.00
20.00	4.66	3.06	0.03	71.00	4.87	3.25	0.00
21.00	4.72	3.11	0.03	72.00	4.87	3.25	0.00
22.00	4.78	3.16	0.03				
23.00	4.83	3.21	0.02				
24.00	4.87	3.25	0.02				
25.00	4.87	3.25	0.00				
26.00	4.87	3.25	0.00				
27.00	4.87	3.25	0.00				
28.00	4.87	3.25	0.00				
29.00	4.87	3.25	0.00				
30.00	4.87	3.25	0.00				
31.00	4.87	3.25	0.00				
32.00	4.87	3.25	0.00				
33.00	4.87	3.25	0.00				
34.00	4.87	3.25	0.00				
35.00	4.87	3.25	0.00				
36.00	4.87	3.25	0.00				
37.00	4.87	3.25	0.00				
38.00	4.87	3.25	0.00				
39.00	4.87	3.25	0.00				
40.00	4.87	3.25	0.00				
41.00	4.87	3.25	0.00				
42.00	4.87	3.25	0.00				
43.00	4.87	3.25	0.00				
44.00	4.87	3.25	0.00				
45.00	4.87	3.25	0.00				
46.00	4.87	3.25	0.00				
47.00	4.87	3.25	0.00				
48.00	4.87	3.25	0.00				
49.00	4.87	3.25	0.00				
50.00	4.87	3.25	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Pond 2P: WQS

Inflow Area = 0.046 ac, 82.61% Impervious, Inflow Depth = 3.45" for 10-yr 24-hr event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 0.013 af
Outflow = 0.18 cfs @ 12.09 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.09 hrs, Volume= 0.013 af
Routed to Link PR DP E : EX BMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 249.21' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 12.09 hrs HW=249.20' TW=0.00' (Dynamic Tailwater)
↑1=Orifice/Grate (Orifice Controls 0.17 cfs @ 1.53 fps)

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Pond 2P: WQS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	249.00	0.00	51.00	0.00	249.00	0.00
1.00	0.00	249.00	0.00	52.00	0.00	249.00	0.00
2.00	0.00	249.00	0.00	53.00	0.00	249.00	0.00
3.00	0.00	249.00	0.00	54.00	0.00	249.00	0.00
4.00	0.00	249.00	0.00	55.00	0.00	249.00	0.00
5.00	0.00	249.00	0.00	56.00	0.00	249.00	0.00
6.00	0.00	249.01	0.00	57.00	0.00	249.00	0.00
7.00	0.00	249.01	0.00	58.00	0.00	249.00	0.00
8.00	0.00	249.02	0.00	59.00	0.00	249.00	0.00
9.00	0.00	249.03	0.00	60.00	0.00	249.00	0.00
10.00	0.01	249.03	0.01	61.00	0.00	249.00	0.00
11.00	0.01	249.05	0.01	62.00	0.00	249.00	0.00
12.00	0.11	249.16	0.11	63.00	0.00	249.00	0.00
13.00	0.02	249.06	0.02	64.00	0.00	249.00	0.00
14.00	0.01	249.05	0.01	65.00	0.00	249.00	0.00
15.00	0.01	249.04	0.01	66.00	0.00	249.00	0.00
16.00	0.01	249.04	0.01	67.00	0.00	249.00	0.00
17.00	0.00	249.03	0.00	68.00	0.00	249.00	0.00
18.00	0.00	249.03	0.00	69.00	0.00	249.00	0.00
19.00	0.00	249.03	0.00	70.00	0.00	249.00	0.00
20.00	0.00	249.02	0.00	71.00	0.00	249.00	0.00
21.00	0.00	249.02	0.00	72.00	0.00	249.00	0.00
22.00	0.00	249.02	0.00				
23.00	0.00	249.02	0.00				
24.00	0.00	249.02	0.00				
25.00	0.00	249.00	0.00				
26.00	0.00	249.00	0.00				
27.00	0.00	249.00	0.00				
28.00	0.00	249.00	0.00				
29.00	0.00	249.00	0.00				
30.00	0.00	249.00	0.00				
31.00	0.00	249.00	0.00				
32.00	0.00	249.00	0.00				
33.00	0.00	249.00	0.00				
34.00	0.00	249.00	0.00				
35.00	0.00	249.00	0.00				
36.00	0.00	249.00	0.00				
37.00	0.00	249.00	0.00				
38.00	0.00	249.00	0.00				
39.00	0.00	249.00	0.00				
40.00	0.00	249.00	0.00				
41.00	0.00	249.00	0.00				
42.00	0.00	249.00	0.00				
43.00	0.00	249.00	0.00				
44.00	0.00	249.00	0.00				
45.00	0.00	249.00	0.00				
46.00	0.00	249.00	0.00				
47.00	0.00	249.00	0.00				
48.00	0.00	249.00	0.00				
49.00	0.00	249.00	0.00				
50.00	0.00	249.00	0.00				

Belmont Hill School - Proposed Conditions*Type III 24-hr 10-yr 24-hr Rainfall=4.87"*

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Stage-Area-Storage for Pond 2P: WQS

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
249.00	0.000	249.51	0.000
249.01	0.000	249.52	0.000
249.02	0.000	249.53	0.000
249.03	0.000	249.54	0.000
249.04	0.000	249.55	0.000
249.05	0.000	249.56	0.000
249.06	0.000	249.57	0.000
249.07	0.000	249.58	0.000
249.08	0.000	249.59	0.000
249.09	0.000	249.60	0.000
249.10	0.000	249.61	0.000
249.11	0.000	249.62	0.000
249.12	0.000	249.63	0.000
249.13	0.000	249.64	0.000
249.14	0.000	249.65	0.000
249.15	0.000	249.66	0.000
249.16	0.000	249.67	0.000
249.17	0.000	249.68	0.000
249.18	0.000	249.69	0.000
249.19	0.000	249.70	0.000
249.20	0.000	249.71	0.000
249.21	0.000	249.72	0.000
249.22	0.000	249.73	0.000
249.23	0.000	249.74	0.000
249.24	0.000	249.75	0.000
249.25	0.000	249.76	0.000
249.26	0.000	249.77	0.000
249.27	0.000	249.78	0.000
249.28	0.000	249.79	0.000
249.29	0.000	249.80	0.000
249.30	0.000	249.81	0.000
249.31	0.000	249.82	0.000
249.32	0.000	249.83	0.000
249.33	0.000	249.84	0.000
249.34	0.000	249.85	0.000
249.35	0.000	249.86	0.000
249.36	0.000	249.87	0.000
249.37	0.000	249.88	0.000
249.38	0.000	249.89	0.000
249.39	0.000	249.90	0.000
249.40	0.000	249.91	0.000
249.41	0.000	249.92	0.000
249.42	0.000	249.93	0.000
249.43	0.000	249.94	0.000
249.44	0.000	249.95	0.000
249.45	0.000	249.96	0.000
249.46	0.000	249.97	0.000
249.47	0.000	249.98	0.000
249.48	0.000	249.99	0.000
249.49	0.000	250.00	0.000
249.50	0.000		

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Pond A1: Porous Pave

Inflow Area = 0.225 ac, 100.00% Impervious, Inflow Depth = 4.63" for 10-yr 24-hr event
Inflow = 1.05 cfs @ 12.09 hrs, Volume= 0.087 af
Outflow = 0.16 cfs @ 12.58 hrs, Volume= 0.087 af, Atten= 85%, Lag= 29.5 min
Discarded = 0.16 cfs @ 12.58 hrs, Volume= 0.087 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link PR DP A : PR Park Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 0.36' @ 12.58 hrs Surf.Area= 9,800 sf Storage= 1,067 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 40.3 min (788.8 - 748.5)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,880 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 19,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	9,800	0	0
2.00	9,800	19,600	19,600

Device	Routing	Invert	Outlet Devices
#0	Primary	2.00'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.588 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.16 cfs @ 12.58 hrs HW=0.36' (Free Discharge)
↑**1=Exfiltration** (Controls 0.16 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=0.00' (Dynamic Tailwater)

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Pond A1: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	0.00	0.00	0.00	0.00
2.50	0.01	0	0.00	0.01	0.01	0.00
5.00	0.01	0	0.00	0.01	0.01	0.00
7.50	0.02	0	0.00	0.02	0.02	0.00
10.00	0.05	0	0.00	0.05	0.05	0.00
12.50	0.22	1,059	0.36	0.16	0.16	0.00
15.00	0.04	356	0.12	0.14	0.14	0.00
17.50	0.02	0	0.00	0.03	0.03	0.00
20.00	0.01	0	0.00	0.02	0.02	0.00
22.50	0.01	0	0.00	0.02	0.02	0.00
25.00	0.00	0	0.00	0.00	0.00	0.00
27.50	0.00	0	0.00	0.00	0.00	0.00
30.00	0.00	0	0.00	0.00	0.00	0.00
32.50	0.00	0	0.00	0.00	0.00	0.00
35.00	0.00	0	0.00	0.00	0.00	0.00
37.50	0.00	0	0.00	0.00	0.00	0.00
40.00	0.00	0	0.00	0.00	0.00	0.00
42.50	0.00	0	0.00	0.00	0.00	0.00
45.00	0.00	0	0.00	0.00	0.00	0.00
47.50	0.00	0	0.00	0.00	0.00	0.00
50.00	0.00	0	0.00	0.00	0.00	0.00
52.50	0.00	0	0.00	0.00	0.00	0.00
55.00	0.00	0	0.00	0.00	0.00	0.00
57.50	0.00	0	0.00	0.00	0.00	0.00
60.00	0.00	0	0.00	0.00	0.00	0.00
62.50	0.00	0	0.00	0.00	0.00	0.00
65.00	0.00	0	0.00	0.00	0.00	0.00
67.50	0.00	0	0.00	0.00	0.00	0.00
70.00	0.00	0	0.00	0.00	0.00	0.00
72.50	0.00	0	0.00	0.00	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Stage-Area-Storage for Pond A1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	9,800	0	1.02	9,800	2,999
0.02	9,800	59	1.04	9,800	3,058
0.04	9,800	118	1.06	9,800	3,116
0.06	9,800	176	1.08	9,800	3,175
0.08	9,800	235	1.10	9,800	3,234
0.10	9,800	294	1.12	9,800	3,293
0.12	9,800	353	1.14	9,800	3,352
0.14	9,800	412	1.16	9,800	3,410
0.16	9,800	470	1.18	9,800	3,469
0.18	9,800	529	1.20	9,800	3,528
0.20	9,800	588	1.22	9,800	3,587
0.22	9,800	647	1.24	9,800	3,646
0.24	9,800	706	1.26	9,800	3,704
0.26	9,800	764	1.28	9,800	3,763
0.28	9,800	823	1.30	9,800	3,822
0.30	9,800	882	1.32	9,800	3,881
0.32	9,800	941	1.34	9,800	3,940
0.34	9,800	1,000	1.36	9,800	3,998
0.36	9,800	1,058	1.38	9,800	4,057
0.38	9,800	1,117	1.40	9,800	4,116
0.40	9,800	1,176	1.42	9,800	4,175
0.42	9,800	1,235	1.44	9,800	4,234
0.44	9,800	1,294	1.46	9,800	4,292
0.46	9,800	1,352	1.48	9,800	4,351
0.48	9,800	1,411	1.50	9,800	4,410
0.50	9,800	1,470	1.52	9,800	4,469
0.52	9,800	1,529	1.54	9,800	4,528
0.54	9,800	1,588	1.56	9,800	4,586
0.56	9,800	1,646	1.58	9,800	4,645
0.58	9,800	1,705	1.60	9,800	4,704
0.60	9,800	1,764	1.62	9,800	4,763
0.62	9,800	1,823	1.64	9,800	4,822
0.64	9,800	1,882	1.66	9,800	4,880
0.66	9,800	1,940	1.68	9,800	4,939
0.68	9,800	1,999	1.70	9,800	4,998
0.70	9,800	2,058	1.72	9,800	5,057
0.72	9,800	2,117	1.74	9,800	5,116
0.74	9,800	2,176	1.76	9,800	5,174
0.76	9,800	2,234	1.78	9,800	5,233
0.78	9,800	2,293	1.80	9,800	5,292
0.80	9,800	2,352	1.82	9,800	5,351
0.82	9,800	2,411	1.84	9,800	5,410
0.84	9,800	2,470	1.86	9,800	5,468
0.86	9,800	2,528	1.88	9,800	5,527
0.88	9,800	2,587	1.90	9,800	5,586
0.90	9,800	2,646	1.92	9,800	5,645
0.92	9,800	2,705	1.94	9,800	5,704
0.94	9,800	2,764	1.96	9,800	5,762
0.96	9,800	2,822	1.98	9,800	5,821
0.98	9,800	2,881	2.00	9,800	5,880
1.00	9,800	2,940			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Pond B1: Porous Pave

Inflow Area = 1.238 ac, 71.16% Impervious, Inflow Depth = 3.55" for 10-yr 24-hr event
 Inflow = 4.92 cfs @ 12.09 hrs, Volume= 0.366 af
 Outflow = 0.43 cfs @ 13.06 hrs, Volume= 0.366 af, Atten= 91%, Lag= 58.0 min
 Discarded = 0.43 cfs @ 13.06 hrs, Volume= 0.366 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 0.58' @ 13.06 hrs Surf.Area= 36,800 sf Storage= 6,355 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 128.9 min (927.8 - 798.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	22,080 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 73,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	36,800	0	0
2.00	36,800	73,600	73,600

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.391 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.43 cfs @ 13.06 hrs HW=0.58' (Free Discharge)
 ↑1=Exfiltration - TP8 (Controls 0.43 cfs)

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Pond B1: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.04	0	0.00	0.04
10.00	0.15	0	0.00	0.15
12.50	1.10	5,992	0.54	0.42
15.00	0.22	5,484	0.50	0.42
17.50	0.11	3,257	0.29	0.38
20.00	0.08	773	0.07	0.34
22.50	0.06	0	0.00	0.12
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Stage-Area-Storage for Pond B1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	36,800	0	1.02	36,800	11,261
0.02	36,800	221	1.04	36,800	11,482
0.04	36,800	442	1.06	36,800	11,702
0.06	36,800	662	1.08	36,800	11,923
0.08	36,800	883	1.10	36,800	12,144
0.10	36,800	1,104	1.12	36,800	12,365
0.12	36,800	1,325	1.14	36,800	12,586
0.14	36,800	1,546	1.16	36,800	12,806
0.16	36,800	1,766	1.18	36,800	13,027
0.18	36,800	1,987	1.20	36,800	13,248
0.20	36,800	2,208	1.22	36,800	13,469
0.22	36,800	2,429	1.24	36,800	13,690
0.24	36,800	2,650	1.26	36,800	13,910
0.26	36,800	2,870	1.28	36,800	14,131
0.28	36,800	3,091	1.30	36,800	14,352
0.30	36,800	3,312	1.32	36,800	14,573
0.32	36,800	3,533	1.34	36,800	14,794
0.34	36,800	3,754	1.36	36,800	15,014
0.36	36,800	3,974	1.38	36,800	15,235
0.38	36,800	4,195	1.40	36,800	15,456
0.40	36,800	4,416	1.42	36,800	15,677
0.42	36,800	4,637	1.44	36,800	15,898
0.44	36,800	4,858	1.46	36,800	16,118
0.46	36,800	5,078	1.48	36,800	16,339
0.48	36,800	5,299	1.50	36,800	16,560
0.50	36,800	5,520	1.52	36,800	16,781
0.52	36,800	5,741	1.54	36,800	17,002
0.54	36,800	5,962	1.56	36,800	17,222
0.56	36,800	6,182	1.58	36,800	17,443
0.58	36,800	6,403	1.60	36,800	17,664
0.60	36,800	6,624	1.62	36,800	17,885
0.62	36,800	6,845	1.64	36,800	18,106
0.64	36,800	7,066	1.66	36,800	18,326
0.66	36,800	7,286	1.68	36,800	18,547
0.68	36,800	7,507	1.70	36,800	18,768
0.70	36,800	7,728	1.72	36,800	18,989
0.72	36,800	7,949	1.74	36,800	19,210
0.74	36,800	8,170	1.76	36,800	19,430
0.76	36,800	8,390	1.78	36,800	19,651
0.78	36,800	8,611	1.80	36,800	19,872
0.80	36,800	8,832	1.82	36,800	20,093
0.82	36,800	9,053	1.84	36,800	20,314
0.84	36,800	9,274	1.86	36,800	20,534
0.86	36,800	9,494	1.88	36,800	20,755
0.88	36,800	9,715	1.90	36,800	20,976
0.90	36,800	9,936	1.92	36,800	21,197
0.92	36,800	10,157	1.94	36,800	21,418
0.94	36,800	10,378	1.96	36,800	21,638
0.96	36,800	10,598	1.98	36,800	21,859
0.98	36,800	10,819	2.00	36,800	22,080
1.00	36,800	11,040			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Pond B3: Subsurface Chambers

Inflow Area = 0.476 ac, 100.00% Impervious, Inflow Depth = 4.63" for 10-yr 24-hr event
 Inflow = 2.21 cfs @ 12.09 hrs, Volume= 0.184 af
 Outflow = 0.72 cfs @ 12.38 hrs, Volume= 0.184 af, Atten= 68%, Lag= 17.7 min
 Discarded = 0.07 cfs @ 12.38 hrs, Volume= 0.140 af
 Primary = 0.65 cfs @ 12.38 hrs, Volume= 0.044 af
 Routed to Link PR DP B : PR Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 259.76' @ 12.38 hrs Surf.Area= 2,445 sf Storage= 3,313 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 309.2 min (1,057.7 - 748.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	258.00'	1,672 cf	32.87"W x 74.37"L x 3.56"H Field A 8,714 cf Overall - 4,533 cf Embedded = 4,181 cf x 40.0% Voids
#2A	258.33'	4,306 cf	ACF R-Tank SD 3 x 660 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 660 Chambers in 22 Rows
		5,979 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	259.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 0.50 1.50 Width (feet) 1.50 1.50 4.00 4.00
#2	Discarded	258.00'	0.800 in/hr Exfiltration - TP3 over Surface area Conductivity to Groundwater Elevation = 255.00'
#3	Primary	257.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 12.38 hrs HW=259.76' (Free Discharge)

↑ **2=Exfiltration - TP3** (Controls 0.07 cfs)

Primary OutFlow Max=0.64 cfs @ 12.38 hrs HW=259.76' TW=0.00' (Dynamic Tailwater)

↑ **3=Orifice/Grate** (Passes 0.64 cfs of 4.57 cfs potential flow)

↑ **1=Custom Weir/Orifice** (Weir Controls 0.64 cfs @ 1.66 fps)

Belmont Hill School - Proposed Conditions

Pond B3: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

30 Chambers/Row x 2.35' Long = 70.37' Row Length +24.0" End Stone x 2 = 74.37' Base Length

22 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 32.87' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

660 Chambers x 6.5 cf = 4,306.2 cf Chamber Storage

660 Chambers x 6.9 cf = 4,532.9 cf Displacement

8,713.9 cf Field - 4,532.9 cf Chambers = 4,181.1 cf Stone x 40.0% Voids = 1,672.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,978.7 cf = 0.137 af

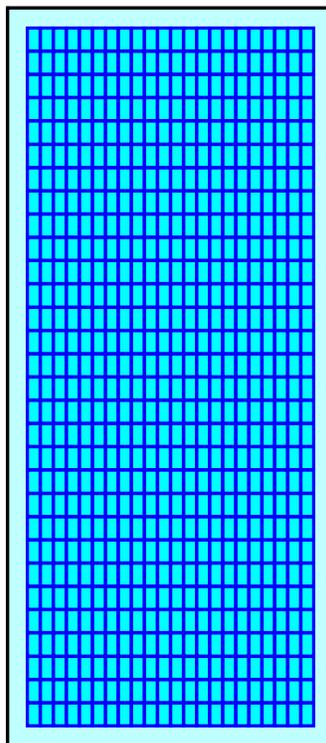
Overall Storage Efficiency = 68.6%

Overall System Size = 74.37' x 32.87' x 3.56'

660 Chambers

322.7 cy Field

154.9 cy Stone



Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Pond B3: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	258.00	0.00	0.00	0.00
2.50	0.01	0	258.00	0.01	0.01	0.00
5.00	0.03	0	258.00	0.03	0.03	0.00
7.50	0.05	2	258.00	0.05	0.05	0.00
10.00	0.11	255	258.26	0.05	0.05	0.00
12.50	0.47	3,270	259.74	0.64	0.07	0.57
15.00	0.09	2,845	259.54	0.10	0.07	0.03
17.50	0.04	2,713	259.47	0.07	0.07	0.00
20.00	0.03	2,435	259.34	0.07	0.07	0.00
22.50	0.02	2,102	259.18	0.06	0.06	0.00
25.00	0.00	1,672	258.98	0.06	0.06	0.00
27.50	0.00	1,149	258.73	0.06	0.06	0.00
30.00	0.00	659	258.49	0.05	0.05	0.00
32.50	0.00	201	258.21	0.05	0.05	0.00
35.00	0.00	0	258.00	0.00	0.00	0.00
37.50	0.00	0	258.00	0.00	0.00	0.00
40.00	0.00	0	258.00	0.00	0.00	0.00
42.50	0.00	0	258.00	0.00	0.00	0.00
45.00	0.00	0	258.00	0.00	0.00	0.00
47.50	0.00	0	258.00	0.00	0.00	0.00
50.00	0.00	0	258.00	0.00	0.00	0.00
52.50	0.00	0	258.00	0.00	0.00	0.00
55.00	0.00	0	258.00	0.00	0.00	0.00
57.50	0.00	0	258.00	0.00	0.00	0.00
60.00	0.00	0	258.00	0.00	0.00	0.00
62.50	0.00	0	258.00	0.00	0.00	0.00
65.00	0.00	0	258.00	0.00	0.00	0.00
67.50	0.00	0	258.00	0.00	0.00	0.00
70.00	0.00	0	258.00	0.00	0.00	0.00
72.50	0.00	0	258.00	0.00	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Stage-Area-Storage for Pond B3: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.00	2,445	0	260.55	2,445	4,971
258.05	2,445	49	260.60	2,445	5,036
258.10	2,445	98	260.65	2,445	5,085
258.15	2,445	147	260.70	2,445	5,133
258.20	2,445	196	260.75	2,445	5,182
258.25	2,445	244	260.80	2,445	5,231
258.30	2,445	293	260.85	2,445	5,280
258.35	2,445	361	260.90	2,445	5,329
258.40	2,445	466	260.95	2,445	5,378
258.45	2,445	570	261.00	2,445	5,427
258.50	2,445	675	261.05	2,445	5,476
258.55	2,445	780	261.10	2,445	5,525
258.60	2,445	885	261.15	2,445	5,574
258.65	2,445	990	261.20	2,445	5,622
258.70	2,445	1,094	261.25	2,445	5,671
258.75	2,445	1,199	261.30	2,445	5,720
258.80	2,445	1,304	261.35	2,445	5,769
258.85	2,445	1,409	261.40	2,445	5,818
258.90	2,445	1,513	261.45	2,445	5,867
258.95	2,445	1,618	261.50	2,445	5,916
259.00	2,445	1,723	261.55	2,445	5,965
259.05	2,445	1,828			
259.10	2,445	1,932			
259.15	2,445	2,037			
259.20	2,445	2,142			
259.25	2,445	2,247			
259.30	2,445	2,352			
259.35	2,445	2,456			
259.40	2,445	2,561			
259.45	2,445	2,666			
259.50	2,445	2,771			
259.55	2,445	2,875			
259.60	2,445	2,980			
259.65	2,445	3,085			
259.70	2,445	3,190			
259.75	2,445	3,294			
259.80	2,445	3,399			
259.85	2,445	3,504			
259.90	2,445	3,609			
259.95	2,445	3,714			
260.00	2,445	3,818			
260.05	2,445	3,923			
260.10	2,445	4,028			
260.15	2,445	4,133			
260.20	2,445	4,237			
260.25	2,445	4,342			
260.30	2,445	4,447			
260.35	2,445	4,552			
260.40	2,445	4,656			
260.45	2,445	4,761			
260.50	2,445	4,866			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
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Summary for Pond B4: Porous Pave

Inflow Area = 0.143 ac, 0.00% Impervious, Inflow Depth = 1.94" for 10-yr 24-hr event
Inflow = 0.31 cfs @ 12.10 hrs, Volume= 0.023 af
Outflow = 0.12 cfs @ 12.40 hrs, Volume= 0.023 af, Atten= 62%, Lag= 18.0 min
Discarded = 0.12 cfs @ 12.40 hrs, Volume= 0.023 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 0.07' @ 12.40 hrs Surf.Area= 6,200 sf Storage= 133 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.5 min (854.6 - 849.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,720 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 12,400 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	6,200	0	0
2.00	6,200	12,400	12,400

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.800 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.12 cfs @ 12.40 hrs HW=0.07' (Free Discharge)
↑1=Exfiltration - TP8 (Controls 0.12 cfs)

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Hydrograph for Pond B4: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.00	0	0.00	0.00
10.00	0.00	0	0.00	0.00
12.50	0.08	127	0.07	0.12
15.00	0.02	0	0.00	0.04
17.50	0.01	0	0.00	0.02
20.00	0.01	0	0.00	0.01
22.50	0.01	0	0.00	0.01
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

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Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Stage-Area-Storage for Pond B4: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	6,200	0	1.02	6,200	1,897
0.02	6,200	37	1.04	6,200	1,934
0.04	6,200	74	1.06	6,200	1,972
0.06	6,200	112	1.08	6,200	2,009
0.08	6,200	149	1.10	6,200	2,046
0.10	6,200	186	1.12	6,200	2,083
0.12	6,200	223	1.14	6,200	2,120
0.14	6,200	260	1.16	6,200	2,158
0.16	6,200	298	1.18	6,200	2,195
0.18	6,200	335	1.20	6,200	2,232
0.20	6,200	372	1.22	6,200	2,269
0.22	6,200	409	1.24	6,200	2,306
0.24	6,200	446	1.26	6,200	2,344
0.26	6,200	484	1.28	6,200	2,381
0.28	6,200	521	1.30	6,200	2,418
0.30	6,200	558	1.32	6,200	2,455
0.32	6,200	595	1.34	6,200	2,492
0.34	6,200	632	1.36	6,200	2,530
0.36	6,200	670	1.38	6,200	2,567
0.38	6,200	707	1.40	6,200	2,604
0.40	6,200	744	1.42	6,200	2,641
0.42	6,200	781	1.44	6,200	2,678
0.44	6,200	818	1.46	6,200	2,716
0.46	6,200	856	1.48	6,200	2,753
0.48	6,200	893	1.50	6,200	2,790
0.50	6,200	930	1.52	6,200	2,827
0.52	6,200	967	1.54	6,200	2,864
0.54	6,200	1,004	1.56	6,200	2,902
0.56	6,200	1,042	1.58	6,200	2,939
0.58	6,200	1,079	1.60	6,200	2,976
0.60	6,200	1,116	1.62	6,200	3,013
0.62	6,200	1,153	1.64	6,200	3,050
0.64	6,200	1,190	1.66	6,200	3,088
0.66	6,200	1,228	1.68	6,200	3,125
0.68	6,200	1,265	1.70	6,200	3,162
0.70	6,200	1,302	1.72	6,200	3,199
0.72	6,200	1,339	1.74	6,200	3,236
0.74	6,200	1,376	1.76	6,200	3,274
0.76	6,200	1,414	1.78	6,200	3,311
0.78	6,200	1,451	1.80	6,200	3,348
0.80	6,200	1,488	1.82	6,200	3,385
0.82	6,200	1,525	1.84	6,200	3,422
0.84	6,200	1,562	1.86	6,200	3,460
0.86	6,200	1,600	1.88	6,200	3,497
0.88	6,200	1,637	1.90	6,200	3,534
0.90	6,200	1,674	1.92	6,200	3,571
0.92	6,200	1,711	1.94	6,200	3,608
0.94	6,200	1,748	1.96	6,200	3,646
0.96	6,200	1,786	1.98	6,200	3,683
0.98	6,200	1,823	2.00	6,200	3,720
1.00	6,200	1,860			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Pond D: Subsurface Chambers

Inflow Area = 0.653 ac, 61.26% Impervious, Inflow Depth = 2.43" for 10-yr 24-hr event
 Inflow = 1.63 cfs @ 12.14 hrs, Volume= 0.132 af
 Outflow = 0.06 cfs @ 16.32 hrs, Volume= 0.132 af, Atten= 96%, Lag= 251.2 min
 Discarded = 0.06 cfs @ 16.32 hrs, Volume= 0.132 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link PR DR D : Marsh Street CBs

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 253.24' @ 16.32 hrs Surf.Area= 2,533 sf Storage= 3,385 cf

Plug-Flow detention time= 553.3 min calculated for 0.132 af (100% of inflow)
 Center-of-Mass det. time= 553.6 min (1,390.2 - 836.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	251.50'	1,744 cf	30.25"W x 83.76"L x 3.56"H Field A 9,030 cf Overall - 4,670 cf Embedded = 4,360 cf x 40.0% Voids
#2A	251.83'	4,437 cf	ACF R-Tank SD 3 x 680 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 680 Chambers in 20 Rows
		6,181 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	253.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 1.00 2.00 Width (feet) 4.00 4.00 4.00 4.00
#2	Discarded	251.50'	0.940 in/hr Exfiltration - TP-207 over Surface area Conductivity to Groundwater Elevation = 240.00'
#3	Primary	249.15'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 16.32 hrs HW=253.24' (Free Discharge)
 ↑2=Exfiltration - TP-207 (Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=251.50' TW=0.00' (Dynamic Tailwater)
 ↑3=Orifice/Grate (Passes 0.00 cfs of 5.14 cfs potential flow)
 ↑1=Custom Weir/Orifice (Controls 0.00 cfs)

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Pond D: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

34 Chambers/Row x 2.35' Long = 79.76' Row Length +24.0" End Stone x 2 = 83.76' Base Length

20 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 30.25' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

680 Chambers x 6.5 cf = 4,436.7 cf Chamber Storage

680 Chambers x 6.9 cf = 4,670.2 cf Displacement

9,029.7 cf Field - 4,670.2 cf Chambers = 4,359.5 cf Stone x 40.0% Voids = 1,743.8 cf Stone Storage

Chamber Storage + Stone Storage = 6,180.5 cf = 0.142 af

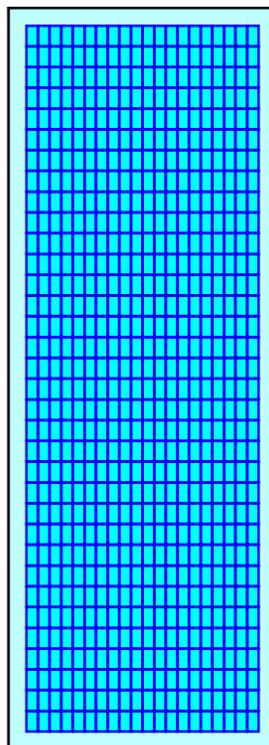
Overall Storage Efficiency = 68.4%

Overall System Size = 83.76' x 30.25' x 3.56'

680 Chambers

334.4 cy Field

161.5 cy Stone



Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Pond D: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	251.50	0.00	0.00	0.00
2.50	0.00	0	251.50	0.00	0.00	0.00
5.00	0.00	0	251.50	0.00	0.00	0.00
7.50	0.00	0	251.50	0.00	0.00	0.00
10.00	0.02	0	251.50	0.02	0.02	0.00
12.50	0.56	2,373	252.77	0.06	0.06	0.00
15.00	0.10	3,310	253.21	0.06	0.06	0.00
17.50	0.05	3,355	253.23	0.06	0.06	0.00
20.00	0.03	3,142	253.13	0.06	0.06	0.00
22.50	0.03	2,853	253.00	0.06	0.06	0.00
25.00	0.00	2,442	252.81	0.06	0.06	0.00
27.50	0.00	1,895	252.55	0.06	0.06	0.00
30.00	0.00	1,359	252.31	0.06	0.06	0.00
32.50	0.00	833	252.06	0.06	0.06	0.00
35.00	0.00	318	251.81	0.06	0.06	0.00
37.50	0.00	0	251.50	0.00	0.00	0.00
40.00	0.00	0	251.50	0.00	0.00	0.00
42.50	0.00	0	251.50	0.00	0.00	0.00
45.00	0.00	0	251.50	0.00	0.00	0.00
47.50	0.00	0	251.50	0.00	0.00	0.00
50.00	0.00	0	251.50	0.00	0.00	0.00
52.50	0.00	0	251.50	0.00	0.00	0.00
55.00	0.00	0	251.50	0.00	0.00	0.00
57.50	0.00	0	251.50	0.00	0.00	0.00
60.00	0.00	0	251.50	0.00	0.00	0.00
62.50	0.00	0	251.50	0.00	0.00	0.00
65.00	0.00	0	251.50	0.00	0.00	0.00
67.50	0.00	0	251.50	0.00	0.00	0.00
70.00	0.00	0	251.50	0.00	0.00	0.00
72.50	0.00	0	251.50	0.00	0.00	0.00

Belmont Hill School - Proposed Conditions

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Stage-Area-Storage for Pond D: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
251.50	2,533	0	254.05	2,533	5,136
251.55	2,533	51	254.10	2,533	5,203
251.60	2,533	101	254.15	2,533	5,254
251.65	2,533	152	254.20	2,533	5,305
251.70	2,533	203	254.25	2,533	5,355
251.75	2,533	253	254.30	2,533	5,406
251.80	2,533	304	254.35	2,533	5,457
251.85	2,533	374	254.40	2,533	5,507
251.90	2,533	482	254.45	2,533	5,558
251.95	2,533	590	254.50	2,533	5,609
252.00	2,533	699	254.55	2,533	5,659
252.05	2,533	807	254.60	2,533	5,710
252.10	2,533	915	254.65	2,533	5,761
252.15	2,533	1,023	254.70	2,533	5,811
252.20	2,533	1,132	254.75	2,533	5,862
252.25	2,533	1,240	254.80	2,533	5,913
252.30	2,533	1,348	254.85	2,533	5,963
252.35	2,533	1,456	254.90	2,533	6,014
252.40	2,533	1,564	254.95	2,533	6,065
252.45	2,533	1,673	255.00	2,533	6,115
252.50	2,533	1,781	255.05	2,533	6,166
252.55	2,533	1,889	255.10	2,533	6,181
252.60	2,533	1,997	255.15	2,533	6,181
252.65	2,533	2,106	255.20	2,533	6,181
252.70	2,533	2,214	255.25	2,533	6,181
252.75	2,533	2,322	255.30	2,533	6,181
252.80	2,533	2,430	255.35	2,533	6,181
252.85	2,533	2,539	255.40	2,533	6,181
252.90	2,533	2,647	255.45	2,533	6,181
252.95	2,533	2,755	255.50	2,533	6,181
253.00	2,533	2,863			
253.05	2,533	2,972			
253.10	2,533	3,080			
253.15	2,533	3,188			
253.20	2,533	3,296			
253.25	2,533	3,404			
253.30	2,533	3,513			
253.35	2,533	3,621			
253.40	2,533	3,729			
253.45	2,533	3,837			
253.50	2,533	3,946			
253.55	2,533	4,054			
253.60	2,533	4,162			
253.65	2,533	4,270			
253.70	2,533	4,379			
253.75	2,533	4,487			
253.80	2,533	4,595			
253.85	2,533	4,703			
253.90	2,533	4,812			
253.95	2,533	4,920			
254.00	2,533	5,028			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link PR DP A: PR Park Ave

Inflow Area = 1.875 ac, 27.31% Impervious, Inflow Depth = 1.92" for 10-yr 24-hr event
Inflow = 3.02 cfs @ 12.24 hrs, Volume= 0.300 af
Primary = 3.02 cfs @ 12.24 hrs, Volume= 0.300 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link PR DP A: PR Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.10	0.00	0.10	62.00	0.00	0.00	0.00
12.00	1.12	0.00	1.12	63.00	0.00	0.00	0.00
13.00	0.55	0.00	0.55	64.00	0.00	0.00	0.00
14.00	0.32	0.00	0.32	65.00	0.00	0.00	0.00
15.00	0.24	0.00	0.24	66.00	0.00	0.00	0.00
16.00	0.17	0.00	0.17	67.00	0.00	0.00	0.00
17.00	0.13	0.00	0.13	68.00	0.00	0.00	0.00
18.00	0.11	0.00	0.11	69.00	0.00	0.00	0.00
19.00	0.09	0.00	0.09	70.00	0.00	0.00	0.00
20.00	0.08	0.00	0.08	71.00	0.00	0.00	0.00
21.00	0.08	0.00	0.08	72.00	0.00	0.00	0.00
22.00	0.07	0.00	0.07				
23.00	0.06	0.00	0.06				
24.00	0.06	0.00	0.06				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link PR DP B: PR Wetlands

Inflow Area = 3.817 ac, 41.97% Impervious, Inflow Depth = 0.28" for 10-yr 24-hr event
Inflow = 0.77 cfs @ 12.42 hrs, Volume= 0.090 af
Primary = 0.77 cfs @ 12.42 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions*Type III 24-hr 10-yr 24-hr Rainfall=4.87"*

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Hydrograph for Link PR DP B: PR Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.29	0.00	0.29	64.00	0.00	0.00	0.00
14.00	0.15	0.00	0.15	65.00	0.00	0.00	0.00
15.00	0.10	0.00	0.10	66.00	0.00	0.00	0.00
16.00	0.06	0.00	0.06	67.00	0.00	0.00	0.00
17.00	0.04	0.00	0.04	68.00	0.00	0.00	0.00
18.00	0.03	0.00	0.03	69.00	0.00	0.00	0.00
19.00	0.03	0.00	0.03	70.00	0.00	0.00	0.00
20.00	0.03	0.00	0.03	71.00	0.00	0.00	0.00
21.00	0.03	0.00	0.03	72.00	0.00	0.00	0.00
22.00	0.03	0.00	0.03				
23.00	0.02	0.00	0.02				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link PR DP C: PR Prospect St

Inflow Area = 0.490 ac, 18.78% Impervious, Inflow Depth = 0.36" for 10-yr 24-hr event
Inflow = 0.07 cfs @ 12.44 hrs, Volume= 0.015 af
Primary = 0.07 cfs @ 12.44 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link PR DP C: PR Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.03	0.00	0.03	64.00	0.00	0.00	0.00
14.00	0.02	0.00	0.02	65.00	0.00	0.00	0.00
15.00	0.02	0.00	0.02	66.00	0.00	0.00	0.00
16.00	0.02	0.00	0.02	67.00	0.00	0.00	0.00
17.00	0.01	0.00	0.01	68.00	0.00	0.00	0.00
18.00	0.01	0.00	0.01	69.00	0.00	0.00	0.00
19.00	0.01	0.00	0.01	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link PR DP E: EX BMP

Inflow Area = 0.245 ac, 67.76% Impervious, Inflow Depth = 2.48" for 10-yr 24-hr event
Inflow = 0.57 cfs @ 12.14 hrs, Volume= 0.051 af
Primary = 0.57 cfs @ 12.14 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link PR DP E: EX BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.01	0.00	0.01	61.00	0.00	0.00	0.00
11.00	0.02	0.00	0.02	62.00	0.00	0.00	0.00
12.00	0.30	0.00	0.30	63.00	0.00	0.00	0.00
13.00	0.08	0.00	0.08	64.00	0.00	0.00	0.00
14.00	0.05	0.00	0.05	65.00	0.00	0.00	0.00
15.00	0.04	0.00	0.04	66.00	0.00	0.00	0.00
16.00	0.03	0.00	0.03	67.00	0.00	0.00	0.00
17.00	0.02	0.00	0.02	68.00	0.00	0.00	0.00
18.00	0.02	0.00	0.02	69.00	0.00	0.00	0.00
19.00	0.01	0.00	0.01	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link PR DP F: PR Main Campus

Inflow Area = 2.040 ac, 51.23% Impervious, Inflow Depth = 1.74" for 10-yr 24-hr event
Inflow = 3.60 cfs @ 12.11 hrs, Volume= 0.296 af
Primary = 3.60 cfs @ 12.11 hrs, Volume= 0.296 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link PR DP F: PR Main Campus

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.01	0.00	0.01	58.00	0.00	0.00	0.00
8.00	0.01	0.00	0.01	59.00	0.00	0.00	0.00
9.00	0.03	0.00	0.03	60.00	0.00	0.00	0.00
10.00	0.07	0.00	0.07	61.00	0.00	0.00	0.00
11.00	0.15	0.00	0.15	62.00	0.00	0.00	0.00
12.00	2.05	0.00	2.05	63.00	0.00	0.00	0.00
13.00	0.43	0.00	0.43	64.00	0.00	0.00	0.00
14.00	0.27	0.00	0.27	65.00	0.00	0.00	0.00
15.00	0.21	0.00	0.21	66.00	0.00	0.00	0.00
16.00	0.15	0.00	0.15	67.00	0.00	0.00	0.00
17.00	0.12	0.00	0.12	68.00	0.00	0.00	0.00
18.00	0.09	0.00	0.09	69.00	0.00	0.00	0.00
19.00	0.08	0.00	0.08	70.00	0.00	0.00	0.00
20.00	0.07	0.00	0.07	71.00	0.00	0.00	0.00
21.00	0.07	0.00	0.07	72.00	0.00	0.00	0.00
22.00	0.06	0.00	0.06				
23.00	0.05	0.00	0.05				
24.00	0.05	0.00	0.05				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Summary for Link PR DR D: Marsh Street CBs

Inflow Area = 1.235 ac, 42.35% Impervious, Inflow Depth = 0.91" for 10-yr 24-hr event
Inflow = 1.11 cfs @ 12.15 hrs, Volume= 0.094 af
Primary = 1.11 cfs @ 12.15 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 10-yr 24-hr Rainfall=4.87"

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Hydrograph for Link PR DR D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.03	0.00	0.03	62.00	0.00	0.00	0.00
12.00	0.48	0.00	0.48	63.00	0.00	0.00	0.00
13.00	0.16	0.00	0.16	64.00	0.00	0.00	0.00
14.00	0.10	0.00	0.10	65.00	0.00	0.00	0.00
15.00	0.08	0.00	0.08	66.00	0.00	0.00	0.00
16.00	0.06	0.00	0.06	67.00	0.00	0.00	0.00
17.00	0.04	0.00	0.04	68.00	0.00	0.00	0.00
18.00	0.03	0.00	0.03	69.00	0.00	0.00	0.00
19.00	0.03	0.00	0.03	70.00	0.00	0.00	0.00
20.00	0.03	0.00	0.03	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR A1: North Lot A1

Runoff = 1.33 cfs @ 12.09 hrs, Volume= 0.111 af, Depth= 5.93"
Routed to Pond A1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.225	98	Permeable Pavement
0.225		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR A1: North Lot A1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	5.93	0.00
1.00	0.06	0.00	0.00	52.00	6.17	5.93	0.00
2.00	0.12	0.02	0.01	53.00	6.17	5.93	0.00
3.00	0.19	0.06	0.01	54.00	6.17	5.93	0.00
4.00	0.27	0.12	0.01	55.00	6.17	5.93	0.00
5.00	0.35	0.19	0.02	56.00	6.17	5.93	0.00
6.00	0.44	0.27	0.02	57.00	6.17	5.93	0.00
7.00	0.56	0.37	0.03	58.00	6.17	5.93	0.00
8.00	0.70	0.51	0.03	59.00	6.17	5.93	0.00
9.00	0.90	0.69	0.05	60.00	6.17	5.93	0.00
10.00	1.17	0.95	0.07	61.00	6.17	5.93	0.00
11.00	1.54	1.32	0.10	62.00	6.17	5.93	0.00
12.00	3.08	2.85	0.86	63.00	6.17	5.93	0.00
13.00	4.63	4.39	0.11	64.00	6.17	5.93	0.00
14.00	5.00	4.77	0.07	65.00	6.17	5.93	0.00
15.00	5.27	5.03	0.05	66.00	6.17	5.93	0.00
16.00	5.47	5.23	0.04	67.00	6.17	5.93	0.00
17.00	5.61	5.37	0.03	68.00	6.17	5.93	0.00
18.00	5.73	5.49	0.02	69.00	6.17	5.93	0.00
19.00	5.82	5.58	0.02	70.00	6.17	5.93	0.00
20.00	5.90	5.67	0.02	71.00	6.17	5.93	0.00
21.00	5.98	5.74	0.02	72.00	6.17	5.93	0.00
22.00	6.05	5.81	0.02				
23.00	6.11	5.88	0.01				
24.00	6.17	5.93	0.01				
25.00	6.17	5.93	0.00				
26.00	6.17	5.93	0.00				
27.00	6.17	5.93	0.00				
28.00	6.17	5.93	0.00				
29.00	6.17	5.93	0.00				
30.00	6.17	5.93	0.00				
31.00	6.17	5.93	0.00				
32.00	6.17	5.93	0.00				
33.00	6.17	5.93	0.00				
34.00	6.17	5.93	0.00				
35.00	6.17	5.93	0.00				
36.00	6.17	5.93	0.00				
37.00	6.17	5.93	0.00				
38.00	6.17	5.93	0.00				
39.00	6.17	5.93	0.00				
40.00	6.17	5.93	0.00				
41.00	6.17	5.93	0.00				
42.00	6.17	5.93	0.00				
43.00	6.17	5.93	0.00				
44.00	6.17	5.93	0.00				
45.00	6.17	5.93	0.00				
46.00	6.17	5.93	0.00				
47.00	6.17	5.93	0.00				
48.00	6.17	5.93	0.00				
49.00	6.17	5.93	0.00				
50.00	6.17	5.93	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR A2: North Lot A3

Runoff = 4.52 cfs @ 12.23 hrs, Volume= 0.444 af, Depth= 3.23"
 Routed to Link PR DP A : PR Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.287	98	Impervious
* 0.042	70	Perm pavement w/out storage
0.322	32	Woods/grass comb., Good, HSG A
0.999	79	Woods/grass comb., Good, HSG D
1.650	73	Weighted Average
1.363		82.61% Pervious Area
0.287		17.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
2.2	130	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
16.5	240	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR A2: North Lot A3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	3.23	0.00
1.00	0.06	0.00	0.00	52.00	6.17	3.23	0.00
2.00	0.12	0.00	0.00	53.00	6.17	3.23	0.00
3.00	0.19	0.00	0.00	54.00	6.17	3.23	0.00
4.00	0.27	0.00	0.00	55.00	6.17	3.23	0.00
5.00	0.35	0.00	0.00	56.00	6.17	3.23	0.00
6.00	0.44	0.00	0.00	57.00	6.17	3.23	0.00
7.00	0.56	0.00	0.00	58.00	6.17	3.23	0.00
8.00	0.70	0.00	0.00	59.00	6.17	3.23	0.00
9.00	0.90	0.01	0.02	60.00	6.17	3.23	0.00
10.00	1.17	0.04	0.08	61.00	6.17	3.23	0.00
11.00	1.54	0.14	0.20	62.00	6.17	3.23	0.00
12.00	3.08	0.91	1.79	63.00	6.17	3.23	0.00
13.00	4.63	1.99	0.77	64.00	6.17	3.23	0.00
14.00	5.00	2.28	0.44	65.00	6.17	3.23	0.00
15.00	5.27	2.49	0.33	66.00	6.17	3.23	0.00
16.00	5.47	2.65	0.24	67.00	6.17	3.23	0.00
17.00	5.61	2.77	0.19	68.00	6.17	3.23	0.00
18.00	5.73	2.86	0.14	69.00	6.17	3.23	0.00
19.00	5.82	2.94	0.13	70.00	6.17	3.23	0.00
20.00	5.90	3.01	0.11	71.00	6.17	3.23	0.00
21.00	5.98	3.07	0.10	72.00	6.17	3.23	0.00
22.00	6.05	3.13	0.09				
23.00	6.11	3.18	0.08				
24.00	6.17	3.23	0.08				
25.00	6.17	3.23	0.00				
26.00	6.17	3.23	0.00				
27.00	6.17	3.23	0.00				
28.00	6.17	3.23	0.00				
29.00	6.17	3.23	0.00				
30.00	6.17	3.23	0.00				
31.00	6.17	3.23	0.00				
32.00	6.17	3.23	0.00				
33.00	6.17	3.23	0.00				
34.00	6.17	3.23	0.00				
35.00	6.17	3.23	0.00				
36.00	6.17	3.23	0.00				
37.00	6.17	3.23	0.00				
38.00	6.17	3.23	0.00				
39.00	6.17	3.23	0.00				
40.00	6.17	3.23	0.00				
41.00	6.17	3.23	0.00				
42.00	6.17	3.23	0.00				
43.00	6.17	3.23	0.00				
44.00	6.17	3.23	0.00				
45.00	6.17	3.23	0.00				
46.00	6.17	3.23	0.00				
47.00	6.17	3.23	0.00				
48.00	6.17	3.23	0.00				
49.00	6.17	3.23	0.00				
50.00	6.17	3.23	0.00				

Belmont Hill School - Proposed Conditions

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR B1: North Lot B1

Runoff = 6.55 cfs @ 12.09 hrs, Volume= 0.494 af, Depth= 4.79"
 Routed to Pond B1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.034	98	Impervious
* 0.847	98	Permeable Pavement
0.123	32	Woods/grass comb., Good, HSG A
0.234	79	Woods/grass comb., Good, HSG D
1.238	88	Weighted Average
0.357		28.84% Pervious Area
0.881		71.16% Impervious Area

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

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR B1: North Lot B1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	4.79	0.00
1.00	0.06	0.00	0.00	52.00	6.17	4.79	0.00
2.00	0.12	0.00	0.00	53.00	6.17	4.79	0.00
3.00	0.19	0.00	0.00	54.00	6.17	4.79	0.00
4.00	0.27	0.00	0.00	55.00	6.17	4.79	0.00
5.00	0.35	0.00	0.01	56.00	6.17	4.79	0.00
6.00	0.44	0.02	0.02	57.00	6.17	4.79	0.00
7.00	0.56	0.05	0.05	58.00	6.17	4.79	0.00
8.00	0.70	0.10	0.08	59.00	6.17	4.79	0.00
9.00	0.90	0.20	0.15	60.00	6.17	4.79	0.00
10.00	1.17	0.35	0.23	61.00	6.17	4.79	0.00
11.00	1.54	0.61	0.39	62.00	6.17	4.79	0.00
12.00	3.08	1.89	4.15	63.00	6.17	4.79	0.00
13.00	4.63	3.32	0.59	64.00	6.17	4.79	0.00
14.00	5.00	3.67	0.37	65.00	6.17	4.79	0.00
15.00	5.27	3.93	0.28	66.00	6.17	4.79	0.00
16.00	5.47	4.11	0.20	67.00	6.17	4.79	0.00
17.00	5.61	4.25	0.16	68.00	6.17	4.79	0.00
18.00	5.73	4.36	0.12	69.00	6.17	4.79	0.00
19.00	5.82	4.45	0.11	70.00	6.17	4.79	0.00
20.00	5.90	4.53	0.10	71.00	6.17	4.79	0.00
21.00	5.98	4.61	0.09	72.00	6.17	4.79	0.00
22.00	6.05	4.68	0.08				
23.00	6.11	4.74	0.07				
24.00	6.17	4.79	0.06				
25.00	6.17	4.79	0.00				
26.00	6.17	4.79	0.00				
27.00	6.17	4.79	0.00				
28.00	6.17	4.79	0.00				
29.00	6.17	4.79	0.00				
30.00	6.17	4.79	0.00				
31.00	6.17	4.79	0.00				
32.00	6.17	4.79	0.00				
33.00	6.17	4.79	0.00				
34.00	6.17	4.79	0.00				
35.00	6.17	4.79	0.00				
36.00	6.17	4.79	0.00				
37.00	6.17	4.79	0.00				
38.00	6.17	4.79	0.00				
39.00	6.17	4.79	0.00				
40.00	6.17	4.79	0.00				
41.00	6.17	4.79	0.00				
42.00	6.17	4.79	0.00				
43.00	6.17	4.79	0.00				
44.00	6.17	4.79	0.00				
45.00	6.17	4.79	0.00				
46.00	6.17	4.79	0.00				
47.00	6.17	4.79	0.00				
48.00	6.17	4.79	0.00				
49.00	6.17	4.79	0.00				
50.00	6.17	4.79	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR B2: North Lot B2

Runoff = 0.63 cfs @ 12.38 hrs, Volume= 0.110 af, Depth= 0.67"
 Routed to Link PR DP B : PR Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.245	98	Impervious
1.655	32	Woods/grass comb., Good, HSG A
0.060	79	Woods/grass comb., Good, HSG D
1.960	42	Weighted Average
1.715		87.50% Pervious Area
0.245		12.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0300	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
1.6	110	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	162	0.0100	5.36	4.21	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, bends & connections
0.4	48	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.6	420	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR B2: North Lot B2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	0.67	0.00
1.00	0.06	0.00	0.00	52.00	6.17	0.67	0.00
2.00	0.12	0.00	0.00	53.00	6.17	0.67	0.00
3.00	0.19	0.00	0.00	54.00	6.17	0.67	0.00
4.00	0.27	0.00	0.00	55.00	6.17	0.67	0.00
5.00	0.35	0.00	0.00	56.00	6.17	0.67	0.00
6.00	0.44	0.00	0.00	57.00	6.17	0.67	0.00
7.00	0.56	0.00	0.00	58.00	6.17	0.67	0.00
8.00	0.70	0.00	0.00	59.00	6.17	0.67	0.00
9.00	0.90	0.00	0.00	60.00	6.17	0.67	0.00
10.00	1.17	0.00	0.00	61.00	6.17	0.67	0.00
11.00	1.54	0.00	0.00	62.00	6.17	0.67	0.00
12.00	3.08	0.01	0.00	63.00	6.17	0.67	0.00
13.00	4.63	0.22	0.24	64.00	6.17	0.67	0.00
14.00	5.00	0.31	0.17	65.00	6.17	0.67	0.00
15.00	5.27	0.39	0.14	66.00	6.17	0.67	0.00
16.00	5.47	0.44	0.10	67.00	6.17	0.67	0.00
17.00	5.61	0.49	0.08	68.00	6.17	0.67	0.00
18.00	5.73	0.52	0.07	69.00	6.17	0.67	0.00
19.00	5.82	0.55	0.06	70.00	6.17	0.67	0.00
20.00	5.90	0.58	0.05	71.00	6.17	0.67	0.00
21.00	5.98	0.61	0.05	72.00	6.17	0.67	0.00
22.00	6.05	0.63	0.05				
23.00	6.11	0.65	0.04				
24.00	6.17	0.67	0.04				
25.00	6.17	0.67	0.00				
26.00	6.17	0.67	0.00				
27.00	6.17	0.67	0.00				
28.00	6.17	0.67	0.00				
29.00	6.17	0.67	0.00				
30.00	6.17	0.67	0.00				
31.00	6.17	0.67	0.00				
32.00	6.17	0.67	0.00				
33.00	6.17	0.67	0.00				
34.00	6.17	0.67	0.00				
35.00	6.17	0.67	0.00				
36.00	6.17	0.67	0.00				
37.00	6.17	0.67	0.00				
38.00	6.17	0.67	0.00				
39.00	6.17	0.67	0.00				
40.00	6.17	0.67	0.00				
41.00	6.17	0.67	0.00				
42.00	6.17	0.67	0.00				
43.00	6.17	0.67	0.00				
44.00	6.17	0.67	0.00				
45.00	6.17	0.67	0.00				
46.00	6.17	0.67	0.00				
47.00	6.17	0.67	0.00				
48.00	6.17	0.67	0.00				
49.00	6.17	0.67	0.00				
50.00	6.17	0.67	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR B3: North Lot B3

Runoff = 2.81 cfs @ 12.09 hrs, Volume= 0.235 af, Depth= 5.93"
Routed to Pond B3 : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.476	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.476	98	Weighted Average
0.476		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR B3: North Lot B3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	5.93	0.00
1.00	0.06	0.00	0.00	52.00	6.17	5.93	0.00
2.00	0.12	0.02	0.01	53.00	6.17	5.93	0.00
3.00	0.19	0.06	0.02	54.00	6.17	5.93	0.00
4.00	0.27	0.12	0.03	55.00	6.17	5.93	0.00
5.00	0.35	0.19	0.04	56.00	6.17	5.93	0.00
6.00	0.44	0.27	0.04	57.00	6.17	5.93	0.00
7.00	0.56	0.37	0.06	58.00	6.17	5.93	0.00
8.00	0.70	0.51	0.07	59.00	6.17	5.93	0.00
9.00	0.90	0.69	0.10	60.00	6.17	5.93	0.00
10.00	1.17	0.95	0.14	61.00	6.17	5.93	0.00
11.00	1.54	1.32	0.21	62.00	6.17	5.93	0.00
12.00	3.08	2.85	1.83	63.00	6.17	5.93	0.00
13.00	4.63	4.39	0.24	64.00	6.17	5.93	0.00
14.00	5.00	4.77	0.15	65.00	6.17	5.93	0.00
15.00	5.27	5.03	0.11	66.00	6.17	5.93	0.00
16.00	5.47	5.23	0.08	67.00	6.17	5.93	0.00
17.00	5.61	5.37	0.06	68.00	6.17	5.93	0.00
18.00	5.73	5.49	0.05	69.00	6.17	5.93	0.00
19.00	5.82	5.58	0.04	70.00	6.17	5.93	0.00
20.00	5.90	5.67	0.04	71.00	6.17	5.93	0.00
21.00	5.98	5.74	0.04	72.00	6.17	5.93	0.00
22.00	6.05	5.81	0.03				
23.00	6.11	5.88	0.03				
24.00	6.17	5.93	0.03				
25.00	6.17	5.93	0.00				
26.00	6.17	5.93	0.00				
27.00	6.17	5.93	0.00				
28.00	6.17	5.93	0.00				
29.00	6.17	5.93	0.00				
30.00	6.17	5.93	0.00				
31.00	6.17	5.93	0.00				
32.00	6.17	5.93	0.00				
33.00	6.17	5.93	0.00				
34.00	6.17	5.93	0.00				
35.00	6.17	5.93	0.00				
36.00	6.17	5.93	0.00				
37.00	6.17	5.93	0.00				
38.00	6.17	5.93	0.00				
39.00	6.17	5.93	0.00				
40.00	6.17	5.93	0.00				
41.00	6.17	5.93	0.00				
42.00	6.17	5.93	0.00				
43.00	6.17	5.93	0.00				
44.00	6.17	5.93	0.00				
45.00	6.17	5.93	0.00				
46.00	6.17	5.93	0.00				
47.00	6.17	5.93	0.00				
48.00	6.17	5.93	0.00				
49.00	6.17	5.93	0.00				
50.00	6.17	5.93	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR B4: North Lot B4

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 2.94"
 Routed to Pond B4 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.000	98	Impervious
* 0.143	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.143	70	Weighted Average
0.143		100.00% Pervious Area

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

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR B4: North Lot B4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	2.94	0.00
1.00	0.06	0.00	0.00	52.00	6.17	2.94	0.00
2.00	0.12	0.00	0.00	53.00	6.17	2.94	0.00
3.00	0.19	0.00	0.00	54.00	6.17	2.94	0.00
4.00	0.27	0.00	0.00	55.00	6.17	2.94	0.00
5.00	0.35	0.00	0.00	56.00	6.17	2.94	0.00
6.00	0.44	0.00	0.00	57.00	6.17	2.94	0.00
7.00	0.56	0.00	0.00	58.00	6.17	2.94	0.00
8.00	0.70	0.00	0.00	59.00	6.17	2.94	0.00
9.00	0.90	0.00	0.00	60.00	6.17	2.94	0.00
10.00	1.17	0.02	0.01	61.00	6.17	2.94	0.00
11.00	1.54	0.09	0.02	62.00	6.17	2.94	0.00
12.00	3.08	0.76	0.28	63.00	6.17	2.94	0.00
13.00	4.63	1.76	0.05	64.00	6.17	2.94	0.00
14.00	5.00	2.04	0.03	65.00	6.17	2.94	0.00
15.00	5.27	2.24	0.03	66.00	6.17	2.94	0.00
16.00	5.47	2.39	0.02	67.00	6.17	2.94	0.00
17.00	5.61	2.50	0.01	68.00	6.17	2.94	0.00
18.00	5.73	2.59	0.01	69.00	6.17	2.94	0.00
19.00	5.82	2.66	0.01	70.00	6.17	2.94	0.00
20.00	5.90	2.73	0.01	71.00	6.17	2.94	0.00
21.00	5.98	2.79	0.01	72.00	6.17	2.94	0.00
22.00	6.05	2.85	0.01				
23.00	6.11	2.90	0.01				
24.00	6.17	2.94	0.01				
25.00	6.17	2.94	0.00				
26.00	6.17	2.94	0.00				
27.00	6.17	2.94	0.00				
28.00	6.17	2.94	0.00				
29.00	6.17	2.94	0.00				
30.00	6.17	2.94	0.00				
31.00	6.17	2.94	0.00				
32.00	6.17	2.94	0.00				
33.00	6.17	2.94	0.00				
34.00	6.17	2.94	0.00				
35.00	6.17	2.94	0.00				
36.00	6.17	2.94	0.00				
37.00	6.17	2.94	0.00				
38.00	6.17	2.94	0.00				
39.00	6.17	2.94	0.00				
40.00	6.17	2.94	0.00				
41.00	6.17	2.94	0.00				
42.00	6.17	2.94	0.00				
43.00	6.17	2.94	0.00				
44.00	6.17	2.94	0.00				
45.00	6.17	2.94	0.00				
46.00	6.17	2.94	0.00				
47.00	6.17	2.94	0.00				
48.00	6.17	2.94	0.00				
49.00	6.17	2.94	0.00				
50.00	6.17	2.94	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR C: North Lot C

Runoff = 0.22 cfs @ 12.25 hrs, Volume= 0.033 af, Depth= 0.80"
 Routed to Link PR DP C : PR Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.092	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.398	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.490	44	Weighted Average
0.398		81.22% Pervious Area
0.092		18.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	50	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	30	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	171	Total			

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR C: North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	0.80	0.00
1.00	0.06	0.00	0.00	52.00	6.17	0.80	0.00
2.00	0.12	0.00	0.00	53.00	6.17	0.80	0.00
3.00	0.19	0.00	0.00	54.00	6.17	0.80	0.00
4.00	0.27	0.00	0.00	55.00	6.17	0.80	0.00
5.00	0.35	0.00	0.00	56.00	6.17	0.80	0.00
6.00	0.44	0.00	0.00	57.00	6.17	0.80	0.00
7.00	0.56	0.00	0.00	58.00	6.17	0.80	0.00
8.00	0.70	0.00	0.00	59.00	6.17	0.80	0.00
9.00	0.90	0.00	0.00	60.00	6.17	0.80	0.00
10.00	1.17	0.00	0.00	61.00	6.17	0.80	0.00
11.00	1.54	0.00	0.00	62.00	6.17	0.80	0.00
12.00	3.08	0.02	0.01	63.00	6.17	0.80	0.00
13.00	4.63	0.29	0.07	64.00	6.17	0.80	0.00
14.00	5.00	0.40	0.05	65.00	6.17	0.80	0.00
15.00	5.27	0.48	0.04	66.00	6.17	0.80	0.00
16.00	5.47	0.55	0.03	67.00	6.17	0.80	0.00
17.00	5.61	0.60	0.02	68.00	6.17	0.80	0.00
18.00	5.73	0.64	0.02	69.00	6.17	0.80	0.00
19.00	5.82	0.67	0.02	70.00	6.17	0.80	0.00
20.00	5.90	0.70	0.02	71.00	6.17	0.80	0.00
21.00	5.98	0.73	0.01	72.00	6.17	0.80	0.00
22.00	6.05	0.76	0.01				
23.00	6.11	0.78	0.01				
24.00	6.17	0.80	0.01				
25.00	6.17	0.80	0.00				
26.00	6.17	0.80	0.00				
27.00	6.17	0.80	0.00				
28.00	6.17	0.80	0.00				
29.00	6.17	0.80	0.00				
30.00	6.17	0.80	0.00				
31.00	6.17	0.80	0.00				
32.00	6.17	0.80	0.00				
33.00	6.17	0.80	0.00				
34.00	6.17	0.80	0.00				
35.00	6.17	0.80	0.00				
36.00	6.17	0.80	0.00				
37.00	6.17	0.80	0.00				
38.00	6.17	0.80	0.00				
39.00	6.17	0.80	0.00				
40.00	6.17	0.80	0.00				
41.00	6.17	0.80	0.00				
42.00	6.17	0.80	0.00				
43.00	6.17	0.80	0.00				
44.00	6.17	0.80	0.00				
45.00	6.17	0.80	0.00				
46.00	6.17	0.80	0.00				
47.00	6.17	0.80	0.00				
48.00	6.17	0.80	0.00				
49.00	6.17	0.80	0.00				
50.00	6.17	0.80	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR D1: Jordan Lot

Runoff = 2.37 cfs @ 12.13 hrs, Volume= 0.192 af, Depth= 3.53"
Routed to Pond D : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.400	98	Impervious
0.199	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.653	76	Weighted Average
0.253		38.74% Pervious Area
0.400		61.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	24	0.0021	0.05		Sheet Flow, Grass: Short n= 0.150 P2= 3.22"
1.6	289	0.0225	3.04		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.3	313	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR D1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	3.53	0.00
1.00	0.06	0.00	0.00	52.00	6.17	3.53	0.00
2.00	0.12	0.00	0.00	53.00	6.17	3.53	0.00
3.00	0.19	0.00	0.00	54.00	6.17	3.53	0.00
4.00	0.27	0.00	0.00	55.00	6.17	3.53	0.00
5.00	0.35	0.00	0.00	56.00	6.17	3.53	0.00
6.00	0.44	0.00	0.00	57.00	6.17	3.53	0.00
7.00	0.56	0.00	0.00	58.00	6.17	3.53	0.00
8.00	0.70	0.00	0.00	59.00	6.17	3.53	0.00
9.00	0.90	0.02	0.02	60.00	6.17	3.53	0.00
10.00	1.17	0.08	0.05	61.00	6.17	3.53	0.00
11.00	1.54	0.20	0.11	62.00	6.17	3.53	0.00
12.00	3.08	1.07	1.19	63.00	6.17	3.53	0.00
13.00	4.63	2.23	0.28	64.00	6.17	3.53	0.00
14.00	5.00	2.54	0.18	65.00	6.17	3.53	0.00
15.00	5.27	2.76	0.13	66.00	6.17	3.53	0.00
16.00	5.47	2.92	0.09	67.00	6.17	3.53	0.00
17.00	5.61	3.05	0.07	68.00	6.17	3.53	0.00
18.00	5.73	3.14	0.06	69.00	6.17	3.53	0.00
19.00	5.82	3.23	0.05	70.00	6.17	3.53	0.00
20.00	5.90	3.30	0.05	71.00	6.17	3.53	0.00
21.00	5.98	3.36	0.04	72.00	6.17	3.53	0.00
22.00	6.05	3.42	0.04				
23.00	6.11	3.48	0.03				
24.00	6.17	3.53	0.03				
25.00	6.17	3.53	0.00				
26.00	6.17	3.53	0.00				
27.00	6.17	3.53	0.00				
28.00	6.17	3.53	0.00				
29.00	6.17	3.53	0.00				
30.00	6.17	3.53	0.00				
31.00	6.17	3.53	0.00				
32.00	6.17	3.53	0.00				
33.00	6.17	3.53	0.00				
34.00	6.17	3.53	0.00				
35.00	6.17	3.53	0.00				
36.00	6.17	3.53	0.00				
37.00	6.17	3.53	0.00				
38.00	6.17	3.53	0.00				
39.00	6.17	3.53	0.00				
40.00	6.17	3.53	0.00				
41.00	6.17	3.53	0.00				
42.00	6.17	3.53	0.00				
43.00	6.17	3.53	0.00				
44.00	6.17	3.53	0.00				
45.00	6.17	3.53	0.00				
46.00	6.17	3.53	0.00				
47.00	6.17	3.53	0.00				
48.00	6.17	3.53	0.00				
49.00	6.17	3.53	0.00				
50.00	6.17	3.53	0.00				

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR D2: Front Yard

Runoff = 1.72 cfs @ 12.15 hrs, Volume= 0.143 af, Depth= 2.94"
 Routed to Link PR DR D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.123	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.292	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	70	Weighted Average
0.459		78.87% Pervious Area
0.123		21.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	75	0.0267	1.14		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.4	120	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.2	328	Total			

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR D2: Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	2.94	0.00
1.00	0.06	0.00	0.00	52.00	6.17	2.94	0.00
2.00	0.12	0.00	0.00	53.00	6.17	2.94	0.00
3.00	0.19	0.00	0.00	54.00	6.17	2.94	0.00
4.00	0.27	0.00	0.00	55.00	6.17	2.94	0.00
5.00	0.35	0.00	0.00	56.00	6.17	2.94	0.00
6.00	0.44	0.00	0.00	57.00	6.17	2.94	0.00
7.00	0.56	0.00	0.00	58.00	6.17	2.94	0.00
8.00	0.70	0.00	0.00	59.00	6.17	2.94	0.00
9.00	0.90	0.00	0.00	60.00	6.17	2.94	0.00
10.00	1.17	0.02	0.02	61.00	6.17	2.94	0.00
11.00	1.54	0.09	0.06	62.00	6.17	2.94	0.00
12.00	3.08	0.76	0.79	63.00	6.17	2.94	0.00
13.00	4.63	1.76	0.23	64.00	6.17	2.94	0.00
14.00	5.00	2.04	0.14	65.00	6.17	2.94	0.00
15.00	5.27	2.24	0.11	66.00	6.17	2.94	0.00
16.00	5.47	2.39	0.08	67.00	6.17	2.94	0.00
17.00	5.61	2.50	0.06	68.00	6.17	2.94	0.00
18.00	5.73	2.59	0.05	69.00	6.17	2.94	0.00
19.00	5.82	2.66	0.04	70.00	6.17	2.94	0.00
20.00	5.90	2.73	0.04	71.00	6.17	2.94	0.00
21.00	5.98	2.79	0.03	72.00	6.17	2.94	0.00
22.00	6.05	2.85	0.03				
23.00	6.11	2.90	0.03				
24.00	6.17	2.94	0.03				
25.00	6.17	2.94	0.00				
26.00	6.17	2.94	0.00				
27.00	6.17	2.94	0.00				
28.00	6.17	2.94	0.00				
29.00	6.17	2.94	0.00				
30.00	6.17	2.94	0.00				
31.00	6.17	2.94	0.00				
32.00	6.17	2.94	0.00				
33.00	6.17	2.94	0.00				
34.00	6.17	2.94	0.00				
35.00	6.17	2.94	0.00				
36.00	6.17	2.94	0.00				
37.00	6.17	2.94	0.00				
38.00	6.17	2.94	0.00				
39.00	6.17	2.94	0.00				
40.00	6.17	2.94	0.00				
41.00	6.17	2.94	0.00				
42.00	6.17	2.94	0.00				
43.00	6.17	2.94	0.00				
44.00	6.17	2.94	0.00				
45.00	6.17	2.94	0.00				
46.00	6.17	2.94	0.00				
47.00	6.17	2.94	0.00				
48.00	6.17	2.94	0.00				
49.00	6.17	2.94	0.00				
50.00	6.17	2.94	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR E1: Jordan Lot

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af, Depth= 4.68"
Routed to Pond 2P : WQS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.038	98	Impervious
0.008	32	Woods/grass comb., Good, HSG A
0.046	87	Weighted Average
0.008		17.39% Pervious Area
0.038		82.61% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR E1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	4.68	0.00
1.00	0.06	0.00	0.00	52.00	6.17	4.68	0.00
2.00	0.12	0.00	0.00	53.00	6.17	4.68	0.00
3.00	0.19	0.00	0.00	54.00	6.17	4.68	0.00
4.00	0.27	0.00	0.00	55.00	6.17	4.68	0.00
5.00	0.35	0.00	0.00	56.00	6.17	4.68	0.00
6.00	0.44	0.01	0.00	57.00	6.17	4.68	0.00
7.00	0.56	0.04	0.00	58.00	6.17	4.68	0.00
8.00	0.70	0.09	0.00	59.00	6.17	4.68	0.00
9.00	0.90	0.17	0.01	60.00	6.17	4.68	0.00
10.00	1.17	0.32	0.01	61.00	6.17	4.68	0.00
11.00	1.54	0.56	0.01	62.00	6.17	4.68	0.00
12.00	3.08	1.81	0.15	63.00	6.17	4.68	0.00
13.00	4.63	3.22	0.02	64.00	6.17	4.68	0.00
14.00	5.00	3.57	0.01	65.00	6.17	4.68	0.00
15.00	5.27	3.82	0.01	66.00	6.17	4.68	0.00
16.00	5.47	4.01	0.01	67.00	6.17	4.68	0.00
17.00	5.61	4.15	0.01	68.00	6.17	4.68	0.00
18.00	5.73	4.26	0.00	69.00	6.17	4.68	0.00
19.00	5.82	4.35	0.00	70.00	6.17	4.68	0.00
20.00	5.90	4.43	0.00	71.00	6.17	4.68	0.00
21.00	5.98	4.50	0.00	72.00	6.17	4.68	0.00
22.00	6.05	4.57	0.00				
23.00	6.11	4.63	0.00				
24.00	6.17	4.68	0.00				
25.00	6.17	4.68	0.00				
26.00	6.17	4.68	0.00				
27.00	6.17	4.68	0.00				
28.00	6.17	4.68	0.00				
29.00	6.17	4.68	0.00				
30.00	6.17	4.68	0.00				
31.00	6.17	4.68	0.00				
32.00	6.17	4.68	0.00				
33.00	6.17	4.68	0.00				
34.00	6.17	4.68	0.00				
35.00	6.17	4.68	0.00				
36.00	6.17	4.68	0.00				
37.00	6.17	4.68	0.00				
38.00	6.17	4.68	0.00				
39.00	6.17	4.68	0.00				
40.00	6.17	4.68	0.00				
41.00	6.17	4.68	0.00				
42.00	6.17	4.68	0.00				
43.00	6.17	4.68	0.00				
44.00	6.17	4.68	0.00				
45.00	6.17	4.68	0.00				
46.00	6.17	4.68	0.00				
47.00	6.17	4.68	0.00				
48.00	6.17	4.68	0.00				
49.00	6.17	4.68	0.00				
50.00	6.17	4.68	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR E2: Jordan Lot

Runoff = 0.64 cfs @ 12.17 hrs, Volume= 0.055 af, Depth= 3.33"
 Routed to Link PR DP E : EX BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.128	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.071	32	Woods/grass comb., Good, HSG A
0.199	74	Weighted Average
0.071		35.68% Pervious Area
0.128		64.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	55	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.3	45	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0					Direct Entry,
11.8	100	Total			

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR E2: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	3.33	0.00
1.00	0.06	0.00	0.00	52.00	6.17	3.33	0.00
2.00	0.12	0.00	0.00	53.00	6.17	3.33	0.00
3.00	0.19	0.00	0.00	54.00	6.17	3.33	0.00
4.00	0.27	0.00	0.00	55.00	6.17	3.33	0.00
5.00	0.35	0.00	0.00	56.00	6.17	3.33	0.00
6.00	0.44	0.00	0.00	57.00	6.17	3.33	0.00
7.00	0.56	0.00	0.00	58.00	6.17	3.33	0.00
8.00	0.70	0.00	0.00	59.00	6.17	3.33	0.00
9.00	0.90	0.01	0.00	60.00	6.17	3.33	0.00
10.00	1.17	0.05	0.01	61.00	6.17	3.33	0.00
11.00	1.54	0.16	0.03	62.00	6.17	3.33	0.00
12.00	3.08	0.96	0.29	63.00	6.17	3.33	0.00
13.00	4.63	2.07	0.09	64.00	6.17	3.33	0.00
14.00	5.00	2.37	0.05	65.00	6.17	3.33	0.00
15.00	5.27	2.58	0.04	66.00	6.17	3.33	0.00
16.00	5.47	2.74	0.03	67.00	6.17	3.33	0.00
17.00	5.61	2.86	0.02	68.00	6.17	3.33	0.00
18.00	5.73	2.96	0.02	69.00	6.17	3.33	0.00
19.00	5.82	3.03	0.02	70.00	6.17	3.33	0.00
20.00	5.90	3.10	0.01	71.00	6.17	3.33	0.00
21.00	5.98	3.17	0.01	72.00	6.17	3.33	0.00
22.00	6.05	3.23	0.01				
23.00	6.11	3.28	0.01				
24.00	6.17	3.33	0.01				
25.00	6.17	3.33	0.00				
26.00	6.17	3.33	0.00				
27.00	6.17	3.33	0.00				
28.00	6.17	3.33	0.00				
29.00	6.17	3.33	0.00				
30.00	6.17	3.33	0.00				
31.00	6.17	3.33	0.00				
32.00	6.17	3.33	0.00				
33.00	6.17	3.33	0.00				
34.00	6.17	3.33	0.00				
35.00	6.17	3.33	0.00				
36.00	6.17	3.33	0.00				
37.00	6.17	3.33	0.00				
38.00	6.17	3.33	0.00				
39.00	6.17	3.33	0.00				
40.00	6.17	3.33	0.00				
41.00	6.17	3.33	0.00				
42.00	6.17	3.33	0.00				
43.00	6.17	3.33	0.00				
44.00	6.17	3.33	0.00				
45.00	6.17	3.33	0.00				
46.00	6.17	3.33	0.00				
47.00	6.17	3.33	0.00				
48.00	6.17	3.33	0.00				
49.00	6.17	3.33	0.00				
50.00	6.17	3.33	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Subcatchment PR F: Upper Lot

Runoff = 2.81 cfs @ 12.09 hrs, Volume= 0.208 af, Depth= 4.46"
Routed to Link PR DP F : PR Main Campus

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

Area (ac)	CN	Description
* 0.356	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.135	79	Woods/grass comb., Good, HSG D
0.069	32	Woods/grass comb., Good, HSG A
0.560	85	Weighted Average
0.204		36.43% Pervious Area
0.356		63.57% Impervious Area

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

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Subcatchment PR F: Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	6.17	4.46	0.00
1.00	0.06	0.00	0.00	52.00	6.17	4.46	0.00
2.00	0.12	0.00	0.00	53.00	6.17	4.46	0.00
3.00	0.19	0.00	0.00	54.00	6.17	4.46	0.00
4.00	0.27	0.00	0.00	55.00	6.17	4.46	0.00
5.00	0.35	0.00	0.00	56.00	6.17	4.46	0.00
6.00	0.44	0.00	0.00	57.00	6.17	4.46	0.00
7.00	0.56	0.02	0.01	58.00	6.17	4.46	0.00
8.00	0.70	0.06	0.03	59.00	6.17	4.46	0.00
9.00	0.90	0.13	0.05	60.00	6.17	4.46	0.00
10.00	1.17	0.26	0.09	61.00	6.17	4.46	0.00
11.00	1.54	0.48	0.16	62.00	6.17	4.46	0.00
12.00	3.08	1.66	1.76	63.00	6.17	4.46	0.00
13.00	4.63	3.03	0.26	64.00	6.17	4.46	0.00
14.00	5.00	3.37	0.16	65.00	6.17	4.46	0.00
15.00	5.27	3.62	0.12	66.00	6.17	4.46	0.00
16.00	5.47	3.80	0.09	67.00	6.17	4.46	0.00
17.00	5.61	3.94	0.07	68.00	6.17	4.46	0.00
18.00	5.73	4.04	0.05	69.00	6.17	4.46	0.00
19.00	5.82	4.13	0.05	70.00	6.17	4.46	0.00
20.00	5.90	4.21	0.04	71.00	6.17	4.46	0.00
21.00	5.98	4.29	0.04	72.00	6.17	4.46	0.00
22.00	6.05	4.35	0.04				
23.00	6.11	4.41	0.03				
24.00	6.17	4.46	0.03				
25.00	6.17	4.46	0.00				
26.00	6.17	4.46	0.00				
27.00	6.17	4.46	0.00				
28.00	6.17	4.46	0.00				
29.00	6.17	4.46	0.00				
30.00	6.17	4.46	0.00				
31.00	6.17	4.46	0.00				
32.00	6.17	4.46	0.00				
33.00	6.17	4.46	0.00				
34.00	6.17	4.46	0.00				
35.00	6.17	4.46	0.00				
36.00	6.17	4.46	0.00				
37.00	6.17	4.46	0.00				
38.00	6.17	4.46	0.00				
39.00	6.17	4.46	0.00				
40.00	6.17	4.46	0.00				
41.00	6.17	4.46	0.00				
42.00	6.17	4.46	0.00				
43.00	6.17	4.46	0.00				
44.00	6.17	4.46	0.00				
45.00	6.17	4.46	0.00				
46.00	6.17	4.46	0.00				
47.00	6.17	4.46	0.00				
48.00	6.17	4.46	0.00				
49.00	6.17	4.46	0.00				
50.00	6.17	4.46	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Pond 2P: WQS

Inflow Area = 0.046 ac, 82.61% Impervious, Inflow Depth = 4.68" for 25-yr 24-hr event
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af
Outflow = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af
Routed to Link PR DP E : EX BMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 249.24' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.23 cfs @ 12.09 hrs HW=249.24' TW=0.00' (Dynamic Tailwater)
↑1=Orifice/Grate (Orifice Controls 0.23 cfs @ 1.65 fps)

Belmont Hill School - Proposed Conditions*Type III 24-hr 25-yr 24-hr Rainfall=6.17"*

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Hydrograph for Pond 2P: WQS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	249.00	0.00	51.00	0.00	249.00	0.00
1.00	0.00	249.00	0.00	52.00	0.00	249.00	0.00
2.00	0.00	249.00	0.00	53.00	0.00	249.00	0.00
3.00	0.00	249.00	0.00	54.00	0.00	249.00	0.00
4.00	0.00	249.00	0.00	55.00	0.00	249.00	0.00
5.00	0.00	249.01	0.00	56.00	0.00	249.00	0.00
6.00	0.00	249.01	0.00	57.00	0.00	249.00	0.00
7.00	0.00	249.02	0.00	58.00	0.00	249.00	0.00
8.00	0.00	249.02	0.00	59.00	0.00	249.00	0.00
9.00	0.01	249.03	0.01	60.00	0.00	249.00	0.00
10.00	0.01	249.04	0.01	61.00	0.00	249.00	0.00
11.00	0.01	249.06	0.01	62.00	0.00	249.00	0.00
12.00	0.15	249.19	0.15	63.00	0.00	249.00	0.00
13.00	0.02	249.07	0.02	64.00	0.00	249.00	0.00
14.00	0.01	249.06	0.01	65.00	0.00	249.00	0.00
15.00	0.01	249.05	0.01	66.00	0.00	249.00	0.00
16.00	0.01	249.04	0.01	67.00	0.00	249.00	0.00
17.00	0.01	249.04	0.01	68.00	0.00	249.00	0.00
18.00	0.00	249.03	0.00	69.00	0.00	249.00	0.00
19.00	0.00	249.03	0.00	70.00	0.00	249.00	0.00
20.00	0.00	249.03	0.00	71.00	0.00	249.00	0.00
21.00	0.00	249.03	0.00	72.00	0.00	249.00	0.00
22.00	0.00	249.03	0.00				
23.00	0.00	249.02	0.00				
24.00	0.00	249.02	0.00				
25.00	0.00	249.00	0.00				
26.00	0.00	249.00	0.00				
27.00	0.00	249.00	0.00				
28.00	0.00	249.00	0.00				
29.00	0.00	249.00	0.00				
30.00	0.00	249.00	0.00				
31.00	0.00	249.00	0.00				
32.00	0.00	249.00	0.00				
33.00	0.00	249.00	0.00				
34.00	0.00	249.00	0.00				
35.00	0.00	249.00	0.00				
36.00	0.00	249.00	0.00				
37.00	0.00	249.00	0.00				
38.00	0.00	249.00	0.00				
39.00	0.00	249.00	0.00				
40.00	0.00	249.00	0.00				
41.00	0.00	249.00	0.00				
42.00	0.00	249.00	0.00				
43.00	0.00	249.00	0.00				
44.00	0.00	249.00	0.00				
45.00	0.00	249.00	0.00				
46.00	0.00	249.00	0.00				
47.00	0.00	249.00	0.00				
48.00	0.00	249.00	0.00				
49.00	0.00	249.00	0.00				
50.00	0.00	249.00	0.00				

Belmont Hill School - Proposed Conditions*Type III 24-hr 25-yr 24-hr Rainfall=6.17"*

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Stage-Area-Storage for Pond 2P: WQS

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
249.00	0.000	249.51	0.000
249.01	0.000	249.52	0.000
249.02	0.000	249.53	0.000
249.03	0.000	249.54	0.000
249.04	0.000	249.55	0.000
249.05	0.000	249.56	0.000
249.06	0.000	249.57	0.000
249.07	0.000	249.58	0.000
249.08	0.000	249.59	0.000
249.09	0.000	249.60	0.000
249.10	0.000	249.61	0.000
249.11	0.000	249.62	0.000
249.12	0.000	249.63	0.000
249.13	0.000	249.64	0.000
249.14	0.000	249.65	0.000
249.15	0.000	249.66	0.000
249.16	0.000	249.67	0.000
249.17	0.000	249.68	0.000
249.18	0.000	249.69	0.000
249.19	0.000	249.70	0.000
249.20	0.000	249.71	0.000
249.21	0.000	249.72	0.000
249.22	0.000	249.73	0.000
249.23	0.000	249.74	0.000
249.24	0.000	249.75	0.000
249.25	0.000	249.76	0.000
249.26	0.000	249.77	0.000
249.27	0.000	249.78	0.000
249.28	0.000	249.79	0.000
249.29	0.000	249.80	0.000
249.30	0.000	249.81	0.000
249.31	0.000	249.82	0.000
249.32	0.000	249.83	0.000
249.33	0.000	249.84	0.000
249.34	0.000	249.85	0.000
249.35	0.000	249.86	0.000
249.36	0.000	249.87	0.000
249.37	0.000	249.88	0.000
249.38	0.000	249.89	0.000
249.39	0.000	249.90	0.000
249.40	0.000	249.91	0.000
249.41	0.000	249.92	0.000
249.42	0.000	249.93	0.000
249.43	0.000	249.94	0.000
249.44	0.000	249.95	0.000
249.45	0.000	249.96	0.000
249.46	0.000	249.97	0.000
249.47	0.000	249.98	0.000
249.48	0.000	249.99	0.000
249.49	0.000	250.00	0.000
249.50	0.000		

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Pond A1: Porous Pave

Inflow Area = 0.225 ac, 100.00% Impervious, Inflow Depth = 5.93" for 25-yr 24-hr event
 Inflow = 1.33 cfs @ 12.09 hrs, Volume= 0.111 af
 Outflow = 0.17 cfs @ 12.64 hrs, Volume= 0.111 af, Atten= 87%, Lag= 33.5 min
 Discarded = 0.17 cfs @ 12.64 hrs, Volume= 0.111 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link PR DP A : PR Park Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 0.51' @ 12.64 hrs Surf.Area= 9,800 sf Storage= 1,495 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 58.6 min (803.4 - 744.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,880 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 19,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	9,800	0	0
2.00	9,800	19,600	19,600

Device	Routing	Invert	Outlet Devices
#0	Primary	2.00'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.588 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.17 cfs @ 12.64 hrs HW=0.51' (Free Discharge)
 ↑**1=Exfiltration** (Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=0.00' (Dynamic Tailwater)

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Pond A1: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	0.00	0.00	0.00	0.00
2.50	0.01	0	0.00	0.01	0.01	0.00
5.00	0.02	0	0.00	0.02	0.02	0.00
7.50	0.03	0	0.00	0.03	0.03	0.00
10.00	0.07	0	0.00	0.07	0.07	0.00
12.50	0.28	1,473	0.50	0.17	0.17	0.00
15.00	0.05	848	0.29	0.15	0.15	0.00
17.50	0.03	0	0.00	0.00	0.00	0.00
20.00	0.02	0	0.00	0.00	0.00	0.00
22.50	0.01	0	0.00	0.00	0.00	0.00
25.00	0.00	0	0.00	0.00	0.00	0.00
27.50	0.00	0	0.00	0.00	0.00	0.00
30.00	0.00	0	0.00	0.00	0.00	0.00
32.50	0.00	0	0.00	0.00	0.00	0.00
35.00	0.00	0	0.00	0.00	0.00	0.00
37.50	0.00	0	0.00	0.00	0.00	0.00
40.00	0.00	0	0.00	0.00	0.00	0.00
42.50	0.00	0	0.00	0.00	0.00	0.00
45.00	0.00	0	0.00	0.00	0.00	0.00
47.50	0.00	0	0.00	0.00	0.00	0.00
50.00	0.00	0	0.00	0.00	0.00	0.00
52.50	0.00	0	0.00	0.00	0.00	0.00
55.00	0.00	0	0.00	0.00	0.00	0.00
57.50	0.00	0	0.00	0.00	0.00	0.00
60.00	0.00	0	0.00	0.00	0.00	0.00
62.50	0.00	0	0.00	0.00	0.00	0.00
65.00	0.00	0	0.00	0.00	0.00	0.00
67.50	0.00	0	0.00	0.00	0.00	0.00
70.00	0.00	0	0.00	0.00	0.00	0.00
72.50	0.00	0	0.00	0.00	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Stage-Area-Storage for Pond A1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	9,800	0	1.02	9,800	2,999
0.02	9,800	59	1.04	9,800	3,058
0.04	9,800	118	1.06	9,800	3,116
0.06	9,800	176	1.08	9,800	3,175
0.08	9,800	235	1.10	9,800	3,234
0.10	9,800	294	1.12	9,800	3,293
0.12	9,800	353	1.14	9,800	3,352
0.14	9,800	412	1.16	9,800	3,410
0.16	9,800	470	1.18	9,800	3,469
0.18	9,800	529	1.20	9,800	3,528
0.20	9,800	588	1.22	9,800	3,587
0.22	9,800	647	1.24	9,800	3,646
0.24	9,800	706	1.26	9,800	3,704
0.26	9,800	764	1.28	9,800	3,763
0.28	9,800	823	1.30	9,800	3,822
0.30	9,800	882	1.32	9,800	3,881
0.32	9,800	941	1.34	9,800	3,940
0.34	9,800	1,000	1.36	9,800	3,998
0.36	9,800	1,058	1.38	9,800	4,057
0.38	9,800	1,117	1.40	9,800	4,116
0.40	9,800	1,176	1.42	9,800	4,175
0.42	9,800	1,235	1.44	9,800	4,234
0.44	9,800	1,294	1.46	9,800	4,292
0.46	9,800	1,352	1.48	9,800	4,351
0.48	9,800	1,411	1.50	9,800	4,410
0.50	9,800	1,470	1.52	9,800	4,469
0.52	9,800	1,529	1.54	9,800	4,528
0.54	9,800	1,588	1.56	9,800	4,586
0.56	9,800	1,646	1.58	9,800	4,645
0.58	9,800	1,705	1.60	9,800	4,704
0.60	9,800	1,764	1.62	9,800	4,763
0.62	9,800	1,823	1.64	9,800	4,822
0.64	9,800	1,882	1.66	9,800	4,880
0.66	9,800	1,940	1.68	9,800	4,939
0.68	9,800	1,999	1.70	9,800	4,998
0.70	9,800	2,058	1.72	9,800	5,057
0.72	9,800	2,117	1.74	9,800	5,116
0.74	9,800	2,176	1.76	9,800	5,174
0.76	9,800	2,234	1.78	9,800	5,233
0.78	9,800	2,293	1.80	9,800	5,292
0.80	9,800	2,352	1.82	9,800	5,351
0.82	9,800	2,411	1.84	9,800	5,410
0.84	9,800	2,470	1.86	9,800	5,468
0.86	9,800	2,528	1.88	9,800	5,527
0.88	9,800	2,587	1.90	9,800	5,586
0.90	9,800	2,646	1.92	9,800	5,645
0.92	9,800	2,705	1.94	9,800	5,704
0.94	9,800	2,764	1.96	9,800	5,762
0.96	9,800	2,822	1.98	9,800	5,821
0.98	9,800	2,881	2.00	9,800	5,880
1.00	9,800	2,940			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Pond B1: Porous Pave

Inflow Area = 1.238 ac, 71.16% Impervious, Inflow Depth = 4.79" for 25-yr 24-hr event
Inflow = 6.55 cfs @ 12.09 hrs, Volume= 0.494 af
Outflow = 0.47 cfs @ 13.42 hrs, Volume= 0.495 af, Atten= 93%, Lag= 80.1 min
Discarded = 0.47 cfs @ 13.42 hrs, Volume= 0.495 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 0.85' @ 13.42 hrs Surf.Area= 36,800 sf Storage= 9,342 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 183.7 min (974.2 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	22,080 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 73,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	36,800	0	0
2.00	36,800	73,600	73,600

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.391 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.47 cfs @ 13.42 hrs HW=0.85' (Free Discharge)
↑1=Exfiltration - TP8 (Controls 0.47 cfs)

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Pond B1: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.01	0	0.00	0.01
7.50	0.06	0	0.00	0.06
10.00	0.23	0	0.00	0.23
12.50	1.44	8,647	0.78	0.46
15.00	0.28	8,723	0.79	0.46
17.50	0.14	6,459	0.59	0.43
20.00	0.10	3,783	0.34	0.39
22.50	0.08	1,228	0.11	0.35
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Stage-Area-Storage for Pond B1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	36,800	0	1.02	36,800	11,261
0.02	36,800	221	1.04	36,800	11,482
0.04	36,800	442	1.06	36,800	11,702
0.06	36,800	662	1.08	36,800	11,923
0.08	36,800	883	1.10	36,800	12,144
0.10	36,800	1,104	1.12	36,800	12,365
0.12	36,800	1,325	1.14	36,800	12,586
0.14	36,800	1,546	1.16	36,800	12,806
0.16	36,800	1,766	1.18	36,800	13,027
0.18	36,800	1,987	1.20	36,800	13,248
0.20	36,800	2,208	1.22	36,800	13,469
0.22	36,800	2,429	1.24	36,800	13,690
0.24	36,800	2,650	1.26	36,800	13,910
0.26	36,800	2,870	1.28	36,800	14,131
0.28	36,800	3,091	1.30	36,800	14,352
0.30	36,800	3,312	1.32	36,800	14,573
0.32	36,800	3,533	1.34	36,800	14,794
0.34	36,800	3,754	1.36	36,800	15,014
0.36	36,800	3,974	1.38	36,800	15,235
0.38	36,800	4,195	1.40	36,800	15,456
0.40	36,800	4,416	1.42	36,800	15,677
0.42	36,800	4,637	1.44	36,800	15,898
0.44	36,800	4,858	1.46	36,800	16,118
0.46	36,800	5,078	1.48	36,800	16,339
0.48	36,800	5,299	1.50	36,800	16,560
0.50	36,800	5,520	1.52	36,800	16,781
0.52	36,800	5,741	1.54	36,800	17,002
0.54	36,800	5,962	1.56	36,800	17,222
0.56	36,800	6,182	1.58	36,800	17,443
0.58	36,800	6,403	1.60	36,800	17,664
0.60	36,800	6,624	1.62	36,800	17,885
0.62	36,800	6,845	1.64	36,800	18,106
0.64	36,800	7,066	1.66	36,800	18,326
0.66	36,800	7,286	1.68	36,800	18,547
0.68	36,800	7,507	1.70	36,800	18,768
0.70	36,800	7,728	1.72	36,800	18,989
0.72	36,800	7,949	1.74	36,800	19,210
0.74	36,800	8,170	1.76	36,800	19,430
0.76	36,800	8,390	1.78	36,800	19,651
0.78	36,800	8,611	1.80	36,800	19,872
0.80	36,800	8,832	1.82	36,800	20,093
0.82	36,800	9,053	1.84	36,800	20,314
0.84	36,800	9,274	1.86	36,800	20,534
0.86	36,800	9,494	1.88	36,800	20,755
0.88	36,800	9,715	1.90	36,800	20,976
0.90	36,800	9,936	1.92	36,800	21,197
0.92	36,800	10,157	1.94	36,800	21,418
0.94	36,800	10,378	1.96	36,800	21,638
0.96	36,800	10,598	1.98	36,800	21,859
0.98	36,800	10,819	2.00	36,800	22,080
1.00	36,800	11,040			

Belmont Hill School - Proposed Conditions

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Pond B3: Subsurface Chambers

Inflow Area = 0.476 ac, 100.00% Impervious, Inflow Depth = 5.93" for 25-yr 24-hr event
 Inflow = 2.81 cfs @ 12.09 hrs, Volume= 0.235 af
 Outflow = 1.55 cfs @ 12.22 hrs, Volume= 0.235 af, Atten= 45%, Lag= 7.9 min
 Discarded = 0.07 cfs @ 12.22 hrs, Volume= 0.150 af
 Primary = 1.48 cfs @ 12.22 hrs, Volume= 0.085 af
 Routed to Link PR DP B : PR Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 259.95' @ 12.22 hrs Surf.Area= 2,445 sf Storage= 3,712 cf

Plug-Flow detention time= 267.1 min calculated for 0.235 af (100% of inflow)
 Center-of-Mass det. time= 267.4 min (1,012.1 - 744.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	258.00'	1,672 cf	32.87'W x 74.37'L x 3.56'H Field A 8,714 cf Overall - 4,533 cf Embedded = 4,181 cf x 40.0% Voids
#2A	258.33'	4,306 cf	ACF R-Tank SD 3 x 660 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 660 Chambers in 22 Rows
		5,979 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	259.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 0.50 1.50 Width (feet) 1.50 1.50 4.00 4.00
#2	Discarded	258.00'	0.800 in/hr Exfiltration - TP3 over Surface area Conductivity to Groundwater Elevation = 255.00'
#3	Primary	257.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 12.22 hrs HW=259.94' (Free Discharge)

↑**2=Exfiltration - TP3** (Controls 0.07 cfs)

Primary OutFlow Max=1.45 cfs @ 12.22 hrs HW=259.94' TW=0.00' (Dynamic Tailwater)

↑**3=Orifice/Grate** (Passes 1.45 cfs of 4.85 cfs potential flow)

↑**1=Custom Weir/Orifice** (Weir Controls 1.45 cfs @ 2.18 fps)

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Pond B3: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

30 Chambers/Row x 2.35' Long = 70.37' Row Length +24.0" End Stone x 2 = 74.37' Base Length

22 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 32.87' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

660 Chambers x 6.5 cf = 4,306.2 cf Chamber Storage

660 Chambers x 6.9 cf = 4,532.9 cf Displacement

8,713.9 cf Field - 4,532.9 cf Chambers = 4,181.1 cf Stone x 40.0% Voids = 1,672.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,978.7 cf = 0.137 af

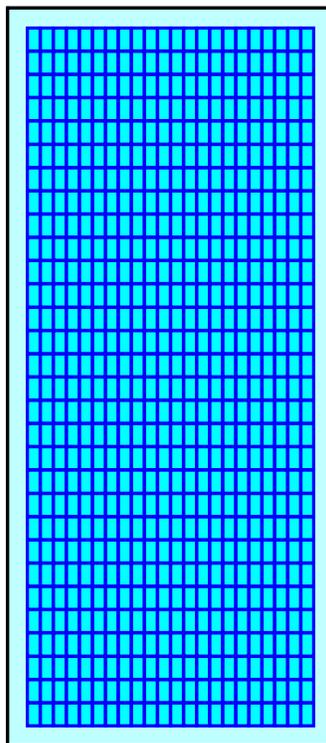
Overall Storage Efficiency = 68.6%

Overall System Size = 74.37' x 32.87' x 3.56'

660 Chambers

322.7 cy Field

154.9 cy Stone



Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Pond B3: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	258.00	0.00	0.00	0.00
2.50	0.02	0	258.00	0.02	0.02	0.00
5.00	0.04	0	258.00	0.04	0.04	0.00
7.50	0.06	38	258.04	0.05	0.05	0.00
10.00	0.14	473	258.40	0.05	0.05	0.00
12.50	0.59	3,424	259.81	0.93	0.07	0.86
15.00	0.11	2,878	259.55	0.13	0.07	0.06
17.50	0.06	2,774	259.50	0.07	0.07	0.00
20.00	0.04	2,574	259.41	0.07	0.07	0.00
22.50	0.03	2,296	259.27	0.06	0.06	0.00
25.00	0.00	1,886	259.08	0.06	0.06	0.00
27.50	0.00	1,350	258.82	0.06	0.06	0.00
30.00	0.00	847	258.58	0.05	0.05	0.00
32.50	0.00	376	258.36	0.05	0.05	0.00
35.00	0.00	0	258.00	0.00	0.00	0.00
37.50	0.00	0	258.00	0.00	0.00	0.00
40.00	0.00	0	258.00	0.00	0.00	0.00
42.50	0.00	0	258.00	0.00	0.00	0.00
45.00	0.00	0	258.00	0.00	0.00	0.00
47.50	0.00	0	258.00	0.00	0.00	0.00
50.00	0.00	0	258.00	0.00	0.00	0.00
52.50	0.00	0	258.00	0.00	0.00	0.00
55.00	0.00	0	258.00	0.00	0.00	0.00
57.50	0.00	0	258.00	0.00	0.00	0.00
60.00	0.00	0	258.00	0.00	0.00	0.00
62.50	0.00	0	258.00	0.00	0.00	0.00
65.00	0.00	0	258.00	0.00	0.00	0.00
67.50	0.00	0	258.00	0.00	0.00	0.00
70.00	0.00	0	258.00	0.00	0.00	0.00
72.50	0.00	0	258.00	0.00	0.00	0.00

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Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Stage-Area-Storage for Pond B3: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.00	2,445	0	260.55	2,445	4,971
258.05	2,445	49	260.60	2,445	5,036
258.10	2,445	98	260.65	2,445	5,085
258.15	2,445	147	260.70	2,445	5,133
258.20	2,445	196	260.75	2,445	5,182
258.25	2,445	244	260.80	2,445	5,231
258.30	2,445	293	260.85	2,445	5,280
258.35	2,445	361	260.90	2,445	5,329
258.40	2,445	466	260.95	2,445	5,378
258.45	2,445	570	261.00	2,445	5,427
258.50	2,445	675	261.05	2,445	5,476
258.55	2,445	780	261.10	2,445	5,525
258.60	2,445	885	261.15	2,445	5,574
258.65	2,445	990	261.20	2,445	5,622
258.70	2,445	1,094	261.25	2,445	5,671
258.75	2,445	1,199	261.30	2,445	5,720
258.80	2,445	1,304	261.35	2,445	5,769
258.85	2,445	1,409	261.40	2,445	5,818
258.90	2,445	1,513	261.45	2,445	5,867
258.95	2,445	1,618	261.50	2,445	5,916
259.00	2,445	1,723	261.55	2,445	5,965
259.05	2,445	1,828			
259.10	2,445	1,932			
259.15	2,445	2,037			
259.20	2,445	2,142			
259.25	2,445	2,247			
259.30	2,445	2,352			
259.35	2,445	2,456			
259.40	2,445	2,561			
259.45	2,445	2,666			
259.50	2,445	2,771			
259.55	2,445	2,875			
259.60	2,445	2,980			
259.65	2,445	3,085			
259.70	2,445	3,190			
259.75	2,445	3,294			
259.80	2,445	3,399			
259.85	2,445	3,504			
259.90	2,445	3,609			
259.95	2,445	3,714			
260.00	2,445	3,818			
260.05	2,445	3,923			
260.10	2,445	4,028			
260.15	2,445	4,133			
260.20	2,445	4,237			
260.25	2,445	4,342			
260.30	2,445	4,447			
260.35	2,445	4,552			
260.40	2,445	4,656			
260.45	2,445	4,761			
260.50	2,445	4,866			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Pond B4: Porous Pave

Inflow Area = 0.143 ac, 0.00% Impervious, Inflow Depth = 2.94" for 25-yr 24-hr event
Inflow = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af
Outflow = 0.12 cfs @ 12.50 hrs, Volume= 0.035 af, Atten= 74%, Lag= 24.1 min
Discarded = 0.12 cfs @ 12.50 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 0.17' @ 12.50 hrs Surf.Area= 6,200 sf Storage= 322 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 14.3 min (851.2 - 836.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,720 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 12,400 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	6,200	0	0
2.00	6,200	12,400	12,400

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.800 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.12 cfs @ 12.50 hrs HW=0.17' (Free Discharge)
↑1=Exfiltration - TP8 (Controls 0.12 cfs)

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*Type III 24-hr 25-yr 24-hr Rainfall=6.17"*Prepared by Langan Engineering and Environmental Services
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Page 153**Hydrograph for Pond B4: Porous Pave**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.00	0	0.00	0.00
10.00	0.01	0	0.00	0.01
12.50	0.12	322	0.17	0.12
15.00	0.03	0	0.00	0.01
17.50	0.01	0	0.00	0.00
20.00	0.01	0	0.00	0.00
22.50	0.01	0	0.00	0.00
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Stage-Area-Storage for Pond B4: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	6,200	0	1.02	6,200	1,897
0.02	6,200	37	1.04	6,200	1,934
0.04	6,200	74	1.06	6,200	1,972
0.06	6,200	112	1.08	6,200	2,009
0.08	6,200	149	1.10	6,200	2,046
0.10	6,200	186	1.12	6,200	2,083
0.12	6,200	223	1.14	6,200	2,120
0.14	6,200	260	1.16	6,200	2,158
0.16	6,200	298	1.18	6,200	2,195
0.18	6,200	335	1.20	6,200	2,232
0.20	6,200	372	1.22	6,200	2,269
0.22	6,200	409	1.24	6,200	2,306
0.24	6,200	446	1.26	6,200	2,344
0.26	6,200	484	1.28	6,200	2,381
0.28	6,200	521	1.30	6,200	2,418
0.30	6,200	558	1.32	6,200	2,455
0.32	6,200	595	1.34	6,200	2,492
0.34	6,200	632	1.36	6,200	2,530
0.36	6,200	670	1.38	6,200	2,567
0.38	6,200	707	1.40	6,200	2,604
0.40	6,200	744	1.42	6,200	2,641
0.42	6,200	781	1.44	6,200	2,678
0.44	6,200	818	1.46	6,200	2,716
0.46	6,200	856	1.48	6,200	2,753
0.48	6,200	893	1.50	6,200	2,790
0.50	6,200	930	1.52	6,200	2,827
0.52	6,200	967	1.54	6,200	2,864
0.54	6,200	1,004	1.56	6,200	2,902
0.56	6,200	1,042	1.58	6,200	2,939
0.58	6,200	1,079	1.60	6,200	2,976
0.60	6,200	1,116	1.62	6,200	3,013
0.62	6,200	1,153	1.64	6,200	3,050
0.64	6,200	1,190	1.66	6,200	3,088
0.66	6,200	1,228	1.68	6,200	3,125
0.68	6,200	1,265	1.70	6,200	3,162
0.70	6,200	1,302	1.72	6,200	3,199
0.72	6,200	1,339	1.74	6,200	3,236
0.74	6,200	1,376	1.76	6,200	3,274
0.76	6,200	1,414	1.78	6,200	3,311
0.78	6,200	1,451	1.80	6,200	3,348
0.80	6,200	1,488	1.82	6,200	3,385
0.82	6,200	1,525	1.84	6,200	3,422
0.84	6,200	1,562	1.86	6,200	3,460
0.86	6,200	1,600	1.88	6,200	3,497
0.88	6,200	1,637	1.90	6,200	3,534
0.90	6,200	1,674	1.92	6,200	3,571
0.92	6,200	1,711	1.94	6,200	3,608
0.94	6,200	1,748	1.96	6,200	3,646
0.96	6,200	1,786	1.98	6,200	3,683
0.98	6,200	1,823	2.00	6,200	3,720
1.00	6,200	1,860			

Belmont Hill School - Proposed Conditions

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Pond D: Subsurface Chambers

Inflow Area = 0.653 ac, 61.26% Impervious, Inflow Depth = 3.53" for 25-yr 24-hr event
 Inflow = 2.37 cfs @ 12.13 hrs, Volume= 0.192 af
 Outflow = 0.31 cfs @ 12.89 hrs, Volume= 0.192 af, Atten= 87%, Lag= 45.6 min
 Discarded = 0.07 cfs @ 12.89 hrs, Volume= 0.157 af
 Primary = 0.25 cfs @ 12.89 hrs, Volume= 0.035 af
 Routed to Link PR DR D : Marsh Street CBs

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 253.57' @ 12.89 hrs Surf.Area= 2,533 sf Storage= 4,100 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 531.5 min (1,357.3 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	251.50'	1,744 cf	30.25"W x 83.76"L x 3.56"H Field A 9,030 cf Overall - 4,670 cf Embedded = 4,360 cf x 40.0% Voids
#2A	251.83'	4,437 cf	ACF R-Tank SD 3 x 680 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 680 Chambers in 20 Rows
		6,181 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	253.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 1.00 2.00 Width (feet) 4.00 4.00 4.00 4.00
#2	Discarded	251.50'	0.940 in/hr Exfiltration - TP-207 over Surface area Conductivity to Groundwater Elevation = 240.00'
#3	Primary	249.15'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 12.89 hrs HW=253.57' (Free Discharge)
 ↑2=Exfiltration - TP-207 (Controls 0.07 cfs)

Primary OutFlow Max=0.25 cfs @ 12.89 hrs HW=253.57' TW=0.00' (Dynamic Tailwater)
 ↑3=Orifice/Grate (Passes 0.25 cfs of 7.49 cfs potential flow)
 ↑1=Custom Weir/Orifice (Weir Controls 0.25 cfs @ 0.87 fps)

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Pond D: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

34 Chambers/Row x 2.35' Long = 79.76' Row Length +24.0" End Stone x 2 = 83.76' Base Length

20 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 30.25' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

680 Chambers x 6.5 cf = 4,436.7 cf Chamber Storage

680 Chambers x 6.9 cf = 4,670.2 cf Displacement

9,029.7 cf Field - 4,670.2 cf Chambers = 4,359.5 cf Stone x 40.0% Voids = 1,743.8 cf Stone Storage

Chamber Storage + Stone Storage = 6,180.5 cf = 0.142 af

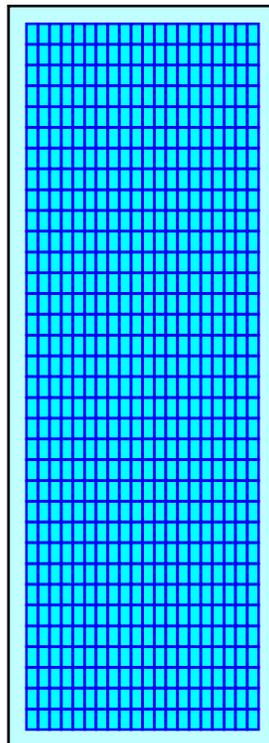
Overall Storage Efficiency = 68.4%

Overall System Size = 83.76' x 30.25' x 3.56'

680 Chambers

334.4 cy Field

161.5 cy Stone



Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Pond D: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	251.50	0.00	0.00	0.00
2.50	0.00	0	251.50	0.00	0.00	0.00
5.00	0.00	0	251.50	0.00	0.00	0.00
7.50	0.00	0	251.50	0.00	0.00	0.00
10.00	0.05	0	251.50	0.05	0.05	0.00
12.50	0.78	3,738	253.40	0.06	0.06	0.00
15.00	0.13	4,014	253.53	0.14	0.06	0.07
17.50	0.07	3,960	253.51	0.07	0.06	0.01
20.00	0.05	3,852	253.46	0.06	0.06	0.00
22.50	0.04	3,645	253.36	0.06	0.06	0.00
25.00	0.00	3,268	253.19	0.06	0.06	0.00
27.50	0.00	2,704	252.93	0.06	0.06	0.00
30.00	0.00	2,152	252.67	0.06	0.06	0.00
32.50	0.00	1,611	252.42	0.06	0.06	0.00
35.00	0.00	1,080	252.18	0.06	0.06	0.00
37.50	0.00	560	251.94	0.06	0.06	0.00
40.00	0.00	52	251.55	0.06	0.06	0.00
42.50	0.00	0	251.50	0.00	0.00	0.00
45.00	0.00	0	251.50	0.00	0.00	0.00
47.50	0.00	0	251.50	0.00	0.00	0.00
50.00	0.00	0	251.50	0.00	0.00	0.00
52.50	0.00	0	251.50	0.00	0.00	0.00
55.00	0.00	0	251.50	0.00	0.00	0.00
57.50	0.00	0	251.50	0.00	0.00	0.00
60.00	0.00	0	251.50	0.00	0.00	0.00
62.50	0.00	0	251.50	0.00	0.00	0.00
65.00	0.00	0	251.50	0.00	0.00	0.00
67.50	0.00	0	251.50	0.00	0.00	0.00
70.00	0.00	0	251.50	0.00	0.00	0.00
72.50	0.00	0	251.50	0.00	0.00	0.00

Belmont Hill School - Proposed Conditions*Type III 24-hr 25-yr 24-hr Rainfall=6.17"*

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Stage-Area-Storage for Pond D: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
251.50	2,533	0	254.05	2,533	5,136
251.55	2,533	51	254.10	2,533	5,203
251.60	2,533	101	254.15	2,533	5,254
251.65	2,533	152	254.20	2,533	5,305
251.70	2,533	203	254.25	2,533	5,355
251.75	2,533	253	254.30	2,533	5,406
251.80	2,533	304	254.35	2,533	5,457
251.85	2,533	374	254.40	2,533	5,507
251.90	2,533	482	254.45	2,533	5,558
251.95	2,533	590	254.50	2,533	5,609
252.00	2,533	699	254.55	2,533	5,659
252.05	2,533	807	254.60	2,533	5,710
252.10	2,533	915	254.65	2,533	5,761
252.15	2,533	1,023	254.70	2,533	5,811
252.20	2,533	1,132	254.75	2,533	5,862
252.25	2,533	1,240	254.80	2,533	5,913
252.30	2,533	1,348	254.85	2,533	5,963
252.35	2,533	1,456	254.90	2,533	6,014
252.40	2,533	1,564	254.95	2,533	6,065
252.45	2,533	1,673	255.00	2,533	6,115
252.50	2,533	1,781	255.05	2,533	6,166
252.55	2,533	1,889	255.10	2,533	6,181
252.60	2,533	1,997	255.15	2,533	6,181
252.65	2,533	2,106	255.20	2,533	6,181
252.70	2,533	2,214	255.25	2,533	6,181
252.75	2,533	2,322	255.30	2,533	6,181
252.80	2,533	2,430	255.35	2,533	6,181
252.85	2,533	2,539	255.40	2,533	6,181
252.90	2,533	2,647	255.45	2,533	6,181
252.95	2,533	2,755	255.50	2,533	6,181
253.00	2,533	2,863			
253.05	2,533	2,972			
253.10	2,533	3,080			
253.15	2,533	3,188			
253.20	2,533	3,296			
253.25	2,533	3,404			
253.30	2,533	3,513			
253.35	2,533	3,621			
253.40	2,533	3,729			
253.45	2,533	3,837			
253.50	2,533	3,946			
253.55	2,533	4,054			
253.60	2,533	4,162			
253.65	2,533	4,270			
253.70	2,533	4,379			
253.75	2,533	4,487			
253.80	2,533	4,595			
253.85	2,533	4,703			
253.90	2,533	4,812			
253.95	2,533	4,920			
254.00	2,533	5,028			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link PR DP A: PR Park Ave

Inflow Area = 1.875 ac, 27.31% Impervious, Inflow Depth = 2.84" for 25-yr 24-hr event
Inflow = 4.52 cfs @ 12.23 hrs, Volume= 0.444 af
Primary = 4.52 cfs @ 12.23 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions*Type III 24-hr 25-yr 24-hr Rainfall=6.17"*

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Hydrograph for Link PR DP A: PR Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.02	0.00	0.02	60.00	0.00	0.00	0.00
10.00	0.08	0.00	0.08	61.00	0.00	0.00	0.00
11.00	0.20	0.00	0.20	62.00	0.00	0.00	0.00
12.00	1.79	0.00	1.79	63.00	0.00	0.00	0.00
13.00	0.77	0.00	0.77	64.00	0.00	0.00	0.00
14.00	0.44	0.00	0.44	65.00	0.00	0.00	0.00
15.00	0.33	0.00	0.33	66.00	0.00	0.00	0.00
16.00	0.24	0.00	0.24	67.00	0.00	0.00	0.00
17.00	0.19	0.00	0.19	68.00	0.00	0.00	0.00
18.00	0.14	0.00	0.14	69.00	0.00	0.00	0.00
19.00	0.13	0.00	0.13	70.00	0.00	0.00	0.00
20.00	0.11	0.00	0.11	71.00	0.00	0.00	0.00
21.00	0.10	0.00	0.10	72.00	0.00	0.00	0.00
22.00	0.09	0.00	0.09				
23.00	0.08	0.00	0.08				
24.00	0.08	0.00	0.08				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link PR DP B: PR Wetlands

Inflow Area = 3.817 ac, 41.97% Impervious, Inflow Depth = 0.61" for 25-yr 24-hr event
Inflow = 1.99 cfs @ 12.26 hrs, Volume= 0.195 af
Primary = 1.99 cfs @ 12.26 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link PR DP B: PR Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
13.00	0.50	0.00	0.50	65.00	0.00	0.00	0.00
14.00	0.27	0.00	0.27	66.00	0.00	0.00	0.00
15.00	0.19	0.00	0.19	67.00	0.00	0.00	0.00
16.00	0.13	0.00	0.13	68.00	0.00	0.00	0.00
17.00	0.09	0.00	0.09	69.00	0.00	0.00	0.00
18.00	0.07	0.00	0.07	70.00	0.00	0.00	0.00
19.00	0.06	0.00	0.06	71.00	0.00	0.00	0.00
20.00	0.05	0.00	0.05	72.00	0.00	0.00	0.00
21.00	0.05	0.00	0.05				
22.00	0.05	0.00	0.05				
23.00	0.04	0.00	0.04				
24.00	0.04	0.00	0.04				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link PR DP C: PR Prospect St

Inflow Area = 0.490 ac, 18.78% Impervious, Inflow Depth = 0.80" for 25-yr 24-hr event
Inflow = 0.22 cfs @ 12.25 hrs, Volume= 0.033 af
Primary = 0.22 cfs @ 12.25 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions*Type III 24-hr 25-yr 24-hr Rainfall=6.17"*

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Hydrograph for Link PR DP C: PR Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.01	0.00	0.01	63.00	0.00	0.00	0.00
13.00	0.07	0.00	0.07	64.00	0.00	0.00	0.00
14.00	0.05	0.00	0.05	65.00	0.00	0.00	0.00
15.00	0.04	0.00	0.04	66.00	0.00	0.00	0.00
16.00	0.03	0.00	0.03	67.00	0.00	0.00	0.00
17.00	0.02	0.00	0.02	68.00	0.00	0.00	0.00
18.00	0.02	0.00	0.02	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.02	0.00	0.02	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link PR DP E: EX BMP

Inflow Area = 0.245 ac, 67.76% Impervious, Inflow Depth = 3.58" for 25-yr 24-hr event
Inflow = 0.82 cfs @ 12.14 hrs, Volume= 0.073 af
Primary = 0.82 cfs @ 12.14 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions*Type III 24-hr 25-yr 24-hr Rainfall=6.17"*

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Hydrograph for Link PR DP E: EX BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.04	0.00	0.04	62.00	0.00	0.00	0.00
12.00	0.44	0.00	0.44	63.00	0.00	0.00	0.00
13.00	0.11	0.00	0.11	64.00	0.00	0.00	0.00
14.00	0.07	0.00	0.07	65.00	0.00	0.00	0.00
15.00	0.05	0.00	0.05	66.00	0.00	0.00	0.00
16.00	0.04	0.00	0.04	67.00	0.00	0.00	0.00
17.00	0.03	0.00	0.03	68.00	0.00	0.00	0.00
18.00	0.02	0.00	0.02	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.02	0.00	0.02	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link PR DP F: PR Main Campus

Inflow Area = 2.040 ac, 51.23% Impervious, Inflow Depth = 2.70" for 25-yr 24-hr event
Inflow = 5.14 cfs @ 12.11 hrs, Volume= 0.459 af
Primary = 5.14 cfs @ 12.11 hrs, Volume= 0.459 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link PR DP F: PR Main Campus

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.01	0.00	0.01	57.00	0.00	0.00	0.00
7.00	0.02	0.00	0.02	58.00	0.00	0.00	0.00
8.00	0.03	0.00	0.03	59.00	0.00	0.00	0.00
9.00	0.06	0.00	0.06	60.00	0.00	0.00	0.00
10.00	0.13	0.00	0.13	61.00	0.00	0.00	0.00
11.00	0.26	0.00	0.26	62.00	0.00	0.00	0.00
12.00	2.98	0.00	2.98	63.00	0.00	0.00	0.00
13.00	0.83	0.00	0.83	64.00	0.00	0.00	0.00
14.00	0.49	0.00	0.49	65.00	0.00	0.00	0.00
15.00	0.36	0.00	0.36	66.00	0.00	0.00	0.00
16.00	0.24	0.00	0.24	67.00	0.00	0.00	0.00
17.00	0.17	0.00	0.17	68.00	0.00	0.00	0.00
18.00	0.12	0.00	0.12	69.00	0.00	0.00	0.00
19.00	0.11	0.00	0.11	70.00	0.00	0.00	0.00
20.00	0.10	0.00	0.10	71.00	0.00	0.00	0.00
21.00	0.09	0.00	0.09	72.00	0.00	0.00	0.00
22.00	0.08	0.00	0.08				
23.00	0.07	0.00	0.07				
24.00	0.06	0.00	0.06				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Summary for Link PR DR D: Marsh Street CBs

Inflow Area = 1.235 ac, 42.35% Impervious, Inflow Depth = 1.73" for 25-yr 24-hr event
Inflow = 1.72 cfs @ 12.15 hrs, Volume= 0.178 af
Primary = 1.72 cfs @ 12.15 hrs, Volume= 0.178 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

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Belmont Hill School - Proposed

Type III 24-hr 25-yr 24-hr Rainfall=6.17"

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Hydrograph for Link PR DR D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.06	0.00	0.06	62.00	0.00	0.00	0.00
12.00	0.79	0.00	0.79	63.00	0.00	0.00	0.00
13.00	0.46	0.00	0.46	64.00	0.00	0.00	0.00
14.00	0.26	0.00	0.26	65.00	0.00	0.00	0.00
15.00	0.18	0.00	0.18	66.00	0.00	0.00	0.00
16.00	0.11	0.00	0.11	67.00	0.00	0.00	0.00
17.00	0.08	0.00	0.08	68.00	0.00	0.00	0.00
18.00	0.05	0.00	0.05	69.00	0.00	0.00	0.00
19.00	0.04	0.00	0.04	70.00	0.00	0.00	0.00
20.00	0.04	0.00	0.04	71.00	0.00	0.00	0.00
21.00	0.03	0.00	0.03	72.00	0.00	0.00	0.00
22.00	0.03	0.00	0.03				
23.00	0.03	0.00	0.03				
24.00	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR A1: North Lot A1

Runoff = 1.91 cfs @ 12.09 hrs, Volume= 0.161 af, Depth= 8.61"
Routed to Pond A1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.225	98	Permeable Pavement
0.225		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR A1: North Lot A1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	8.61	0.00
1.00	0.09	0.01	0.01	52.00	8.85	8.61	0.00
2.00	0.18	0.05	0.01	53.00	8.85	8.61	0.00
3.00	0.27	0.12	0.02	54.00	8.85	8.61	0.00
4.00	0.38	0.21	0.02	55.00	8.85	8.61	0.00
5.00	0.50	0.32	0.03	56.00	8.85	8.61	0.00
6.00	0.64	0.44	0.03	57.00	8.85	8.61	0.00
7.00	0.80	0.60	0.04	58.00	8.85	8.61	0.00
8.00	1.01	0.80	0.05	59.00	8.85	8.61	0.00
9.00	1.29	1.07	0.07	60.00	8.85	8.61	0.00
10.00	1.67	1.45	0.10	61.00	8.85	8.61	0.00
11.00	2.21	1.99	0.14	62.00	8.85	8.61	0.00
12.00	4.42	4.19	1.24	63.00	8.85	8.61	0.00
13.00	6.64	6.40	0.16	64.00	8.85	8.61	0.00
14.00	7.18	6.94	0.10	65.00	8.85	8.61	0.00
15.00	7.56	7.32	0.08	66.00	8.85	8.61	0.00
16.00	7.84	7.60	0.05	67.00	8.85	8.61	0.00
17.00	8.05	7.81	0.04	68.00	8.85	8.61	0.00
18.00	8.21	7.97	0.03	69.00	8.85	8.61	0.00
19.00	8.35	8.11	0.03	70.00	8.85	8.61	0.00
20.00	8.47	8.23	0.03	71.00	8.85	8.61	0.00
21.00	8.58	8.34	0.02	72.00	8.85	8.61	0.00
22.00	8.68	8.44	0.02				
23.00	8.77	8.53	0.02				
24.00	8.85	8.61	0.02				
25.00	8.85	8.61	0.00				
26.00	8.85	8.61	0.00				
27.00	8.85	8.61	0.00				
28.00	8.85	8.61	0.00				
29.00	8.85	8.61	0.00				
30.00	8.85	8.61	0.00				
31.00	8.85	8.61	0.00				
32.00	8.85	8.61	0.00				
33.00	8.85	8.61	0.00				
34.00	8.85	8.61	0.00				
35.00	8.85	8.61	0.00				
36.00	8.85	8.61	0.00				
37.00	8.85	8.61	0.00				
38.00	8.85	8.61	0.00				
39.00	8.85	8.61	0.00				
40.00	8.85	8.61	0.00				
41.00	8.85	8.61	0.00				
42.00	8.85	8.61	0.00				
43.00	8.85	8.61	0.00				
44.00	8.85	8.61	0.00				
45.00	8.85	8.61	0.00				
46.00	8.85	8.61	0.00				
47.00	8.85	8.61	0.00				
48.00	8.85	8.61	0.00				
49.00	8.85	8.61	0.00				
50.00	8.85	8.61	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR A2: North Lot A3

Runoff = 7.79 cfs @ 12.23 hrs, Volume= 0.766 af, Depth= 5.57"
 Routed to Link PR DP A : PR Park Ave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.287	98	Impervious
* 0.042	70	Perm pavement w/out storage
0.322	32	Woods/grass comb., Good, HSG A
0.999	79	Woods/grass comb., Good, HSG D
1.650	73	Weighted Average
1.363		82.61% Pervious Area
0.287		17.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
2.2	130	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
16.5	240	Total			

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Hydrograph for Subcatchment PR A2: North Lot A3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	5.57	0.00
1.00	0.09	0.00	0.00	52.00	8.85	5.57	0.00
2.00	0.18	0.00	0.00	53.00	8.85	5.57	0.00
3.00	0.27	0.00	0.00	54.00	8.85	5.57	0.00
4.00	0.38	0.00	0.00	55.00	8.85	5.57	0.00
5.00	0.50	0.00	0.00	56.00	8.85	5.57	0.00
6.00	0.64	0.00	0.00	57.00	8.85	5.57	0.00
7.00	0.80	0.00	0.00	58.00	8.85	5.57	0.00
8.00	1.01	0.02	0.04	59.00	8.85	5.57	0.00
9.00	1.29	0.07	0.11	60.00	8.85	5.57	0.00
10.00	1.67	0.19	0.23	61.00	8.85	5.57	0.00
11.00	2.21	0.42	0.45	62.00	8.85	5.57	0.00
12.00	4.42	1.84	3.31	63.00	8.85	5.57	0.00
13.00	6.64	3.62	1.24	64.00	8.85	5.57	0.00
14.00	7.18	4.09	0.70	65.00	8.85	5.57	0.00
15.00	7.56	4.42	0.52	66.00	8.85	5.57	0.00
16.00	7.84	4.67	0.38	67.00	8.85	5.57	0.00
17.00	8.05	4.85	0.29	68.00	8.85	5.57	0.00
18.00	8.21	5.00	0.23	69.00	8.85	5.57	0.00
19.00	8.35	5.12	0.20	70.00	8.85	5.57	0.00
20.00	8.47	5.23	0.18	71.00	8.85	5.57	0.00
21.00	8.58	5.33	0.16	72.00	8.85	5.57	0.00
22.00	8.68	5.42	0.15				
23.00	8.77	5.50	0.13				
24.00	8.85	5.57	0.12				
25.00	8.85	5.57	0.00				
26.00	8.85	5.57	0.00				
27.00	8.85	5.57	0.00				
28.00	8.85	5.57	0.00				
29.00	8.85	5.57	0.00				
30.00	8.85	5.57	0.00				
31.00	8.85	5.57	0.00				
32.00	8.85	5.57	0.00				
33.00	8.85	5.57	0.00				
34.00	8.85	5.57	0.00				
35.00	8.85	5.57	0.00				
36.00	8.85	5.57	0.00				
37.00	8.85	5.57	0.00				
38.00	8.85	5.57	0.00				
39.00	8.85	5.57	0.00				
40.00	8.85	5.57	0.00				
41.00	8.85	5.57	0.00				
42.00	8.85	5.57	0.00				
43.00	8.85	5.57	0.00				
44.00	8.85	5.57	0.00				
45.00	8.85	5.57	0.00				
46.00	8.85	5.57	0.00				
47.00	8.85	5.57	0.00				
48.00	8.85	5.57	0.00				
49.00	8.85	5.57	0.00				
50.00	8.85	5.57	0.00				

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR B1: North Lot B1

Runoff = 9.88 cfs @ 12.09 hrs, Volume= 0.764 af, Depth= 7.40"
 Routed to Pond B1 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.034	98	Impervious
* 0.847	98	Permeable Pavement
0.123	32	Woods/grass comb., Good, HSG A
0.234	79	Woods/grass comb., Good, HSG D
1.238	88	Weighted Average
0.357		28.84% Pervious Area
0.881		71.16% Impervious Area

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

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Hydrograph for Subcatchment PR B1: North Lot B1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	7.40	0.00
1.00	0.09	0.00	0.00	52.00	8.85	7.40	0.00
2.00	0.18	0.00	0.00	53.00	8.85	7.40	0.00
3.00	0.27	0.00	0.00	54.00	8.85	7.40	0.00
4.00	0.38	0.01	0.02	55.00	8.85	7.40	0.00
5.00	0.50	0.03	0.04	56.00	8.85	7.40	0.00
6.00	0.64	0.08	0.06	57.00	8.85	7.40	0.00
7.00	0.80	0.15	0.11	58.00	8.85	7.40	0.00
8.00	1.01	0.26	0.16	59.00	8.85	7.40	0.00
9.00	1.29	0.43	0.27	60.00	8.85	7.40	0.00
10.00	1.67	0.71	0.40	61.00	8.85	7.40	0.00
11.00	2.21	1.14	0.64	62.00	8.85	7.40	0.00
12.00	4.42	3.13	6.33	63.00	8.85	7.40	0.00
13.00	6.64	5.24	0.87	64.00	8.85	7.40	0.00
14.00	7.18	5.77	0.55	65.00	8.85	7.40	0.00
15.00	7.56	6.14	0.42	66.00	8.85	7.40	0.00
16.00	7.84	6.41	0.29	67.00	8.85	7.40	0.00
17.00	8.05	6.62	0.23	68.00	8.85	7.40	0.00
18.00	8.21	6.78	0.18	69.00	8.85	7.40	0.00
19.00	8.35	6.91	0.16	70.00	8.85	7.40	0.00
20.00	8.47	7.03	0.14	71.00	8.85	7.40	0.00
21.00	8.58	7.14	0.13	72.00	8.85	7.40	0.00
22.00	8.68	7.23	0.12				
23.00	8.77	7.32	0.11				
24.00	8.85	7.40	0.09				
25.00	8.85	7.40	0.00				
26.00	8.85	7.40	0.00				
27.00	8.85	7.40	0.00				
28.00	8.85	7.40	0.00				
29.00	8.85	7.40	0.00				
30.00	8.85	7.40	0.00				
31.00	8.85	7.40	0.00				
32.00	8.85	7.40	0.00				
33.00	8.85	7.40	0.00				
34.00	8.85	7.40	0.00				
35.00	8.85	7.40	0.00				
36.00	8.85	7.40	0.00				
37.00	8.85	7.40	0.00				
38.00	8.85	7.40	0.00				
39.00	8.85	7.40	0.00				
40.00	8.85	7.40	0.00				
41.00	8.85	7.40	0.00				
42.00	8.85	7.40	0.00				
43.00	8.85	7.40	0.00				
44.00	8.85	7.40	0.00				
45.00	8.85	7.40	0.00				
46.00	8.85	7.40	0.00				
47.00	8.85	7.40	0.00				
48.00	8.85	7.40	0.00				
49.00	8.85	7.40	0.00				
50.00	8.85	7.40	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR B2: North Lot B2

Runoff = 2.65 cfs @ 12.24 hrs, Volume= 0.304 af, Depth= 1.86"
 Routed to Link PR DP B : PR Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.245	98	Impervious
1.655	32	Woods/grass comb., Good, HSG A
0.060	79	Woods/grass comb., Good, HSG D
1.960	42	Weighted Average
1.715		87.50% Pervious Area
0.245		12.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0300	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
1.6	110	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	162	0.0100	5.36	4.21	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, bends & connections
0.4	48	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.6	420	Total			

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR B2: North Lot B2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	1.86	0.00
1.00	0.09	0.00	0.00	52.00	8.85	1.86	0.00
2.00	0.18	0.00	0.00	53.00	8.85	1.86	0.00
3.00	0.27	0.00	0.00	54.00	8.85	1.86	0.00
4.00	0.38	0.00	0.00	55.00	8.85	1.86	0.00
5.00	0.50	0.00	0.00	56.00	8.85	1.86	0.00
6.00	0.64	0.00	0.00	57.00	8.85	1.86	0.00
7.00	0.80	0.00	0.00	58.00	8.85	1.86	0.00
8.00	1.01	0.00	0.00	59.00	8.85	1.86	0.00
9.00	1.29	0.00	0.00	60.00	8.85	1.86	0.00
10.00	1.67	0.00	0.00	61.00	8.85	1.86	0.00
11.00	2.21	0.00	0.00	62.00	8.85	1.86	0.00
12.00	4.42	0.18	0.53	63.00	8.85	1.86	0.00
13.00	6.64	0.85	0.63	64.00	8.85	1.86	0.00
14.00	7.18	1.07	0.40	65.00	8.85	1.86	0.00
15.00	7.56	1.24	0.31	66.00	8.85	1.86	0.00
16.00	7.84	1.37	0.23	67.00	8.85	1.86	0.00
17.00	8.05	1.46	0.18	68.00	8.85	1.86	0.00
18.00	8.21	1.54	0.15	69.00	8.85	1.86	0.00
19.00	8.35	1.61	0.13	70.00	8.85	1.86	0.00
20.00	8.47	1.67	0.12	71.00	8.85	1.86	0.00
21.00	8.58	1.72	0.11	72.00	8.85	1.86	0.00
22.00	8.68	1.78	0.10				
23.00	8.77	1.82	0.09				
24.00	8.85	1.86	0.08				
25.00	8.85	1.86	0.00				
26.00	8.85	1.86	0.00				
27.00	8.85	1.86	0.00				
28.00	8.85	1.86	0.00				
29.00	8.85	1.86	0.00				
30.00	8.85	1.86	0.00				
31.00	8.85	1.86	0.00				
32.00	8.85	1.86	0.00				
33.00	8.85	1.86	0.00				
34.00	8.85	1.86	0.00				
35.00	8.85	1.86	0.00				
36.00	8.85	1.86	0.00				
37.00	8.85	1.86	0.00				
38.00	8.85	1.86	0.00				
39.00	8.85	1.86	0.00				
40.00	8.85	1.86	0.00				
41.00	8.85	1.86	0.00				
42.00	8.85	1.86	0.00				
43.00	8.85	1.86	0.00				
44.00	8.85	1.86	0.00				
45.00	8.85	1.86	0.00				
46.00	8.85	1.86	0.00				
47.00	8.85	1.86	0.00				
48.00	8.85	1.86	0.00				
49.00	8.85	1.86	0.00				
50.00	8.85	1.86	0.00				

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR B3: North Lot B3

Runoff = 4.04 cfs @ 12.09 hrs, Volume= 0.342 af, Depth= 8.61"
 Routed to Pond B3 : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.476	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.476	98	Weighted Average
0.476		100.00% Impervious Area

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

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR B3: North Lot B3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	8.61	0.00
1.00	0.09	0.01	0.01	52.00	8.85	8.61	0.00
2.00	0.18	0.05	0.03	53.00	8.85	8.61	0.00
3.00	0.27	0.12	0.04	54.00	8.85	8.61	0.00
4.00	0.38	0.21	0.05	55.00	8.85	8.61	0.00
5.00	0.50	0.32	0.06	56.00	8.85	8.61	0.00
6.00	0.64	0.44	0.06	57.00	8.85	8.61	0.00
7.00	0.80	0.60	0.08	58.00	8.85	8.61	0.00
8.00	1.01	0.80	0.11	59.00	8.85	8.61	0.00
9.00	1.29	1.07	0.15	60.00	8.85	8.61	0.00
10.00	1.67	1.45	0.20	61.00	8.85	8.61	0.00
11.00	2.21	1.99	0.30	62.00	8.85	8.61	0.00
12.00	4.42	4.19	2.63	63.00	8.85	8.61	0.00
13.00	6.64	6.40	0.35	64.00	8.85	8.61	0.00
14.00	7.18	6.94	0.22	65.00	8.85	8.61	0.00
15.00	7.56	7.32	0.16	66.00	8.85	8.61	0.00
16.00	7.84	7.60	0.11	67.00	8.85	8.61	0.00
17.00	8.05	7.81	0.09	68.00	8.85	8.61	0.00
18.00	8.21	7.97	0.07	69.00	8.85	8.61	0.00
19.00	8.35	8.11	0.06	70.00	8.85	8.61	0.00
20.00	8.47	8.23	0.06	71.00	8.85	8.61	0.00
21.00	8.58	8.34	0.05	72.00	8.85	8.61	0.00
22.00	8.68	8.44	0.05				
23.00	8.77	8.53	0.04				
24.00	8.85	8.61	0.04				
25.00	8.85	8.61	0.00				
26.00	8.85	8.61	0.00				
27.00	8.85	8.61	0.00				
28.00	8.85	8.61	0.00				
29.00	8.85	8.61	0.00				
30.00	8.85	8.61	0.00				
31.00	8.85	8.61	0.00				
32.00	8.85	8.61	0.00				
33.00	8.85	8.61	0.00				
34.00	8.85	8.61	0.00				
35.00	8.85	8.61	0.00				
36.00	8.85	8.61	0.00				
37.00	8.85	8.61	0.00				
38.00	8.85	8.61	0.00				
39.00	8.85	8.61	0.00				
40.00	8.85	8.61	0.00				
41.00	8.85	8.61	0.00				
42.00	8.85	8.61	0.00				
43.00	8.85	8.61	0.00				
44.00	8.85	8.61	0.00				
45.00	8.85	8.61	0.00				
46.00	8.85	8.61	0.00				
47.00	8.85	8.61	0.00				
48.00	8.85	8.61	0.00				
49.00	8.85	8.61	0.00				
50.00	8.85	8.61	0.00				

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR B4: North Lot B4

Runoff = 0.85 cfs @ 12.09 hrs, Volume= 0.062 af, Depth= 5.20"
 Routed to Pond B4 : Porous Pave

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.000	98	Impervious
* 0.143	70	Perm pavement w/out storage
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.143	70	Weighted Average
0.143		100.00% Pervious Area

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

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR B4: North Lot B4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	5.20	0.00
1.00	0.09	0.00	0.00	52.00	8.85	5.20	0.00
2.00	0.18	0.00	0.00	53.00	8.85	5.20	0.00
3.00	0.27	0.00	0.00	54.00	8.85	5.20	0.00
4.00	0.38	0.00	0.00	55.00	8.85	5.20	0.00
5.00	0.50	0.00	0.00	56.00	8.85	5.20	0.00
6.00	0.64	0.00	0.00	57.00	8.85	5.20	0.00
7.00	0.80	0.00	0.00	58.00	8.85	5.20	0.00
8.00	1.01	0.01	0.00	59.00	8.85	5.20	0.00
9.00	1.29	0.04	0.01	60.00	8.85	5.20	0.00
10.00	1.67	0.13	0.02	61.00	8.85	5.20	0.00
11.00	2.21	0.33	0.04	62.00	8.85	5.20	0.00
12.00	4.42	1.62	0.51	63.00	8.85	5.20	0.00
13.00	6.64	3.32	0.08	64.00	8.85	5.20	0.00
14.00	7.18	3.77	0.05	65.00	8.85	5.20	0.00
15.00	7.56	4.09	0.04	66.00	8.85	5.20	0.00
16.00	7.84	4.33	0.03	67.00	8.85	5.20	0.00
17.00	8.05	4.51	0.02	68.00	8.85	5.20	0.00
18.00	8.21	4.65	0.02	69.00	8.85	5.20	0.00
19.00	8.35	4.76	0.02	70.00	8.85	5.20	0.00
20.00	8.47	4.87	0.01	71.00	8.85	5.20	0.00
21.00	8.58	4.97	0.01	72.00	8.85	5.20	0.00
22.00	8.68	5.05	0.01				
23.00	8.77	5.13	0.01				
24.00	8.85	5.20	0.01				
25.00	8.85	5.20	0.00				
26.00	8.85	5.20	0.00				
27.00	8.85	5.20	0.00				
28.00	8.85	5.20	0.00				
29.00	8.85	5.20	0.00				
30.00	8.85	5.20	0.00				
31.00	8.85	5.20	0.00				
32.00	8.85	5.20	0.00				
33.00	8.85	5.20	0.00				
34.00	8.85	5.20	0.00				
35.00	8.85	5.20	0.00				
36.00	8.85	5.20	0.00				
37.00	8.85	5.20	0.00				
38.00	8.85	5.20	0.00				
39.00	8.85	5.20	0.00				
40.00	8.85	5.20	0.00				
41.00	8.85	5.20	0.00				
42.00	8.85	5.20	0.00				
43.00	8.85	5.20	0.00				
44.00	8.85	5.20	0.00				
45.00	8.85	5.20	0.00				
46.00	8.85	5.20	0.00				
47.00	8.85	5.20	0.00				
48.00	8.85	5.20	0.00				
49.00	8.85	5.20	0.00				
50.00	8.85	5.20	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR C: North Lot C

Runoff = 0.84 cfs @ 12.19 hrs, Volume= 0.085 af, Depth= 2.09"
 Routed to Link PR DP C : PR Prospect St

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.092	98	Impervious
* 0.000	70	Perm pavement w/out storage
0.398	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.490	44	Weighted Average
0.398		81.22% Pervious Area
0.092		18.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	71	0.0535	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	50	0.0730	1.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	30	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
11.8	171	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR C: North Lot C

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	2.09	0.00
1.00	0.09	0.00	0.00	52.00	8.85	2.09	0.00
2.00	0.18	0.00	0.00	53.00	8.85	2.09	0.00
3.00	0.27	0.00	0.00	54.00	8.85	2.09	0.00
4.00	0.38	0.00	0.00	55.00	8.85	2.09	0.00
5.00	0.50	0.00	0.00	56.00	8.85	2.09	0.00
6.00	0.64	0.00	0.00	57.00	8.85	2.09	0.00
7.00	0.80	0.00	0.00	58.00	8.85	2.09	0.00
8.00	1.01	0.00	0.00	59.00	8.85	2.09	0.00
9.00	1.29	0.00	0.00	60.00	8.85	2.09	0.00
10.00	1.67	0.00	0.00	61.00	8.85	2.09	0.00
11.00	2.21	0.00	0.00	62.00	8.85	2.09	0.00
12.00	4.42	0.24	0.24	63.00	8.85	2.09	0.00
13.00	6.64	1.00	0.16	64.00	8.85	2.09	0.00
14.00	7.18	1.24	0.11	65.00	8.85	2.09	0.00
15.00	7.56	1.42	0.08	66.00	8.85	2.09	0.00
16.00	7.84	1.56	0.06	67.00	8.85	2.09	0.00
17.00	8.05	1.66	0.05	68.00	8.85	2.09	0.00
18.00	8.21	1.75	0.04	69.00	8.85	2.09	0.00
19.00	8.35	1.82	0.03	70.00	8.85	2.09	0.00
20.00	8.47	1.88	0.03	71.00	8.85	2.09	0.00
21.00	8.58	1.94	0.03	72.00	8.85	2.09	0.00
22.00	8.68	1.99	0.03				
23.00	8.77	2.04	0.02				
24.00	8.85	2.09	0.02				
25.00	8.85	2.09	0.00				
26.00	8.85	2.09	0.00				
27.00	8.85	2.09	0.00				
28.00	8.85	2.09	0.00				
29.00	8.85	2.09	0.00				
30.00	8.85	2.09	0.00				
31.00	8.85	2.09	0.00				
32.00	8.85	2.09	0.00				
33.00	8.85	2.09	0.00				
34.00	8.85	2.09	0.00				
35.00	8.85	2.09	0.00				
36.00	8.85	2.09	0.00				
37.00	8.85	2.09	0.00				
38.00	8.85	2.09	0.00				
39.00	8.85	2.09	0.00				
40.00	8.85	2.09	0.00				
41.00	8.85	2.09	0.00				
42.00	8.85	2.09	0.00				
43.00	8.85	2.09	0.00				
44.00	8.85	2.09	0.00				
45.00	8.85	2.09	0.00				
46.00	8.85	2.09	0.00				
47.00	8.85	2.09	0.00				
48.00	8.85	2.09	0.00				
49.00	8.85	2.09	0.00				
50.00	8.85	2.09	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR D1: Jordan Lot

Runoff = 3.95 cfs @ 12.13 hrs, Volume= 0.323 af, Depth= 5.94"
 Routed to Pond D : Subsurface Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.400	98	Impervious
0.199	32	Woods/grass comb., Good, HSG A
0.054	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.653	76	Weighted Average
0.253		38.74% Pervious Area
0.400		61.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	24	0.0021	0.05		Sheet Flow, Grass: Short n= 0.150 P2= 3.22"
1.6	289	0.0225	3.04		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.3	313	Total			

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR D1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	5.94	0.00
1.00	0.09	0.00	0.00	52.00	8.85	5.94	0.00
2.00	0.18	0.00	0.00	53.00	8.85	5.94	0.00
3.00	0.27	0.00	0.00	54.00	8.85	5.94	0.00
4.00	0.38	0.00	0.00	55.00	8.85	5.94	0.00
5.00	0.50	0.00	0.00	56.00	8.85	5.94	0.00
6.00	0.64	0.00	0.00	57.00	8.85	5.94	0.00
7.00	0.80	0.01	0.01	58.00	8.85	5.94	0.00
8.00	1.01	0.04	0.03	59.00	8.85	5.94	0.00
9.00	1.29	0.11	0.06	60.00	8.85	5.94	0.00
10.00	1.67	0.26	0.12	61.00	8.85	5.94	0.00
11.00	2.21	0.53	0.22	62.00	8.85	5.94	0.00
12.00	4.42	2.07	2.07	63.00	8.85	5.94	0.00
13.00	6.64	3.94	0.44	64.00	8.85	5.94	0.00
14.00	7.18	4.42	0.27	65.00	8.85	5.94	0.00
15.00	7.56	4.76	0.21	66.00	8.85	5.94	0.00
16.00	7.84	5.01	0.15	67.00	8.85	5.94	0.00
17.00	8.05	5.20	0.12	68.00	8.85	5.94	0.00
18.00	8.21	5.35	0.09	69.00	8.85	5.94	0.00
19.00	8.35	5.48	0.08	70.00	8.85	5.94	0.00
20.00	8.47	5.59	0.07	71.00	8.85	5.94	0.00
21.00	8.58	5.69	0.06	72.00	8.85	5.94	0.00
22.00	8.68	5.78	0.06				
23.00	8.77	5.86	0.05				
24.00	8.85	5.94	0.05				
25.00	8.85	5.94	0.00				
26.00	8.85	5.94	0.00				
27.00	8.85	5.94	0.00				
28.00	8.85	5.94	0.00				
29.00	8.85	5.94	0.00				
30.00	8.85	5.94	0.00				
31.00	8.85	5.94	0.00				
32.00	8.85	5.94	0.00				
33.00	8.85	5.94	0.00				
34.00	8.85	5.94	0.00				
35.00	8.85	5.94	0.00				
36.00	8.85	5.94	0.00				
37.00	8.85	5.94	0.00				
38.00	8.85	5.94	0.00				
39.00	8.85	5.94	0.00				
40.00	8.85	5.94	0.00				
41.00	8.85	5.94	0.00				
42.00	8.85	5.94	0.00				
43.00	8.85	5.94	0.00				
44.00	8.85	5.94	0.00				
45.00	8.85	5.94	0.00				
46.00	8.85	5.94	0.00				
47.00	8.85	5.94	0.00				
48.00	8.85	5.94	0.00				
49.00	8.85	5.94	0.00				
50.00	8.85	5.94	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR D2: Front Yard

Runoff = 3.05 cfs @ 12.15 hrs, Volume= 0.252 af, Depth= 5.20"
 Routed to Link PR DR D : Marsh Street CBs

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.123	98	Impervious
0.167	32	Woods/grass comb., Good, HSG A
0.292	79	Woods/grass comb., Good, HSG D
0.000	32	Woods/grass comb., Good, HSG A
0.582	70	Weighted Average
0.459		78.87% Pervious Area
0.123		21.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	48	0.0250	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.22"
0.1	10	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	75	0.0267	1.14		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.4	120	0.0440	1.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.2	328	Total			

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR D2: Front Yard

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	5.20	0.00
1.00	0.09	0.00	0.00	52.00	8.85	5.20	0.00
2.00	0.18	0.00	0.00	53.00	8.85	5.20	0.00
3.00	0.27	0.00	0.00	54.00	8.85	5.20	0.00
4.00	0.38	0.00	0.00	55.00	8.85	5.20	0.00
5.00	0.50	0.00	0.00	56.00	8.85	5.20	0.00
6.00	0.64	0.00	0.00	57.00	8.85	5.20	0.00
7.00	0.80	0.00	0.00	58.00	8.85	5.20	0.00
8.00	1.01	0.01	0.01	59.00	8.85	5.20	0.00
9.00	1.29	0.04	0.03	60.00	8.85	5.20	0.00
10.00	1.67	0.13	0.07	61.00	8.85	5.20	0.00
11.00	2.21	0.33	0.14	62.00	8.85	5.20	0.00
12.00	4.42	1.62	1.48	63.00	8.85	5.20	0.00
13.00	6.64	3.32	0.37	64.00	8.85	5.20	0.00
14.00	7.18	3.77	0.23	65.00	8.85	5.20	0.00
15.00	7.56	4.09	0.17	66.00	8.85	5.20	0.00
16.00	7.84	4.33	0.12	67.00	8.85	5.20	0.00
17.00	8.05	4.51	0.10	68.00	8.85	5.20	0.00
18.00	8.21	4.65	0.08	69.00	8.85	5.20	0.00
19.00	8.35	4.76	0.07	70.00	8.85	5.20	0.00
20.00	8.47	4.87	0.06	71.00	8.85	5.20	0.00
21.00	8.58	4.97	0.05	72.00	8.85	5.20	0.00
22.00	8.68	5.05	0.05				
23.00	8.77	5.13	0.04				
24.00	8.85	5.20	0.04				
25.00	8.85	5.20	0.00				
26.00	8.85	5.20	0.00				
27.00	8.85	5.20	0.00				
28.00	8.85	5.20	0.00				
29.00	8.85	5.20	0.00				
30.00	8.85	5.20	0.00				
31.00	8.85	5.20	0.00				
32.00	8.85	5.20	0.00				
33.00	8.85	5.20	0.00				
34.00	8.85	5.20	0.00				
35.00	8.85	5.20	0.00				
36.00	8.85	5.20	0.00				
37.00	8.85	5.20	0.00				
38.00	8.85	5.20	0.00				
39.00	8.85	5.20	0.00				
40.00	8.85	5.20	0.00				
41.00	8.85	5.20	0.00				
42.00	8.85	5.20	0.00				
43.00	8.85	5.20	0.00				
44.00	8.85	5.20	0.00				
45.00	8.85	5.20	0.00				
46.00	8.85	5.20	0.00				
47.00	8.85	5.20	0.00				
48.00	8.85	5.20	0.00				
49.00	8.85	5.20	0.00				
50.00	8.85	5.20	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR E1: Jordan Lot

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.028 af, Depth= 7.28"
Routed to Pond 2P : WQS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.038	98	Impervious
0.008	32	Woods/grass comb., Good, HSG A
0.046	87	Weighted Average
0.008		17.39% Pervious Area
0.038		82.61% Impervious Area

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

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR E1: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	7.28	0.00
1.00	0.09	0.00	0.00	52.00	8.85	7.28	0.00
2.00	0.18	0.00	0.00	53.00	8.85	7.28	0.00
3.00	0.27	0.00	0.00	54.00	8.85	7.28	0.00
4.00	0.38	0.00	0.00	55.00	8.85	7.28	0.00
5.00	0.50	0.02	0.00	56.00	8.85	7.28	0.00
6.00	0.64	0.06	0.00	57.00	8.85	7.28	0.00
7.00	0.80	0.13	0.00	58.00	8.85	7.28	0.00
8.00	1.01	0.23	0.01	59.00	8.85	7.28	0.00
9.00	1.29	0.40	0.01	60.00	8.85	7.28	0.00
10.00	1.67	0.66	0.01	61.00	8.85	7.28	0.00
11.00	2.21	1.07	0.02	62.00	8.85	7.28	0.00
12.00	4.42	3.03	0.23	63.00	8.85	7.28	0.00
13.00	6.64	5.13	0.03	64.00	8.85	7.28	0.00
14.00	7.18	5.65	0.02	65.00	8.85	7.28	0.00
15.00	7.56	6.02	0.02	66.00	8.85	7.28	0.00
16.00	7.84	6.30	0.01	67.00	8.85	7.28	0.00
17.00	8.05	6.50	0.01	68.00	8.85	7.28	0.00
18.00	8.21	6.66	0.01	69.00	8.85	7.28	0.00
19.00	8.35	6.79	0.01	70.00	8.85	7.28	0.00
20.00	8.47	6.91	0.01	71.00	8.85	7.28	0.00
21.00	8.58	7.01	0.00	72.00	8.85	7.28	0.00
22.00	8.68	7.11	0.00				
23.00	8.77	7.20	0.00				
24.00	8.85	7.28	0.00				
25.00	8.85	7.28	0.00				
26.00	8.85	7.28	0.00				
27.00	8.85	7.28	0.00				
28.00	8.85	7.28	0.00				
29.00	8.85	7.28	0.00				
30.00	8.85	7.28	0.00				
31.00	8.85	7.28	0.00				
32.00	8.85	7.28	0.00				
33.00	8.85	7.28	0.00				
34.00	8.85	7.28	0.00				
35.00	8.85	7.28	0.00				
36.00	8.85	7.28	0.00				
37.00	8.85	7.28	0.00				
38.00	8.85	7.28	0.00				
39.00	8.85	7.28	0.00				
40.00	8.85	7.28	0.00				
41.00	8.85	7.28	0.00				
42.00	8.85	7.28	0.00				
43.00	8.85	7.28	0.00				
44.00	8.85	7.28	0.00				
45.00	8.85	7.28	0.00				
46.00	8.85	7.28	0.00				
47.00	8.85	7.28	0.00				
48.00	8.85	7.28	0.00				
49.00	8.85	7.28	0.00				
50.00	8.85	7.28	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR E2: Jordan Lot

Runoff = 1.09 cfs @ 12.16 hrs, Volume= 0.094 af, Depth= 5.69"
 Routed to Link PR DP E : EX BMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.128	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.000	79	Woods/grass comb., Good, HSG D
0.071	32	Woods/grass comb., Good, HSG A
0.199	74	Weighted Average
0.071		35.68% Pervious Area
0.128		64.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	55	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.22"
0.3	45	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0					Direct Entry,
11.8	100	Total			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR E2: Jordan Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	5.69	0.00
1.00	0.09	0.00	0.00	52.00	8.85	5.69	0.00
2.00	0.18	0.00	0.00	53.00	8.85	5.69	0.00
3.00	0.27	0.00	0.00	54.00	8.85	5.69	0.00
4.00	0.38	0.00	0.00	55.00	8.85	5.69	0.00
5.00	0.50	0.00	0.00	56.00	8.85	5.69	0.00
6.00	0.64	0.00	0.00	57.00	8.85	5.69	0.00
7.00	0.80	0.00	0.00	58.00	8.85	5.69	0.00
8.00	1.01	0.02	0.01	59.00	8.85	5.69	0.00
9.00	1.29	0.08	0.02	60.00	8.85	5.69	0.00
10.00	1.67	0.21	0.03	61.00	8.85	5.69	0.00
11.00	2.21	0.45	0.06	62.00	8.85	5.69	0.00
12.00	4.42	1.91	0.52	63.00	8.85	5.69	0.00
13.00	6.64	3.73	0.14	64.00	8.85	5.69	0.00
14.00	7.18	4.20	0.08	65.00	8.85	5.69	0.00
15.00	7.56	4.53	0.06	66.00	8.85	5.69	0.00
16.00	7.84	4.78	0.04	67.00	8.85	5.69	0.00
17.00	8.05	4.97	0.03	68.00	8.85	5.69	0.00
18.00	8.21	5.12	0.03	69.00	8.85	5.69	0.00
19.00	8.35	5.24	0.02	70.00	8.85	5.69	0.00
20.00	8.47	5.35	0.02	71.00	8.85	5.69	0.00
21.00	8.58	5.45	0.02	72.00	8.85	5.69	0.00
22.00	8.68	5.54	0.02				
23.00	8.77	5.62	0.02				
24.00	8.85	5.69	0.01				
25.00	8.85	5.69	0.00				
26.00	8.85	5.69	0.00				
27.00	8.85	5.69	0.00				
28.00	8.85	5.69	0.00				
29.00	8.85	5.69	0.00				
30.00	8.85	5.69	0.00				
31.00	8.85	5.69	0.00				
32.00	8.85	5.69	0.00				
33.00	8.85	5.69	0.00				
34.00	8.85	5.69	0.00				
35.00	8.85	5.69	0.00				
36.00	8.85	5.69	0.00				
37.00	8.85	5.69	0.00				
38.00	8.85	5.69	0.00				
39.00	8.85	5.69	0.00				
40.00	8.85	5.69	0.00				
41.00	8.85	5.69	0.00				
42.00	8.85	5.69	0.00				
43.00	8.85	5.69	0.00				
44.00	8.85	5.69	0.00				
45.00	8.85	5.69	0.00				
46.00	8.85	5.69	0.00				
47.00	8.85	5.69	0.00				
48.00	8.85	5.69	0.00				
49.00	8.85	5.69	0.00				
50.00	8.85	5.69	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Subcatchment PR F: Upper Lot

Runoff = 4.32 cfs @ 12.09 hrs, Volume= 0.328 af, Depth= 7.04"
 Routed to Link PR DP F : PR Main Campus

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Area (ac)	CN	Description
* 0.356	98	Impervious
0.000	32	Woods/grass comb., Good, HSG A
0.135	79	Woods/grass comb., Good, HSG D
0.069	32	Woods/grass comb., Good, HSG A
0.560	85	Weighted Average
0.204		36.43% Pervious Area
0.356		63.57% Impervious Area

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

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Subcatchment PR F: Upper Lot

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	51.00	8.85	7.04	0.00
1.00	0.09	0.00	0.00	52.00	8.85	7.04	0.00
2.00	0.18	0.00	0.00	53.00	8.85	7.04	0.00
3.00	0.27	0.00	0.00	54.00	8.85	7.04	0.00
4.00	0.38	0.00	0.00	55.00	8.85	7.04	0.00
5.00	0.50	0.01	0.01	56.00	8.85	7.04	0.00
6.00	0.64	0.04	0.02	57.00	8.85	7.04	0.00
7.00	0.80	0.09	0.04	58.00	8.85	7.04	0.00
8.00	1.01	0.18	0.06	59.00	8.85	7.04	0.00
9.00	1.29	0.32	0.10	60.00	8.85	7.04	0.00
10.00	1.67	0.56	0.16	61.00	8.85	7.04	0.00
11.00	2.21	0.95	0.27	62.00	8.85	7.04	0.00
12.00	4.42	2.84	2.75	63.00	8.85	7.04	0.00
13.00	6.64	4.91	0.39	64.00	8.85	7.04	0.00
14.00	7.18	5.42	0.25	65.00	8.85	7.04	0.00
15.00	7.56	5.79	0.19	66.00	8.85	7.04	0.00
16.00	7.84	6.06	0.13	67.00	8.85	7.04	0.00
17.00	8.05	6.26	0.10	68.00	8.85	7.04	0.00
18.00	8.21	6.42	0.08	69.00	8.85	7.04	0.00
19.00	8.35	6.55	0.07	70.00	8.85	7.04	0.00
20.00	8.47	6.67	0.06	71.00	8.85	7.04	0.00
21.00	8.58	6.77	0.06	72.00	8.85	7.04	0.00
22.00	8.68	6.87	0.05				
23.00	8.77	6.96	0.05				
24.00	8.85	7.04	0.04				
25.00	8.85	7.04	0.00				
26.00	8.85	7.04	0.00				
27.00	8.85	7.04	0.00				
28.00	8.85	7.04	0.00				
29.00	8.85	7.04	0.00				
30.00	8.85	7.04	0.00				
31.00	8.85	7.04	0.00				
32.00	8.85	7.04	0.00				
33.00	8.85	7.04	0.00				
34.00	8.85	7.04	0.00				
35.00	8.85	7.04	0.00				
36.00	8.85	7.04	0.00				
37.00	8.85	7.04	0.00				
38.00	8.85	7.04	0.00				
39.00	8.85	7.04	0.00				
40.00	8.85	7.04	0.00				
41.00	8.85	7.04	0.00				
42.00	8.85	7.04	0.00				
43.00	8.85	7.04	0.00				
44.00	8.85	7.04	0.00				
45.00	8.85	7.04	0.00				
46.00	8.85	7.04	0.00				
47.00	8.85	7.04	0.00				
48.00	8.85	7.04	0.00				
49.00	8.85	7.04	0.00				
50.00	8.85	7.04	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Pond 2P: WQS

Inflow Area = 0.046 ac, 82.61% Impervious, Inflow Depth = 7.28" for 100-yr 24-hr event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.028 af
Outflow = 0.36 cfs @ 12.09 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.36 cfs @ 12.09 hrs, Volume= 0.028 af
Routed to Link PR DP E : EX BMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 249.30' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.35 cfs @ 12.09 hrs HW=249.29' TW=0.00' (Dynamic Tailwater)
↑1=Orifice/Grate (Orifice Controls 0.35 cfs @ 1.84 fps)

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Pond 2P: WQS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	249.00	0.00	51.00	0.00	249.00	0.00
1.00	0.00	249.00	0.00	52.00	0.00	249.00	0.00
2.00	0.00	249.00	0.00	53.00	0.00	249.00	0.00
3.00	0.00	249.00	0.00	54.00	0.00	249.00	0.00
4.00	0.00	249.01	0.00	55.00	0.00	249.00	0.00
5.00	0.00	249.02	0.00	56.00	0.00	249.00	0.00
6.00	0.00	249.02	0.00	57.00	0.00	249.00	0.00
7.00	0.00	249.03	0.00	58.00	0.00	249.00	0.00
8.00	0.01	249.04	0.01	59.00	0.00	249.00	0.00
9.00	0.01	249.05	0.01	60.00	0.00	249.00	0.00
10.00	0.01	249.06	0.01	61.00	0.00	249.00	0.00
11.00	0.02	249.07	0.02	62.00	0.00	249.00	0.00
12.00	0.23	249.23	0.23	63.00	0.00	249.00	0.00
13.00	0.03	249.09	0.03	64.00	0.00	249.00	0.00
14.00	0.02	249.07	0.02	65.00	0.00	249.00	0.00
15.00	0.02	249.06	0.02	66.00	0.00	249.00	0.00
16.00	0.01	249.05	0.01	67.00	0.00	249.00	0.00
17.00	0.01	249.04	0.01	68.00	0.00	249.00	0.00
18.00	0.01	249.04	0.01	69.00	0.00	249.00	0.00
19.00	0.01	249.04	0.01	70.00	0.00	249.00	0.00
20.00	0.01	249.03	0.01	71.00	0.00	249.00	0.00
21.00	0.00	249.03	0.00	72.00	0.00	249.00	0.00
22.00	0.00	249.03	0.00				
23.00	0.00	249.03	0.00				
24.00	0.00	249.03	0.00				
25.00	0.00	249.00	0.00				
26.00	0.00	249.00	0.00				
27.00	0.00	249.00	0.00				
28.00	0.00	249.00	0.00				
29.00	0.00	249.00	0.00				
30.00	0.00	249.00	0.00				
31.00	0.00	249.00	0.00				
32.00	0.00	249.00	0.00				
33.00	0.00	249.00	0.00				
34.00	0.00	249.00	0.00				
35.00	0.00	249.00	0.00				
36.00	0.00	249.00	0.00				
37.00	0.00	249.00	0.00				
38.00	0.00	249.00	0.00				
39.00	0.00	249.00	0.00				
40.00	0.00	249.00	0.00				
41.00	0.00	249.00	0.00				
42.00	0.00	249.00	0.00				
43.00	0.00	249.00	0.00				
44.00	0.00	249.00	0.00				
45.00	0.00	249.00	0.00				
46.00	0.00	249.00	0.00				
47.00	0.00	249.00	0.00				
48.00	0.00	249.00	0.00				
49.00	0.00	249.00	0.00				
50.00	0.00	249.00	0.00				

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Stage-Area-Storage for Pond 2P: WQS

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
249.00	0.000	249.51	0.000
249.01	0.000	249.52	0.000
249.02	0.000	249.53	0.000
249.03	0.000	249.54	0.000
249.04	0.000	249.55	0.000
249.05	0.000	249.56	0.000
249.06	0.000	249.57	0.000
249.07	0.000	249.58	0.000
249.08	0.000	249.59	0.000
249.09	0.000	249.60	0.000
249.10	0.000	249.61	0.000
249.11	0.000	249.62	0.000
249.12	0.000	249.63	0.000
249.13	0.000	249.64	0.000
249.14	0.000	249.65	0.000
249.15	0.000	249.66	0.000
249.16	0.000	249.67	0.000
249.17	0.000	249.68	0.000
249.18	0.000	249.69	0.000
249.19	0.000	249.70	0.000
249.20	0.000	249.71	0.000
249.21	0.000	249.72	0.000
249.22	0.000	249.73	0.000
249.23	0.000	249.74	0.000
249.24	0.000	249.75	0.000
249.25	0.000	249.76	0.000
249.26	0.000	249.77	0.000
249.27	0.000	249.78	0.000
249.28	0.000	249.79	0.000
249.29	0.000	249.80	0.000
249.30	0.000	249.81	0.000
249.31	0.000	249.82	0.000
249.32	0.000	249.83	0.000
249.33	0.000	249.84	0.000
249.34	0.000	249.85	0.000
249.35	0.000	249.86	0.000
249.36	0.000	249.87	0.000
249.37	0.000	249.88	0.000
249.38	0.000	249.89	0.000
249.39	0.000	249.90	0.000
249.40	0.000	249.91	0.000
249.41	0.000	249.92	0.000
249.42	0.000	249.93	0.000
249.43	0.000	249.94	0.000
249.44	0.000	249.95	0.000
249.45	0.000	249.96	0.000
249.46	0.000	249.97	0.000
249.47	0.000	249.98	0.000
249.48	0.000	249.99	0.000
249.49	0.000	250.00	0.000
249.50	0.000		

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
 Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Pond A1: Porous Pave

Inflow Area = 0.225 ac, 100.00% Impervious, Inflow Depth = 8.61" for 100-yr 24-hr event
 Inflow = 1.91 cfs @ 12.09 hrs, Volume= 0.161 af
 Outflow = 0.19 cfs @ 12.86 hrs, Volume= 0.162 af, Atten= 90%, Lag= 46.5 min
 Discarded = 0.19 cfs @ 12.86 hrs, Volume= 0.162 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link PR DP A : PR Park Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 0.84' @ 12.86 hrs Surf.Area= 9,800 sf Storage= 2,460 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 96.6 min (836.6 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5,880 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 19,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	9,800	0	0
2.00	9,800	19,600	19,600

Device	Routing	Invert	Outlet Devices
#0	Primary	2.00'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.588 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.19 cfs @ 12.86 hrs HW=0.84' (Free Discharge)
 ↑1=Exfiltration (Controls 0.19 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=0.00' (Dynamic Tailwater)

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Pond A1: Porous Pave

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	0.00	0.00	0.00	0.00
2.50	0.02	0	0.00	0.02	0.02	0.00
5.00	0.03	0	0.00	0.03	0.03	0.00
7.50	0.04	0	0.00	0.04	0.04	0.00
10.00	0.10	0	0.00	0.10	0.10	0.00
12.50	0.40	2,384	0.81	0.19	0.19	0.00
15.00	0.08	1,910	0.65	0.18	0.18	0.00
17.50	0.04	904	0.31	0.15	0.15	0.00
20.00	0.03	0	0.00	0.00	0.00	0.00
22.50	0.02	0	0.00	0.00	0.00	0.00
25.00	0.00	0	0.00	0.00	0.00	0.00
27.50	0.00	0	0.00	0.00	0.00	0.00
30.00	0.00	0	0.00	0.00	0.00	0.00
32.50	0.00	0	0.00	0.00	0.00	0.00
35.00	0.00	0	0.00	0.00	0.00	0.00
37.50	0.00	0	0.00	0.00	0.00	0.00
40.00	0.00	0	0.00	0.00	0.00	0.00
42.50	0.00	0	0.00	0.00	0.00	0.00
45.00	0.00	0	0.00	0.00	0.00	0.00
47.50	0.00	0	0.00	0.00	0.00	0.00
50.00	0.00	0	0.00	0.00	0.00	0.00
52.50	0.00	0	0.00	0.00	0.00	0.00
55.00	0.00	0	0.00	0.00	0.00	0.00
57.50	0.00	0	0.00	0.00	0.00	0.00
60.00	0.00	0	0.00	0.00	0.00	0.00
62.50	0.00	0	0.00	0.00	0.00	0.00
65.00	0.00	0	0.00	0.00	0.00	0.00
67.50	0.00	0	0.00	0.00	0.00	0.00
70.00	0.00	0	0.00	0.00	0.00	0.00
72.50	0.00	0	0.00	0.00	0.00	0.00

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Stage-Area-Storage for Pond A1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	9,800	0	1.02	9,800	2,999
0.02	9,800	59	1.04	9,800	3,058
0.04	9,800	118	1.06	9,800	3,116
0.06	9,800	176	1.08	9,800	3,175
0.08	9,800	235	1.10	9,800	3,234
0.10	9,800	294	1.12	9,800	3,293
0.12	9,800	353	1.14	9,800	3,352
0.14	9,800	412	1.16	9,800	3,410
0.16	9,800	470	1.18	9,800	3,469
0.18	9,800	529	1.20	9,800	3,528
0.20	9,800	588	1.22	9,800	3,587
0.22	9,800	647	1.24	9,800	3,646
0.24	9,800	706	1.26	9,800	3,704
0.26	9,800	764	1.28	9,800	3,763
0.28	9,800	823	1.30	9,800	3,822
0.30	9,800	882	1.32	9,800	3,881
0.32	9,800	941	1.34	9,800	3,940
0.34	9,800	1,000	1.36	9,800	3,998
0.36	9,800	1,058	1.38	9,800	4,057
0.38	9,800	1,117	1.40	9,800	4,116
0.40	9,800	1,176	1.42	9,800	4,175
0.42	9,800	1,235	1.44	9,800	4,234
0.44	9,800	1,294	1.46	9,800	4,292
0.46	9,800	1,352	1.48	9,800	4,351
0.48	9,800	1,411	1.50	9,800	4,410
0.50	9,800	1,470	1.52	9,800	4,469
0.52	9,800	1,529	1.54	9,800	4,528
0.54	9,800	1,588	1.56	9,800	4,586
0.56	9,800	1,646	1.58	9,800	4,645
0.58	9,800	1,705	1.60	9,800	4,704
0.60	9,800	1,764	1.62	9,800	4,763
0.62	9,800	1,823	1.64	9,800	4,822
0.64	9,800	1,882	1.66	9,800	4,880
0.66	9,800	1,940	1.68	9,800	4,939
0.68	9,800	1,999	1.70	9,800	4,998
0.70	9,800	2,058	1.72	9,800	5,057
0.72	9,800	2,117	1.74	9,800	5,116
0.74	9,800	2,176	1.76	9,800	5,174
0.76	9,800	2,234	1.78	9,800	5,233
0.78	9,800	2,293	1.80	9,800	5,292
0.80	9,800	2,352	1.82	9,800	5,351
0.82	9,800	2,411	1.84	9,800	5,410
0.84	9,800	2,470	1.86	9,800	5,468
0.86	9,800	2,528	1.88	9,800	5,527
0.88	9,800	2,587	1.90	9,800	5,586
0.90	9,800	2,646	1.92	9,800	5,645
0.92	9,800	2,705	1.94	9,800	5,704
0.94	9,800	2,764	1.96	9,800	5,762
0.96	9,800	2,822	1.98	9,800	5,821
0.98	9,800	2,881	2.00	9,800	5,880
1.00	9,800	2,940			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Pond B1: Porous Pave

Inflow Area = 1.238 ac, 71.16% Impervious, Inflow Depth = 7.40" for 100-yr 24-hr event
Inflow = 9.88 cfs @ 12.09 hrs, Volume= 0.764 af
Outflow = 0.58 cfs @ 13.89 hrs, Volume= 0.764 af, Atten= 94%, Lag= 108.3 min
Discarded = 0.58 cfs @ 13.89 hrs, Volume= 0.764 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
Peak Elev= 1.47' @ 13.89 hrs Surf.Area= 36,800 sf Storage= 16,215 cf

Plug-Flow detention time= 283.5 min calculated for 0.763 af (100% of inflow)
Center-of-Mass det. time= 283.5 min (1,062.5 - 779.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	22,080 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 73,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	36,800	0	0
2.00	36,800	73,600	73,600

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.391 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.58 cfs @ 13.89 hrs HW=1.47' (Free Discharge)
↑1=Exfiltration - TP8 (Controls 0.58 cfs)

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"Prepared by Langan Engineering and Environmental Services
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Page 202**Hydrograph for Pond B1: Porous Pave**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.04	0	0.00	0.04
7.50	0.13	0	0.00	0.13
10.00	0.40	56	0.01	0.33
12.50	2.14	14,668	1.33	0.55
15.00	0.42	15,857	1.44	0.57
17.50	0.20	13,452	1.22	0.54
20.00	0.14	10,325	0.94	0.49
22.50	0.11	7,274	0.66	0.44
25.00	0.00	4,080	0.37	0.39
27.50	0.00	759	0.07	0.34
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Stage-Area-Storage for Pond B1: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	36,800	0	1.02	36,800	11,261
0.02	36,800	221	1.04	36,800	11,482
0.04	36,800	442	1.06	36,800	11,702
0.06	36,800	662	1.08	36,800	11,923
0.08	36,800	883	1.10	36,800	12,144
0.10	36,800	1,104	1.12	36,800	12,365
0.12	36,800	1,325	1.14	36,800	12,586
0.14	36,800	1,546	1.16	36,800	12,806
0.16	36,800	1,766	1.18	36,800	13,027
0.18	36,800	1,987	1.20	36,800	13,248
0.20	36,800	2,208	1.22	36,800	13,469
0.22	36,800	2,429	1.24	36,800	13,690
0.24	36,800	2,650	1.26	36,800	13,910
0.26	36,800	2,870	1.28	36,800	14,131
0.28	36,800	3,091	1.30	36,800	14,352
0.30	36,800	3,312	1.32	36,800	14,573
0.32	36,800	3,533	1.34	36,800	14,794
0.34	36,800	3,754	1.36	36,800	15,014
0.36	36,800	3,974	1.38	36,800	15,235
0.38	36,800	4,195	1.40	36,800	15,456
0.40	36,800	4,416	1.42	36,800	15,677
0.42	36,800	4,637	1.44	36,800	15,898
0.44	36,800	4,858	1.46	36,800	16,118
0.46	36,800	5,078	1.48	36,800	16,339
0.48	36,800	5,299	1.50	36,800	16,560
0.50	36,800	5,520	1.52	36,800	16,781
0.52	36,800	5,741	1.54	36,800	17,002
0.54	36,800	5,962	1.56	36,800	17,222
0.56	36,800	6,182	1.58	36,800	17,443
0.58	36,800	6,403	1.60	36,800	17,664
0.60	36,800	6,624	1.62	36,800	17,885
0.62	36,800	6,845	1.64	36,800	18,106
0.64	36,800	7,066	1.66	36,800	18,326
0.66	36,800	7,286	1.68	36,800	18,547
0.68	36,800	7,507	1.70	36,800	18,768
0.70	36,800	7,728	1.72	36,800	18,989
0.72	36,800	7,949	1.74	36,800	19,210
0.74	36,800	8,170	1.76	36,800	19,430
0.76	36,800	8,390	1.78	36,800	19,651
0.78	36,800	8,611	1.80	36,800	19,872
0.80	36,800	8,832	1.82	36,800	20,093
0.82	36,800	9,053	1.84	36,800	20,314
0.84	36,800	9,274	1.86	36,800	20,534
0.86	36,800	9,494	1.88	36,800	20,755
0.88	36,800	9,715	1.90	36,800	20,976
0.90	36,800	9,936	1.92	36,800	21,197
0.92	36,800	10,157	1.94	36,800	21,418
0.94	36,800	10,378	1.96	36,800	21,638
0.96	36,800	10,598	1.98	36,800	21,859
0.98	36,800	10,819	2.00	36,800	22,080
1.00	36,800	11,040			

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Pond B3: Subsurface Chambers

Inflow Area = 0.476 ac, 100.00% Impervious, Inflow Depth = 8.61" for 100-yr 24-hr event
 Inflow = 4.04 cfs @ 12.09 hrs, Volume= 0.342 af
 Outflow = 3.44 cfs @ 12.14 hrs, Volume= 0.342 af, Atten= 15%, Lag= 3.4 min
 Discarded = 0.08 cfs @ 12.14 hrs, Volume= 0.167 af
 Primary = 3.36 cfs @ 12.14 hrs, Volume= 0.175 af
 Routed to Link PR DP B : PR Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 260.18' @ 12.14 hrs Surf.Area= 2,445 sf Storage= 4,192 cf

Plug-Flow detention time= 216.7 min calculated for 0.341 af (100% of inflow)
 Center-of-Mass det. time= 217.1 min (957.1 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	258.00'	1,672 cf	32.87"W x 74.37"L x 3.56"H Field A 8,714 cf Overall - 4,533 cf Embedded = 4,181 cf x 40.0% Voids
#2A	258.33'	4,306 cf	ACF R-Tank SD 3 x 660 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 660 Chambers in 22 Rows
		5,979 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	259.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 0.50 0.50 1.50 Width (feet) 1.50 1.50 4.00 4.00
#2	Discarded	258.00'	0.800 in/hr Exfiltration - TP3 over Surface area Conductivity to Groundwater Elevation = 255.00'
#3	Primary	257.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.08 cfs @ 12.14 hrs HW=260.17' (Free Discharge)
 ↑2=Exfiltration - TP3 (Controls 0.08 cfs)

Primary OutFlow Max=3.32 cfs @ 12.14 hrs HW=260.17' TW=0.00' (Dynamic Tailwater)
 ↑3=Orifice/Grate (Passes 3.32 cfs of 5.18 cfs potential flow)
 ↑1=Custom Weir/Orifice (Weir Controls 3.32 cfs @ 2.29 fps)

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Pond B3: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

30 Chambers/Row x 2.35' Long = 70.37' Row Length +24.0" End Stone x 2 = 74.37' Base Length

22 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 32.87' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

660 Chambers x 6.5 cf = 4,306.2 cf Chamber Storage

660 Chambers x 6.9 cf = 4,532.9 cf Displacement

8,713.9 cf Field - 4,532.9 cf Chambers = 4,181.1 cf Stone x 40.0% Voids = 1,672.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,978.7 cf = 0.137 af

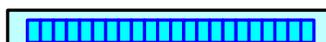
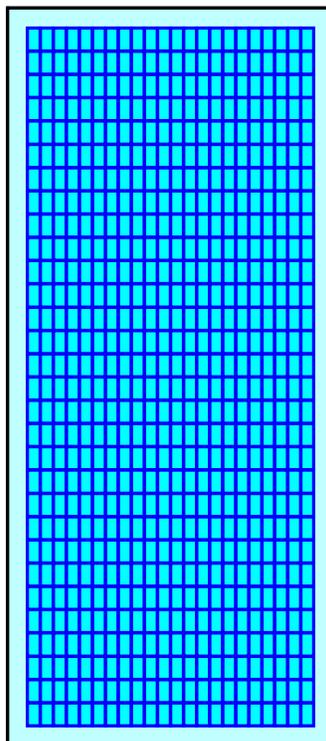
Overall Storage Efficiency = 68.6%

Overall System Size = 74.37' x 32.87' x 3.56'

660 Chambers

322.7 cy Field

154.9 cy Stone



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Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Pond B3: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	258.00	0.00	0.00	0.00
2.50	0.03	0	258.00	0.03	0.03	0.00
5.00	0.06	21	258.02	0.05	0.05	0.00
7.50	0.09	232	258.24	0.05	0.05	0.00
10.00	0.20	1,037	258.67	0.06	0.06	0.00
12.50	0.85	3,595	259.89	1.29	0.07	1.21
15.00	0.16	2,935	259.58	0.18	0.07	0.11
17.50	0.08	2,827	259.53	0.09	0.07	0.02
20.00	0.06	2,746	259.49	0.07	0.07	0.00
22.50	0.04	2,588	259.41	0.07	0.07	0.00
25.00	0.00	2,227	259.24	0.06	0.06	0.00
27.50	0.00	1,669	258.97	0.06	0.06	0.00
30.00	0.00	1,146	258.72	0.06	0.06	0.00
32.50	0.00	657	258.49	0.05	0.05	0.00
35.00	0.00	199	258.20	0.05	0.05	0.00
37.50	0.00	0	258.00	0.00	0.00	0.00
40.00	0.00	0	258.00	0.00	0.00	0.00
42.50	0.00	0	258.00	0.00	0.00	0.00
45.00	0.00	0	258.00	0.00	0.00	0.00
47.50	0.00	0	258.00	0.00	0.00	0.00
50.00	0.00	0	258.00	0.00	0.00	0.00
52.50	0.00	0	258.00	0.00	0.00	0.00
55.00	0.00	0	258.00	0.00	0.00	0.00
57.50	0.00	0	258.00	0.00	0.00	0.00
60.00	0.00	0	258.00	0.00	0.00	0.00
62.50	0.00	0	258.00	0.00	0.00	0.00
65.00	0.00	0	258.00	0.00	0.00	0.00
67.50	0.00	0	258.00	0.00	0.00	0.00
70.00	0.00	0	258.00	0.00	0.00	0.00
72.50	0.00	0	258.00	0.00	0.00	0.00

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Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Stage-Area-Storage for Pond B3: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.00	2,445	0	260.55	2,445	4,971
258.05	2,445	49	260.60	2,445	5,036
258.10	2,445	98	260.65	2,445	5,085
258.15	2,445	147	260.70	2,445	5,133
258.20	2,445	196	260.75	2,445	5,182
258.25	2,445	244	260.80	2,445	5,231
258.30	2,445	293	260.85	2,445	5,280
258.35	2,445	361	260.90	2,445	5,329
258.40	2,445	466	260.95	2,445	5,378
258.45	2,445	570	261.00	2,445	5,427
258.50	2,445	675	261.05	2,445	5,476
258.55	2,445	780	261.10	2,445	5,525
258.60	2,445	885	261.15	2,445	5,574
258.65	2,445	990	261.20	2,445	5,622
258.70	2,445	1,094	261.25	2,445	5,671
258.75	2,445	1,199	261.30	2,445	5,720
258.80	2,445	1,304	261.35	2,445	5,769
258.85	2,445	1,409	261.40	2,445	5,818
258.90	2,445	1,513	261.45	2,445	5,867
258.95	2,445	1,618	261.50	2,445	5,916
259.00	2,445	1,723	261.55	2,445	5,965
259.05	2,445	1,828			
259.10	2,445	1,932			
259.15	2,445	2,037			
259.20	2,445	2,142			
259.25	2,445	2,247			
259.30	2,445	2,352			
259.35	2,445	2,456			
259.40	2,445	2,561			
259.45	2,445	2,666			
259.50	2,445	2,771			
259.55	2,445	2,875			
259.60	2,445	2,980			
259.65	2,445	3,085			
259.70	2,445	3,190			
259.75	2,445	3,294			
259.80	2,445	3,399			
259.85	2,445	3,504			
259.90	2,445	3,609			
259.95	2,445	3,714			
260.00	2,445	3,818			
260.05	2,445	3,923			
260.10	2,445	4,028			
260.15	2,445	4,133			
260.20	2,445	4,237			
260.25	2,445	4,342			
260.30	2,445	4,447			
260.35	2,445	4,552			
260.40	2,445	4,656			
260.45	2,445	4,761			
260.50	2,445	4,866			

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Pond B4: Porous Pave

Inflow Area = 0.143 ac, 0.00% Impervious, Inflow Depth = 5.20" for 100-yr 24-hr event
 Inflow = 0.85 cfs @ 12.09 hrs, Volume= 0.062 af
 Outflow = 0.14 cfs @ 12.59 hrs, Volume= 0.062 af, Atten= 84%, Lag= 30.0 min
 Discarded = 0.14 cfs @ 12.59 hrs, Volume= 0.062 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 0.44' @ 12.59 hrs Surf.Area= 6,200 sf Storage= 816 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 41.3 min (861.7 - 820.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,720 cf	Gravel Reservoir (Prismatic) Listed below (Recalc) 12,400 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	6,200	0	0
2.00	6,200	12,400	12,400

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	0.800 in/hr Exfiltration - TP8 over Surface area Conductivity to Groundwater Elevation = -2.00'

Discarded OutFlow Max=0.14 cfs @ 12.59 hrs HW=0.44' (Free Discharge)
 ↑1=Exfiltration - TP8 (Controls 0.14 cfs)

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Type III 24-hr 100-yr 24-hr Rainfall=8.85"Prepared by Langan Engineering and Environmental Services
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Page 209**Hydrograph for Pond B4: Porous Pave**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.00	0	0.00	0.00
10.00	0.02	0	0.00	0.02
12.50	0.20	807	0.43	0.14
15.00	0.04	238	0.13	0.12
17.50	0.02	0	0.00	0.04
20.00	0.01	0	0.00	0.03
22.50	0.01	0	0.00	0.02
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00
72.50	0.00	0	0.00	0.00

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Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Stage-Area-Storage for Pond B4: Porous Pave

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
0.00	6,200	0	1.02	6,200	1,897
0.02	6,200	37	1.04	6,200	1,934
0.04	6,200	74	1.06	6,200	1,972
0.06	6,200	112	1.08	6,200	2,009
0.08	6,200	149	1.10	6,200	2,046
0.10	6,200	186	1.12	6,200	2,083
0.12	6,200	223	1.14	6,200	2,120
0.14	6,200	260	1.16	6,200	2,158
0.16	6,200	298	1.18	6,200	2,195
0.18	6,200	335	1.20	6,200	2,232
0.20	6,200	372	1.22	6,200	2,269
0.22	6,200	409	1.24	6,200	2,306
0.24	6,200	446	1.26	6,200	2,344
0.26	6,200	484	1.28	6,200	2,381
0.28	6,200	521	1.30	6,200	2,418
0.30	6,200	558	1.32	6,200	2,455
0.32	6,200	595	1.34	6,200	2,492
0.34	6,200	632	1.36	6,200	2,530
0.36	6,200	670	1.38	6,200	2,567
0.38	6,200	707	1.40	6,200	2,604
0.40	6,200	744	1.42	6,200	2,641
0.42	6,200	781	1.44	6,200	2,678
0.44	6,200	818	1.46	6,200	2,716
0.46	6,200	856	1.48	6,200	2,753
0.48	6,200	893	1.50	6,200	2,790
0.50	6,200	930	1.52	6,200	2,827
0.52	6,200	967	1.54	6,200	2,864
0.54	6,200	1,004	1.56	6,200	2,902
0.56	6,200	1,042	1.58	6,200	2,939
0.58	6,200	1,079	1.60	6,200	2,976
0.60	6,200	1,116	1.62	6,200	3,013
0.62	6,200	1,153	1.64	6,200	3,050
0.64	6,200	1,190	1.66	6,200	3,088
0.66	6,200	1,228	1.68	6,200	3,125
0.68	6,200	1,265	1.70	6,200	3,162
0.70	6,200	1,302	1.72	6,200	3,199
0.72	6,200	1,339	1.74	6,200	3,236
0.74	6,200	1,376	1.76	6,200	3,274
0.76	6,200	1,414	1.78	6,200	3,311
0.78	6,200	1,451	1.80	6,200	3,348
0.80	6,200	1,488	1.82	6,200	3,385
0.82	6,200	1,525	1.84	6,200	3,422
0.84	6,200	1,562	1.86	6,200	3,460
0.86	6,200	1,600	1.88	6,200	3,497
0.88	6,200	1,637	1.90	6,200	3,534
0.90	6,200	1,674	1.92	6,200	3,571
0.92	6,200	1,711	1.94	6,200	3,608
0.94	6,200	1,748	1.96	6,200	3,646
0.96	6,200	1,786	1.98	6,200	3,683
0.98	6,200	1,823	2.00	6,200	3,720
1.00	6,200	1,860			

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Pond D: Subsurface Chambers

Inflow Area = 0.653 ac, 61.26% Impervious, Inflow Depth = 5.94" for 100-yr 24-hr event
 Inflow = 3.95 cfs @ 12.13 hrs, Volume= 0.323 af
 Outflow = 2.69 cfs @ 12.27 hrs, Volume= 0.323 af, Atten= 32%, Lag= 8.1 min
 Discarded = 0.07 cfs @ 12.27 hrs, Volume= 0.173 af
 Primary = 2.63 cfs @ 12.27 hrs, Volume= 0.150 af
 Routed to Link PR DR D : Marsh Street CBs

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs
 Peak Elev= 253.84' @ 12.27 hrs Surf.Area= 2,533 sf Storage= 4,688 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 355.6 min (1,166.6 - 811.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	251.50'	1,744 cf	30.25"W x 83.76"L x 3.56"H Field A 9,030 cf Overall - 4,670 cf Embedded = 4,360 cf x 40.0% Voids
#2A	251.83'	4,437 cf	ACF R-Tank SD 3 x 680 Inside #1 Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf 680 Chambers in 20 Rows
		6,181 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	253.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 1.00 2.00 Width (feet) 4.00 4.00 4.00 4.00
#2	Discarded	251.50'	0.940 in/hr Exfiltration - TP-207 over Surface area Conductivity to Groundwater Elevation = 240.00'
#3	Primary	249.15'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 12.27 hrs HW=253.84' (Free Discharge)

↑**2=Exfiltration - TP-207** (Controls 0.07 cfs)

Primary OutFlow Max=2.55 cfs @ 12.27 hrs HW=253.84' TW=0.00' (Dynamic Tailwater)

↑**3=Orifice/Grate** (Passes 2.55 cfs of 7.74 cfs potential flow)

↑**1=Custom Weir/Orifice** (Weir Controls 2.55 cfs @ 1.90 fps)

Belmont Hill School - Proposed Conditions

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Pond D: Subsurface Chambers - Chamber Wizard Field A

Chamber Model = ACF R-Tank SD 3 (ACF Environmental R-Tank SD)

Inside= 15.7"W x 26.8"H => 2.78 sf x 2.35'L = 6.5 cf

Outside= 15.7"W x 26.8"H => 2.93 sf x 2.35'L = 6.9 cf

34 Chambers/Row x 2.35' Long = 79.76' Row Length +24.0" End Stone x 2 = 83.76' Base Length

20 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 30.25' Base Width

4.0" Stone Base + 26.8" Chamber Height + 12.0" Stone Cover = 3.56' Field Height

680 Chambers x 6.5 cf = 4,436.7 cf Chamber Storage

680 Chambers x 6.9 cf = 4,670.2 cf Displacement

9,029.7 cf Field - 4,670.2 cf Chambers = 4,359.5 cf Stone x 40.0% Voids = 1,743.8 cf Stone Storage

Chamber Storage + Stone Storage = 6,180.5 cf = 0.142 af

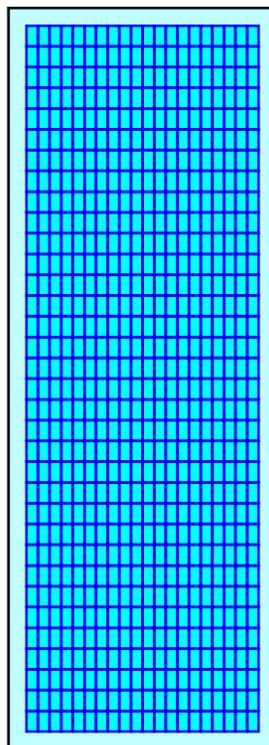
Overall Storage Efficiency = 68.4%

Overall System Size = 83.76' x 30.25' x 3.56'

680 Chambers

334.4 cy Field

161.5 cy Stone



Belmont Hill School - Proposed ConditionsBelmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Pond D: Subsurface Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	251.50	0.00	0.00	0.00
2.50	0.00	0	251.50	0.00	0.00	0.00
5.00	0.00	0	251.50	0.00	0.00	0.00
7.50	0.02	0	251.50	0.02	0.02	0.00
10.00	0.12	118	251.62	0.06	0.06	0.00
12.50	1.24	4,445	253.73	1.52	0.07	1.45
15.00	0.21	4,055	253.55	0.21	0.06	0.15
17.50	0.10	3,993	253.52	0.11	0.06	0.04
20.00	0.07	3,962	253.51	0.07	0.06	0.01
22.50	0.06	3,925	253.49	0.06	0.06	0.00
25.00	0.00	3,644	253.36	0.06	0.06	0.00
27.50	0.00	3,074	253.10	0.06	0.06	0.00
30.00	0.00	2,514	252.84	0.06	0.06	0.00
32.50	0.00	1,966	252.59	0.06	0.06	0.00
35.00	0.00	1,428	252.34	0.06	0.06	0.00
37.50	0.00	901	252.09	0.06	0.06	0.00
40.00	0.00	385	251.86	0.06	0.06	0.00
42.50	0.00	0	251.50	0.00	0.00	0.00
45.00	0.00	0	251.50	0.00	0.00	0.00
47.50	0.00	0	251.50	0.00	0.00	0.00
50.00	0.00	0	251.50	0.00	0.00	0.00
52.50	0.00	0	251.50	0.00	0.00	0.00
55.00	0.00	0	251.50	0.00	0.00	0.00
57.50	0.00	0	251.50	0.00	0.00	0.00
60.00	0.00	0	251.50	0.00	0.00	0.00
62.50	0.00	0	251.50	0.00	0.00	0.00
65.00	0.00	0	251.50	0.00	0.00	0.00
67.50	0.00	0	251.50	0.00	0.00	0.00
70.00	0.00	0	251.50	0.00	0.00	0.00
72.50	0.00	0	251.50	0.00	0.00	0.00

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Stage-Area-Storage for Pond D: Subsurface Chambers

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
251.50	2,533	0	254.05	2,533	5,136
251.55	2,533	51	254.10	2,533	5,203
251.60	2,533	101	254.15	2,533	5,254
251.65	2,533	152	254.20	2,533	5,305
251.70	2,533	203	254.25	2,533	5,355
251.75	2,533	253	254.30	2,533	5,406
251.80	2,533	304	254.35	2,533	5,457
251.85	2,533	374	254.40	2,533	5,507
251.90	2,533	482	254.45	2,533	5,558
251.95	2,533	590	254.50	2,533	5,609
252.00	2,533	699	254.55	2,533	5,659
252.05	2,533	807	254.60	2,533	5,710
252.10	2,533	915	254.65	2,533	5,761
252.15	2,533	1,023	254.70	2,533	5,811
252.20	2,533	1,132	254.75	2,533	5,862
252.25	2,533	1,240	254.80	2,533	5,913
252.30	2,533	1,348	254.85	2,533	5,963
252.35	2,533	1,456	254.90	2,533	6,014
252.40	2,533	1,564	254.95	2,533	6,065
252.45	2,533	1,673	255.00	2,533	6,115
252.50	2,533	1,781	255.05	2,533	6,166
252.55	2,533	1,889	255.10	2,533	6,181
252.60	2,533	1,997	255.15	2,533	6,181
252.65	2,533	2,106	255.20	2,533	6,181
252.70	2,533	2,214	255.25	2,533	6,181
252.75	2,533	2,322	255.30	2,533	6,181
252.80	2,533	2,430	255.35	2,533	6,181
252.85	2,533	2,539	255.40	2,533	6,181
252.90	2,533	2,647	255.45	2,533	6,181
252.95	2,533	2,755	255.50	2,533	6,181
253.00	2,533	2,863			
253.05	2,533	2,972			
253.10	2,533	3,080			
253.15	2,533	3,188			
253.20	2,533	3,296			
253.25	2,533	3,404			
253.30	2,533	3,513			
253.35	2,533	3,621			
253.40	2,533	3,729			
253.45	2,533	3,837			
253.50	2,533	3,946			
253.55	2,533	4,054			
253.60	2,533	4,162			
253.65	2,533	4,270			
253.70	2,533	4,379			
253.75	2,533	4,487			
253.80	2,533	4,595			
253.85	2,533	4,703			
253.90	2,533	4,812			
253.95	2,533	4,920			
254.00	2,533	5,028			

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link PR DP A: PR Park Ave

Inflow Area = 1.875 ac, 27.31% Impervious, Inflow Depth = 4.90" for 100-yr 24-hr event
Inflow = 7.79 cfs @ 12.23 hrs, Volume= 0.766 af
Primary = 7.79 cfs @ 12.23 hrs, Volume= 0.766 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Hydrograph for Link PR DP A: PR Park Ave

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.04	0.00	0.04	59.00	0.00	0.00	0.00
9.00	0.11	0.00	0.11	60.00	0.00	0.00	0.00
10.00	0.23	0.00	0.23	61.00	0.00	0.00	0.00
11.00	0.45	0.00	0.45	62.00	0.00	0.00	0.00
12.00	3.31	0.00	3.31	63.00	0.00	0.00	0.00
13.00	1.24	0.00	1.24	64.00	0.00	0.00	0.00
14.00	0.70	0.00	0.70	65.00	0.00	0.00	0.00
15.00	0.52	0.00	0.52	66.00	0.00	0.00	0.00
16.00	0.38	0.00	0.38	67.00	0.00	0.00	0.00
17.00	0.29	0.00	0.29	68.00	0.00	0.00	0.00
18.00	0.23	0.00	0.23	69.00	0.00	0.00	0.00
19.00	0.20	0.00	0.20	70.00	0.00	0.00	0.00
20.00	0.18	0.00	0.18	71.00	0.00	0.00	0.00
21.00	0.16	0.00	0.16	72.00	0.00	0.00	0.00
22.00	0.15	0.00	0.15				
23.00	0.13	0.00	0.13				
24.00	0.12	0.00	0.12				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link PR DP B: PR Wetlands

Inflow Area = 3.817 ac, 41.97% Impervious, Inflow Depth = 1.51" for 100-yr 24-hr event
Inflow = 5.61 cfs @ 12.17 hrs, Volume= 0.479 af
Primary = 5.61 cfs @ 12.17 hrs, Volume= 0.479 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link PR DP B: PR Wetlands

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	1.94	0.00	1.94	63.00	0.00	0.00	0.00
13.00	1.01	0.00	1.01	64.00	0.00	0.00	0.00
14.00	0.57	0.00	0.57	65.00	0.00	0.00	0.00
15.00	0.42	0.00	0.42	66.00	0.00	0.00	0.00
16.00	0.29	0.00	0.29	67.00	0.00	0.00	0.00
17.00	0.22	0.00	0.22	68.00	0.00	0.00	0.00
18.00	0.16	0.00	0.16	69.00	0.00	0.00	0.00
19.00	0.13	0.00	0.13	70.00	0.00	0.00	0.00
20.00	0.12	0.00	0.12	71.00	0.00	0.00	0.00
21.00	0.11	0.00	0.11	72.00	0.00	0.00	0.00
22.00	0.10	0.00	0.10				
23.00	0.09	0.00	0.09				
24.00	0.08	0.00	0.08				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link PR DP C: PR Prospect St

Inflow Area = 0.490 ac, 18.78% Impervious, Inflow Depth = 2.09" for 100-yr 24-hr event
Inflow = 0.84 cfs @ 12.19 hrs, Volume= 0.085 af
Primary = 0.84 cfs @ 12.19 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Hydrograph for Link PR DP C: PR Prospect St

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.24	0.00	0.24	63.00	0.00	0.00	0.00
13.00	0.16	0.00	0.16	64.00	0.00	0.00	0.00
14.00	0.11	0.00	0.11	65.00	0.00	0.00	0.00
15.00	0.08	0.00	0.08	66.00	0.00	0.00	0.00
16.00	0.06	0.00	0.06	67.00	0.00	0.00	0.00
17.00	0.05	0.00	0.05	68.00	0.00	0.00	0.00
18.00	0.04	0.00	0.04	69.00	0.00	0.00	0.00
19.00	0.03	0.00	0.03	70.00	0.00	0.00	0.00
20.00	0.03	0.00	0.03	71.00	0.00	0.00	0.00
21.00	0.03	0.00	0.03	72.00	0.00	0.00	0.00
22.00	0.03	0.00	0.03				
23.00	0.02	0.00	0.02				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link PR DP E: EX BMP

Inflow Area = 0.245 ac, 67.76% Impervious, Inflow Depth = 5.99" for 100-yr 24-hr event
Inflow = 1.37 cfs @ 12.14 hrs, Volume= 0.122 af
Primary = 1.37 cfs @ 12.14 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link PR DP E: EX BMP

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.01	0.00	0.01	59.00	0.00	0.00	0.00
9.00	0.02	0.00	0.02	60.00	0.00	0.00	0.00
10.00	0.04	0.00	0.04	61.00	0.00	0.00	0.00
11.00	0.08	0.00	0.08	62.00	0.00	0.00	0.00
12.00	0.75	0.00	0.75	63.00	0.00	0.00	0.00
13.00	0.17	0.00	0.17	64.00	0.00	0.00	0.00
14.00	0.10	0.00	0.10	65.00	0.00	0.00	0.00
15.00	0.08	0.00	0.08	66.00	0.00	0.00	0.00
16.00	0.06	0.00	0.06	67.00	0.00	0.00	0.00
17.00	0.04	0.00	0.04	68.00	0.00	0.00	0.00
18.00	0.03	0.00	0.03	69.00	0.00	0.00	0.00
19.00	0.03	0.00	0.03	70.00	0.00	0.00	0.00
20.00	0.03	0.00	0.03	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Summary for Link PR DP F: PR Main Campus

Inflow Area = 2.040 ac, 51.23% Impervious, Inflow Depth = 5.02" for 100-yr 24-hr event
Inflow = 8.53 cfs @ 12.19 hrs, Volume= 0.853 af
Primary = 8.53 cfs @ 12.19 hrs, Volume= 0.853 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions

Type III 24-hr 100-yr 24-hr Rainfall=8.85"

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Hydrograph for Link PR DP F: PR Main Campus

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.01	0.00	0.01	56.00	0.00	0.00	0.00
6.00	0.02	0.00	0.02	57.00	0.00	0.00	0.00
7.00	0.04	0.00	0.04	58.00	0.00	0.00	0.00
8.00	0.08	0.00	0.08	59.00	0.00	0.00	0.00
9.00	0.16	0.00	0.16	60.00	0.00	0.00	0.00
10.00	0.27	0.00	0.27	61.00	0.00	0.00	0.00
11.00	0.49	0.00	0.49	62.00	0.00	0.00	0.00
12.00	4.98	0.00	4.98	63.00	0.00	0.00	0.00
13.00	1.35	0.00	1.35	64.00	0.00	0.00	0.00
14.00	0.80	0.00	0.80	65.00	0.00	0.00	0.00
15.00	0.58	0.00	0.58	66.00	0.00	0.00	0.00
16.00	0.40	0.00	0.40	67.00	0.00	0.00	0.00
17.00	0.30	0.00	0.30	68.00	0.00	0.00	0.00
18.00	0.22	0.00	0.22	69.00	0.00	0.00	0.00
19.00	0.18	0.00	0.18	70.00	0.00	0.00	0.00
20.00	0.16	0.00	0.16	71.00	0.00	0.00	0.00
21.00	0.14	0.00	0.14	72.00	0.00	0.00	0.00
22.00	0.12	0.00	0.12				
23.00	0.11	0.00	0.11				
24.00	0.10	0.00	0.10				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Belmont Hill School - Proposed Conditions

Belmont Hill School - Proposed
Type III 24-hr 100-yr 24-hr Rainfall=8.85"

Prepared by Langan Engineering and Environmental Services

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Summary for Link PR DR D: Marsh Street CBs

Inflow Area = 1.235 ac, 42.35% Impervious, Inflow Depth = 3.91" for 100-yr 24-hr event
Inflow = 4.88 cfs @ 12.23 hrs, Volume= 0.403 af
Primary = 4.88 cfs @ 12.23 hrs, Volume= 0.403 af, Atten= 0%, Lag= 0.0 min
Routed to Link PR DP F : PR Main Campus

Primary outflow = Inflow, Time Span= 0.00-72.50 hrs, dt= 0.05 hrs

Belmont Hill School - Proposed Conditions*Type III 24-hr 100-yr 24-hr Rainfall=8.85"*

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Hydrograph for Link PR DR D: Marsh Street CBs

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.01	0.00	0.01	59.00	0.00	0.00	0.00
9.00	0.03	0.00	0.03	60.00	0.00	0.00	0.00
10.00	0.07	0.00	0.07	61.00	0.00	0.00	0.00
11.00	0.14	0.00	0.14	62.00	0.00	0.00	0.00
12.00	1.48	0.00	1.48	63.00	0.00	0.00	0.00
13.00	0.80	0.00	0.80	64.00	0.00	0.00	0.00
14.00	0.45	0.00	0.45	65.00	0.00	0.00	0.00
15.00	0.32	0.00	0.32	66.00	0.00	0.00	0.00
16.00	0.21	0.00	0.21	67.00	0.00	0.00	0.00
17.00	0.15	0.00	0.15	68.00	0.00	0.00	0.00
18.00	0.11	0.00	0.11	69.00	0.00	0.00	0.00
19.00	0.08	0.00	0.08	70.00	0.00	0.00	0.00
20.00	0.07	0.00	0.07	71.00	0.00	0.00	0.00
21.00	0.06	0.00	0.06	72.00	0.00	0.00	0.00
22.00	0.05	0.00	0.05				
23.00	0.04	0.00	0.04				
24.00	0.04	0.00	0.04				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

APPENDIX D

Stormwater Quality Calculations

100 Cambridge Street
Boston, MA 02114

Project Name: Belmont Hill School
 Project Number: 151021201
 Location: Belmont, MA
 Discharge Point: DP-A, DP-B
 Drainage Area(s): A-2, B-1, B-4

Sheet: 1 of 5
 Date: 30-May-2022
 Computed by: KJH
 Checked by: HH

A	B	C	D	E
BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Porous Pavement	80%	1.00	0.80	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20

* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol. 1

** Equals remaining load from previous BMP (E)

**Treatment Train
TSS Removal =**

80%

100 Cambridge Street
Boston, MA 02114

Project Name: Belmont Hill School
 Project Number: 151021201
 Location: Belmont, MA
 Discharge Point: DP-B
 Drainage Area(s): B-3 (pretreatment)

Sheet: 2 of 5
 Date: 30-May-2022
 Computed by: KJH
 Checked by: HH

A	B	C	D	E
BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	25%	1.00	0.25	0.75
Proprietary Structure - First Defense***	80%	0.75	0.60	0.15
	0%	0.15	0.00	0.15
	0%	0.15	0.00	0.15
	0%	0.15	0.00	0.15

* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol. 1

** Equals remaining load from previous BMP (E)

***Proprietary Pretreatment Structures are sized to treat Water Quality Flow. See attached water quality flow calculations. Removal rates for propriety devices are from approved studies and/or manufacturer data. See attached data sheets.

**Treatment Train
TSS Removal =**

85%

100 Cambridge Street
Boston, MA 02114

Project Name: Belmont Hill School
 Project Number: 151021201
 Location: Belmont, MA
 Discharge Point: DP-D
 Drainage Area(s): D-1 (pretreatment)

Sheet: 3 of 5
 Date: 30-May-2022
 Computed by: KJH
 Checked by: HH

A	B	C	D	E
BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	25%	1.00	0.25	0.75
Proprietary Structure - Downstream Defender***	80%	0.75	0.60	0.15
	0%	0.15	0.00	0.15
	0%	0.15	0.00	0.15
	0%	0.15	0.00	0.15

* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol. 1

** Equals remaining load from previous BMP (E)

***Proprietary Pretreatment Structures are sized to treat Water Quality Flow. See attached water quality flow calculations. Removal rates for propriety devices are from approved studies and/or manufacturer data. See attached data sheets.

**Treatment Train
TSS Removal =**

85%

100 Cambridge Street
Boston, MA 02114

Project Name: Belmont Hill School
 Project Number: 151021201
 Location: Belmont, MA
 Discharge Point: DP-B, DP-D
 Drainage Area(s): B-3, D-1

Sheet: 4 of 5
 Date: 30-May-2022
 Computed by: KJH
 Checked by: HH

A	B	C	D	E
BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Subsurface Infiltration Chambers	80%	1.00	0.80	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20

* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol. 1

** Equals remaining load from previous BMP (E)

***Proprietary Pretreatment Structures are sized to treat Water Quality Flow. See attached water quality flow calculations. Removal rates for propriety devices are from approved studies and/or manufacturer data. See attached data sheets.

**Treatment Train
TSS Removal =**

80%

100 Cambridge Street
Boston, MA 02114

Project Name: Belmont Hill School
 Project Number: 151021201
 Location: Belmont, MA
 Discharge Point: DP-E
 Drainage Area(s): E-1

Sheet: 5 of 5
 Date: 30-May-2022
 Computed by: KJH
 Checked by: HH

A	B	C	D	E
BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Proprietary Water Quality Unit - First Defense***	80%	1.00	0.80	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20
	0%	0.20	0.00	0.20

* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol. 1

** Equals remaining load from previous BMP (E)

***Proprietary Pretreatment Structures are sized to treat Water Quality Flow. See attached water quality flow calculations. Removal rates for propriety devices are from approved studies and/or manufacturer data. See attached data sheets.

**Treatment Train
TSS Removal =**

80%

Downstream Defender®

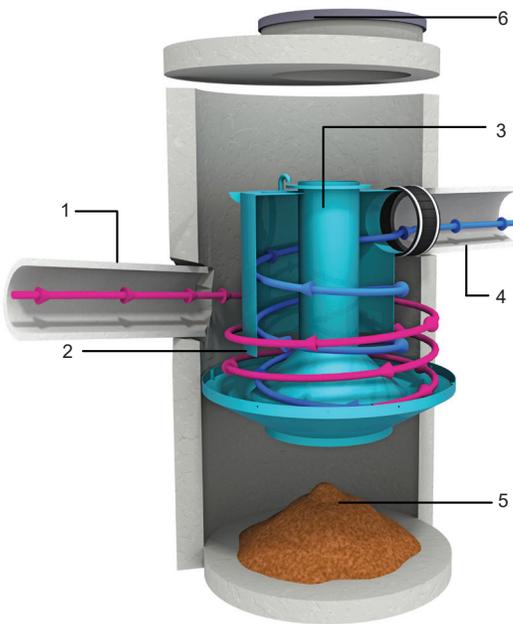
Advanced Hydrodynamic Separator

Product Summary

Exceptional Pollutant Capture in a Compact Profile

Downstream Defender is an advanced hydrodynamic vortex separator that provides impressive and reliable removal of fine and coarse particles, hydrocarbons, and floatable debris from surface water runoff, delivering high levels of stormwater treatment over a wide range of flow rates.

Available in a range of sizes, it can function as either pretreatment or as a stand-alone device, providing engineers and contractors with a flexible, cost-effective stormwater management option.



Product Profile

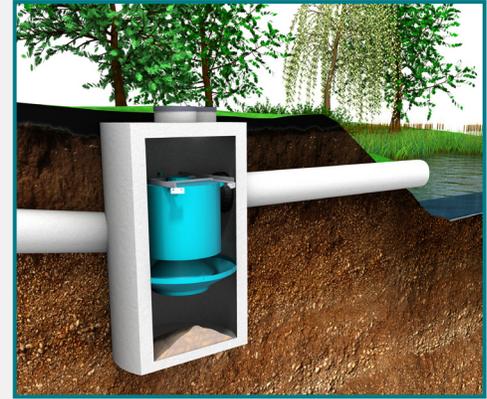
- | | |
|------------------------------------|--------------------------|
| 1. Inlet to Precast Vortex Chamber | 4. Outlet Pipe |
| 2. Cylindrical Baffle | 5. Sediment Storage Sump |
| 3. Center Shaft | 6. Access Lid |

Applications

- » Areas requiring a minimum of 50% TSS removal
- » Highways, parking lots, industrial areas and urban developments
- » Pre-treatment to ponds, storage systems, green infrastructure
- » Areas where high solids and trash capture are a must

How it Works

Tangential Inlet for Superior Vortex Action



Polluted stormwater is introduced tangentially into the side of the precast vortex chamber to establish rotational flow. A cylindrical baffle with an inner center shaft creates an outer (magenta arrow) and inner (blue arrow) spiraling column of flow and ensures maximum residence time for pollutant travel between the inlet and outlet.

Oil, trash and other floating pollutants are captured and stored on the surface of the outer spiraling column. Low energy vortex motion directs sediment into the protected sump region. Only after following a long three-dimensional flow path is the treated stormwater discharged from the outlet pipe.

Benefits

Tight & Mighty

- » Save space and money: treat high peak flows in as little as half of the footprint of other structural BMP systems.
- » Cut headloss: Low headloss means more site flexibility and provides engineers with design options for shallower sites.
- » Increase Pollutant Capture: Carefully designed internal components isolate the pollution storage areas, ensuring that what is captured is retained, even during high flows.
- » Adapt to Your Site: accommodate a change in outlet pipe direction to suit site-specific requirements.



Stormwater Solutions

→ hydro-int.com/downstreamdefender

Sizing & Design

The Downstream Defender can be used to meet a wide range of stormwater treatment objectives. It is available in 5 precast models that fit easily into the drainage network (**Table 1**). Selection and layout of the appropriate Downstream Defender model depends on site hydraulics, site constraints and local regulations. Both online (**Fig.3a**) and offline (**Fig.3b**) configurations are common.

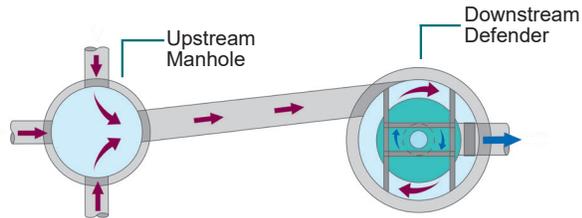


Fig.3a The Downstream Defender in an online configuration.

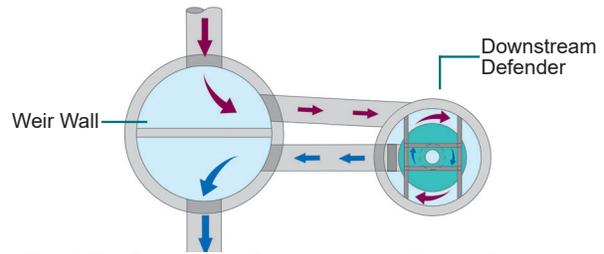


Fig.3b The Downstream Defender in an offline configuration.

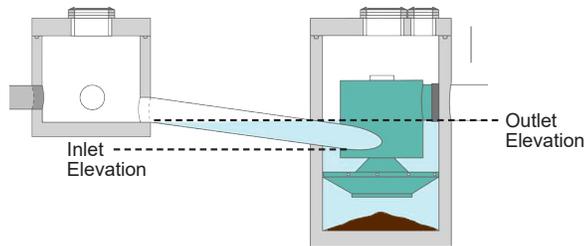


Fig.2 The Downstream Defender® has a submerged inlet that reduces headloss and improves efficiency of pollutant capture.

Online Sizing Tool



This simple online tool will recommend the best separator, model size and online or offline arrangement based on site-specific data entered by the user.

Go to hydro-int.com/sizing to access the tool.

Model Number and Diameter		Peak Treatment Flow Rate		Maximum Pipe Diameter		Oil Storage Capacity		Sediment Storage Capacity		Minimum Distance from Outlet Invert to Top of Rim		Standard Height from Outlet Invert to Sump Floor	
(ft)	(m)	(cfs)	(L/s)	(in)	(mm)	(gal)	(L)	(yd ³)	(m ³)	(ft)	(m)	(ft)	(m)
4	1.2	3.0	85	12	300	70	265	0.70	0.53	2.8	0.85	4.1	1.25
6	1.8	8.0	227	18	450	216	818	2.10	1.61	3.2	0.98	5.9	1.80
8	2.4	15.0	425	24	600	540	2,044	4.65	3.56	4.2	1.28	7.7	2.35
10	3.0	25.0	708	30	750	1,050	3,975	8.70	6.65	5.0	1.52	9.4	2.85
12*	3.7	38.0	1,076	36	900	1,770	6,700	14.70	11.24	5.6	1.71	11.2	3.41

*Not available in all areas. Contact Hydro International for details.

Maintenance

Easy access through the center shaft of the system makes for quick, simple sump cleanout. Trash and floatables can be removed from the surface with a net.

To ensure optimal performance, recommend Hydro International to your clients as the preferred service and maintenance provider.



📍 Hydro International, 94 Hutchins Drive, Portland, ME 04102

☎ Tel: (207) 756-6200

✉ Email: stormwaterinquiry@hydro-int.com

🌐 Web: www.hydro-int.com/downstreamdefender

DD_SS_C_2111

Download Drawings!

→ hydro-int.com/dd-drawings

Access the Operation & Maintenance Manual

→ hydro-int.com/dd-om

First Defense[®] High Capacity

A Simple Solution for your Trickiest Sites

Product Profile

The First Defense[®] High Capacity is an enhanced vortex separator that combines an effective stormwater treatment chamber with an integral peak flow bypass. It efficiently removes sediment total suspended solids (TSS), trash and hydrocarbons from stormwater runoff without washing out previously captured pollutants. The First Defense[®] High Capacity is available in several model configurations to accommodate a wide range of pipe sizes, peak flows and depth constraints (**Table 1**, next page).

Applications

- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Retrofit installations where stormwater treatment is placed on or tied into an existing storm drain line
- Pretreatment for filters, infiltration and storage

Advantages

- Inlet options include surface grate or multiple inlet pipes
- Integral high capacity bypass conveys large peak flows without the need for “offline” arrangements using separate junction manholes
- Proven to prevent pollutant washout at up to 450% of its treatment flow
- Long flow path through the device ensures a long residence time within the treatment chamber, enhancing pollutant settling
- Delivered to site pre-assembled and ready for installation

How it Works

The First Defense[®] High Capacity has internal components designed to remove and retain gross debris, total suspended solids (TSS) and hydrocarbons (**Fig.1**).

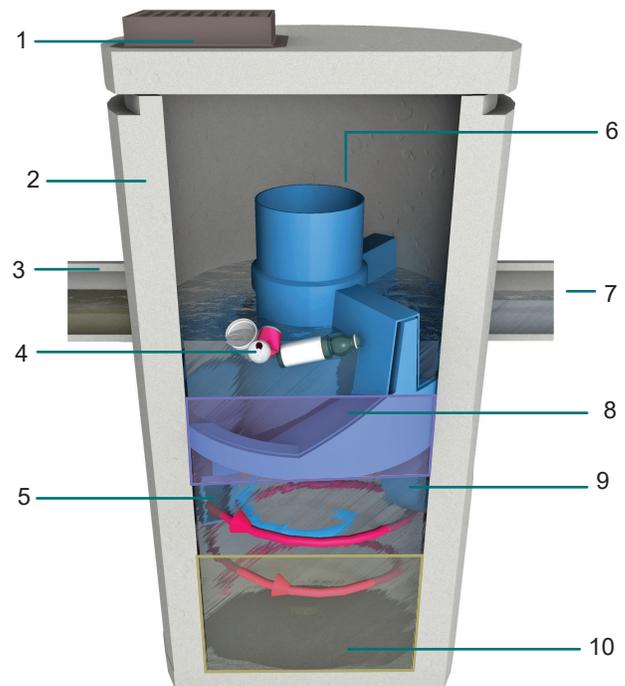
Contaminated stormwater runoff enters the inlet chute from a surface grate and/or inlet pipe. The inlet chute introduces flow into the chamber tangentially to create a low energy vortex flow regime (**magenta arrow**) that directs sediment into the sump while oils, floating trash and debris rise to the surface.

Treated stormwater exits through a submerged outlet chute located opposite to the direction of the rotating flow (**blue arrow**). Enhanced vortex separation is provided by forcing the rotating flow within the vessel to follow the longest path possible rather than directly from inlet to outlet.

Higher flows bypass the treatment chamber to prevent turbulence and washout of captured pollutants. An internal bypass conveys infrequent peak flows directly to the outlet eliminating the need for, and expense of, external bypass control structures. A floatables draw off slot functions to convey floatables into the treatment chamber prior to bypass.

Verified by NJCAT and NJDEP

Fig.1 The First Defense[®] High Capacity has internal components designed to efficiently capture pollutants and prevent washout at peak flows.



Components

- | | |
|-----------------------------------------------|-------------------------------|
| 1. Inlet Grate (optional) | 6. Internal Bypass |
| 2. Precast chamber | 7. Outlet pipe |
| 3. Inlet Pipe (optional) | 8. Oil and Floatables Storage |
| 4. Floatables Draw Off Slot
(not pictured) | 9. Outlet chute |
| 5. Inlet Chute | 10. Sediment Storage Sump |

First Defense® High Capacity

Sizing & Design

This adaptable online treatment system works easily with large pipes, multiple inlet pipes, inlet grates and now, contains a high capacity bypass for the conveyance of large peak flows. Designed with site flexibility in mind, the First Defense® High Capacity allows engineers to maximize available site space without compromising treatment level.

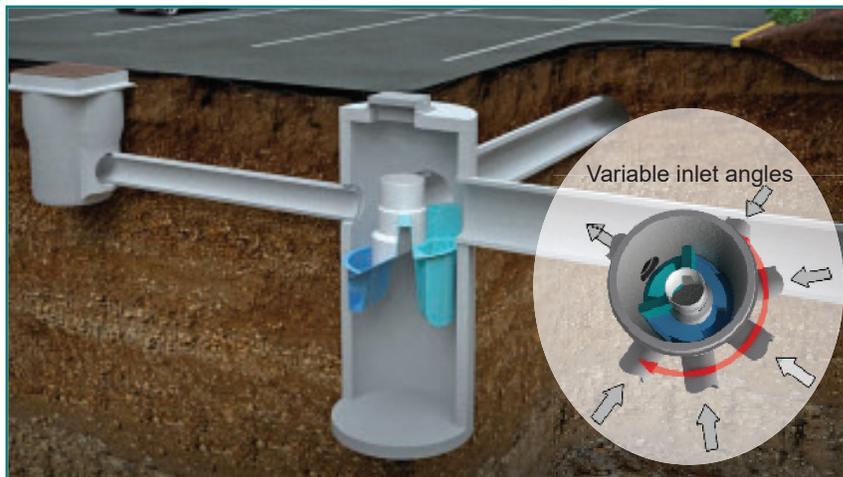


Fig 2. Works with multiple inlet pipes and grates

Inspection and Maintenance

Nobody maintains our systems better than we do. To ensure optimal, ongoing device performance, be sure to recommend Hydro International as a preferred service and maintenance provider to your clients.

Call **1 (800) 848-2706** to schedule an inspection and cleanout or learn more at hydro-int.com/service

SIZING CALCULATOR FOR ENGINEERS



This simple online tool will recommend the best separator, model size and online/offline arrangement based on site-specific data entered by the user.

Go to hydro-int.com/sizing to access the tool.



Fig 3. Maintenance is done with a vector truck

Table 1. First Defense® High Capacity Design Criteria.

First Defense® High Capacity Model Number	Diameter	Typical TSS Treatment Flow Rates		Peak Online Flow Rate	Maximum Pipe Diameter ¹	Oil Storage Capacity	Typical Sediment Storage Capacity ²	Minimum Distance from Outlet Invert to Top of Rim ³	Standard Distance from Outlet Invert to Sump Floor
		NJDEP Certified	110µm						
	(ft / m)	(cfs / L/s)	(cfs / L/s)	(cfs / L/s)	(in / mm)	(gal / L)	(yd ³ / m ³)	(ft / m)	(ft / m)
FD-3HC	3 / 0.9	0.84 / 23.7	1.06 / 30.0	15 / 424	18 / 457	125 / 473	0.4 / 0.3	2.0 - 3.5 / 0.6 - 1.0	3.71 / 1.13
FD-4HC	4 / 1.2	1.50 / 42.4	1.88 / 53.2	18 / 510	24 / 600	191 / 723	0.7 / 0.5	2.3 - 3.9 / 0.7 - 1.2	4.97 / 1.5
FD-5HC	5 / 1.5	2.34 / 66.2	2.94 / 83.2	20 / 566	24 / 600	300 / 1135	1.1 / .84	2.5 - 4.5 / 0.7 - 1.3	5.19 / 1.5
FD-6HC	6 / 1.8	3.38 / 95.7	4.23 / 119.8	32 / 906	30 / 750	496 / 1,878	1.6 / 1.2	3.0 - 5.1 / 0.9 - 1.6	5.97 / 1.8
FD-8HC	8 / 2.4	6.00 / 169.9	7.52 / 212.9	50 / 1,415	48 / 1219	1120 / 4239	2.8 / 2.1	3.0 - 6.0 / 0.9 - 1.8	7.40 / 2.2

¹Contact Hydro International when larger pipe sizes are required.

²Contact Hydro International when custom sediment storage capacity is required.

³Minimum distance for models depends on pipe diameter.

Technical Abstract

First Defense® - High Capacity

NJCAT Verified 80% TSS Removal for 50 to 150 µm Particle Size Range

Introduction

Hydro International has a state-of-the-art hydraulics and test facility that is used both to develop products and to evaluate performance. Through controlled testing using industry standard test protocols, Hydro's treatment products are evaluated under varying hydraulic and sediment load conditions. With a known drainage area or water quality flow rate, these test results are used to benchmark treatment objectives and to select the correct model size.

A common stormwater treatment goal for manufactured treatment devices is to reduce the Total Suspended Solids (TSS) concentration by at least 80%. To comply with this goal, a silica-based test sand with known particle size gradation (PSD) and density is injected into the treatment system at different flow rates. With known TSS concentrations and particle sizes before and after treatment, efficiency curves are plotted and used to predict TSS reductions for a range of particle sizes.

OK110 Silica Test Sand

U.S. Silica OK110 is a common test sand that has been used by the industry but is no longer available. However, its PSD can be modelled from a blend of silica sands having a wide range of particle sizes. This abstract summarizes test results based on a particle size range similar to OK110 for the First Defense® High Capacity (FDHC). All test protocols and results have been independently verified by the New Jersey Corporation for Advanced Technology (NJCAT). The full report can be viewed at: [FDHC PSD Removal Verification Report 9-16.pdf](#)

First Defense High Capacity (FDHC)

The FDHC (Figure 1) has patented flow modifying internal components that create a gentle swirling flow path within the Vortex Chamber. The rotating flow creates low energy vortex forces that supplement gravitational settling forces to enhance separation of pollutants.

The internal components are fit into precast manholes to collect runoff as part of typical drainage network system. During rain events, flow enters either from a surface inlet grate or inlet pipe. As flow enters the manhole, components divert flow and pollutants into a Vortex Chamber beneath a separation module, that includes both Inlet/Outlet Chutes and Bypass Weirs. The internal Bypass Weirs divert peak flows over the separation module and away from the Vortex Chamber where pollutants are collecting. This prevents high velocities from re-suspending captured pollutants during infrequent but large storm events.

Capable of providing high pollutant removals for a wide range of flow rates and pipe sizes, the FDHC can be installed either online or offline depending on pipes and peak flows. Its efficiency and simplicity make it economical to install and maintain.

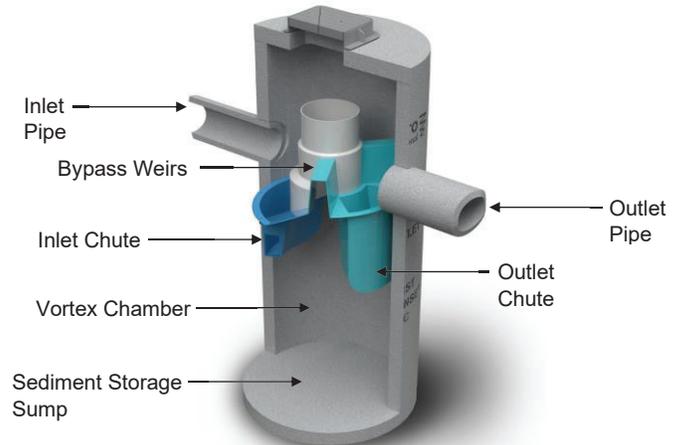


Figure 1 - First Defense High Capacity

Laboratory Testing Arrangement

The laboratory setup (Figure 2) consisted of a recirculating closed loop system with an 8-inch (200 mm) submersible Flygt pump that conveyed water from a 23,000 gal (87,064 L) reservoir through a PVC pipe network to the 4-ft (1.2m) FDHC. The flow rate of the pump was controlled by a GE Fuji Electric AF-300 P11 Adjustable Frequency Drive and measured by an EMCO Flow Systems 4411e Electromagnetic Flow Transmitter. Test sand was injected into the incoming flow stream using a volumetric screw feeder situated 10-ft prior to entering the test unit.

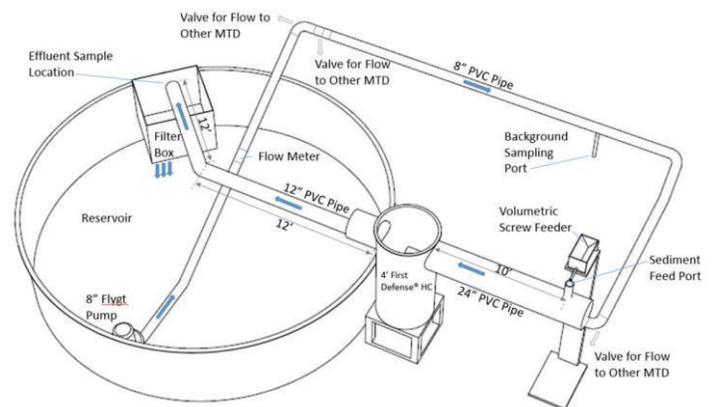


Figure 2 - Set-up of the Portland, Maine hydraulic testing facility

Test Sediment

The feed sediment injected into the inlet during removal efficiency testing was a blend of commercially available silica sands ranging from 2 µm to 1,000 µm. The PSD of the test sediment was analyzed by an independent laboratory in accordance with ASTM D 422-63.

First Defense® - High Capacity

To evaluate the performance consistent with OK110 test sand, results were analyzed from the particle sizes range of 50 µm to 150 µm ($D_{50}=108\mu\text{m}$). A comparison between the 50 – 150 µm range and OK110 gradation is shown in Figure 3. The 50 – 150 µm test sand gradation is overall finer than OK110 between 50 µm and 100 µm. For example, the test sand had 15% finer than 75 µm compared to the OK110 PSD that had only 3% less than 75 microns. Given that finer particles are more difficult to remove, performance results for 50 to 150 µm PSD is considered conservative.

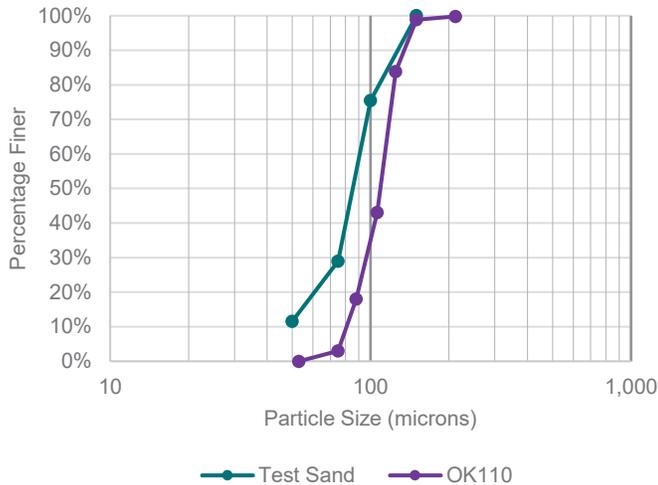


Figure 3 - Particle Size Distribution Comparison

Removal Efficiency Testing

Removal efficiency testing with the feed sediment was conducted in accordance with Section 5 of the NJDEP Laboratory Protocol for Manufactured Treatment Devices. Five flow rates ranging from 0.38 cfs to 1.88 cfs were tested to assess the performance trend.

The test sediment was fed into the flow stream at a rate that was equivalent to 200 mg/L. The average influent TSS concentration was calculated using the total sediment mass and volume of water added during dosing. The influent concentration for each particle size band was calculated using the percentage of particles in each particle size band and known average inlet concentration. Three time-spaced effluent grab samples were composited and analyzed using laser diffraction (ISO 13320) to evaluate the effluent particle sizes.

Table 1 – 50 – 150 µm Particle Size Range Test Results

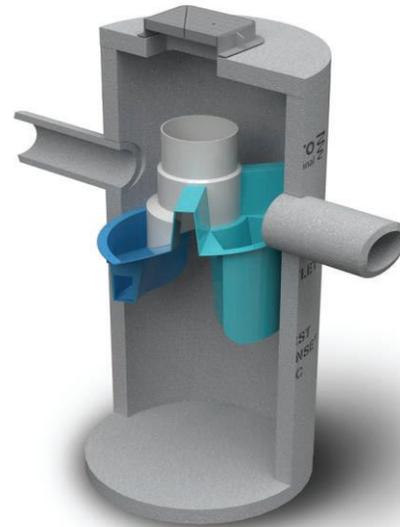
Flow cfs (L/s)	Inlet Mass grams	Outlet Mass grams	Removal %
0.38 (10.8)	1,554.6	107.1	93.1
0.75 (21.2)	1,761.0	150.8	91.4
1.13 (32.0)	1,872.8	127.2	93.2
1.5 (42.5)	2,203.2	226.7	89.7
1.88 (53.2)	2,366.6	303.8	87.2

The average effluent sediment concentration of the three composited samples was also measured for each flow rate in accordance with ASTM D3977-97. The effluent concentration for each particle size band was then calculated using the average effluent composite concentration and percentage of particles in each particle size band.

Percent removed at each of the five tested flow rates is shown in Table 1. Inlet concentrations of the OK110 particle size range varied from 79-84 mg/L compared to 4-8.5 mg/L at the outlet. As expected, the highest concentration measured at the outlet was at the highest tested flow rate of 1.88 cfs (53.2 L/s). In general, the 4-ft FDHC removed greater than 85% of the OK110 particle size range for all tested flow rates. Table 2 provides “Treatment Flow Rates” for the available models.

Table 2 – FDHC Treatment Flow Rate for > 85% OK110

Model:	FD-3HC	FD-4HC	FD-5HC	FD-6HC	FD-8HC
Size:	3 ft (900 mm)	4 ft (1.2 m)	5 ft (1.5 m)	6 ft (1.8 m)	8 ft (2.4m)
cfs:	1.06	1.88	2.94	4.23	7.52
L/s:	30.02	53.2	83.3	119.8	212.9



For design purposes the selected model's Treatment Flow Rate must be equal or greater to the site's required Water Quality Flow Rate. The peak flow rate and maximum pipe size must be considered to determine whether an online or offline configuration is appropriate. Full removal curves are available on request.

Refer First Defense product information brochure or visit www.hydro-int.com/us for more information

Stormwater Quality Flow Calculations

Calculation
 Stormwater Quality Volume (WQV)
 Stormwater Quality Flow (WQF)

Design Guideline
 Massachusetts Stormwater Handbook / MS4 Watershed
 MassDEP & Urban Hydrology for Small Watersheds TR-55

Subwatershed:	B3
Water Quality Structures:	WQS-101
Structure Model	Downstream Defender (4')

Watershed Characteristics

Total Watershed Area	0.476	ac			
Impervious Area, A_{imp}	0.476	ac	>>>	0.0007	mi ²
Time of Concentration, T_c	6	min	>>>	0.1	hr

Water Quality Volume (WQV)

$$WQV = (Q_{WQV}) * (A_{imp})$$

Water Quality Depth, Q_{WQV}	0.5	in
Impervious Area, A_{imp}	0.48	ac

Water Quality Volume, WQV	0.02	ac-ft	>>>	864	ft ³
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Water Quality Flow (WQF)

$$WQF = (q_u) * (A_{imp}) * (Q_{WQV})$$

q_u = Unit Peak Discharge (csm/in)

A = drainage area (mi²)

Water Quality Depth, Q_{WQV}	0.5	in
CN =	98	
T_c =	0.100	hr
I_a =	0.041	
P =	0.7	in
I_a / P =	0.058	
Unit Peak Discharge, q_u	752	csm/in

Determine q_u , using *MassDEP Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices*
 Figure 1 or 2 for $I_a/P = 0.058$ for 1/2" Q_{WQV}

Water Quality Flow, WQF =	0.26	cfs
WQF < maximum flow rate for 80% TSS Removal?	YES	

Belmont Hill School 350 Prospect St, Belmont, MA 02478	BY	KH	DATE	5/31/2022	PROJ NO. 151021201
Maintenance Facility	CKD	HH	DATE		SHEET

Stormwater Quality Flow Calculations

Calculation
Stormwater Quality Volume (WQV)
Stormwater Quality Flow (WQF)

Design Guideline
Massachusetts Stormwater Handbook / MS4 Watershed
MassDEP & Urban Hydrology for Small Watersheds TR-55

Subwatershed:	D1
Water Quality Structures:	WQS-301
Structure Model	FD-3HC

Watershed Characteristics

Total Watershed Area	0.183	ac			
Impervious Area, A_{imp}	0.137	ac	>>>	0.0002	mi ²
Time of Concentration, T_c	9	min	>>>	0.155	hr

Water Quality Volume (WQV)

$$WQV = (Q_{WQV}) * (A_{imp})$$

Water Quality Depth, Q_{WQV}	0.5	in
Impervious Area, A_{imp}	0.14	ac

Water Quality Volume, WQV	0.01	ac-ft	>>>	249	ft ³
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Water Quality Flow (WQF)

$$WQF = (q_u) * (A_{imp}) * (Q_{WQV})$$

q_u = Unit Peak Discharge (csm/in)

A = drainage area (mi²)

Water Quality Depth, Q_{WQV}	0.5	in
CN =	98	
T_c =	0.155	hr
I_a =	0.041	
P =	0.7	in
I_a / P =	0.058	
Unit Peak Discharge, q_u	694	csm/in

Water Quality Flow, WQF =	0.07	cfs
WQF < maximum flow rate for 80% TSS Removal?	YES	

Determine q_u , using *MassDEP Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices* Figure 1 or 2 for $I_a/P = 0.058$ for 1/2" Q_{WQV}

Belmont Hill School 350 Prospect St, Belmont, MA 02478	BY	KH	DATE	5/31/2022	PROJ NO. 151021201
Maintenance Facility	CKD	HH	DATE		SHEET

Stormwater Quality Flow Calculations

Calculation
 Stormwater Quality Volume (WQV)
 Stormwater Quality Flow (WQF)

Design Guideline
 Massachusetts Stormwater Handbook / MS4 Watershed
 MassDEP & Urban Hydrology for Small Watersheds TR-55

Subwatershed:	D1
Water Quality Structures:	WQS-302
Structure Model	FD-3HC

Watershed Characteristics

Total Watershed Area	0.470	ac			
Impervious Area, A_{imp}	0.263	ac	>>>	0.0004	mi ²
Time of Concentration, T_c	6	min	>>>	0.1	hr

Water Quality Volume (WQV)

$$WQV = (Q_{WQV}) * (A_{imp})$$

Water Quality Depth, Q_{WQV}	0.5	in
Impervious Area, A_{imp}	0.26	ac

Water Quality Volume, WQV	0.01	ac-ft	>>>	477	ft ³
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Water Quality Flow (WQF)

$$WQF = (q_u) * (A_{imp}) * (Q_{WQV})$$

q_u = Unit Peak Discharge (csm/in)

A = drainage area (mi²)

Water Quality Depth, Q_{WQV}	0.5	in
CN =	98	
T_c =	0.100	hr
I_a =	0.041	
P =	0.7	in
I_a / P =	0.058	
Unit Peak Discharge, q_u	752	csm/in

Determine q_u , using *MassDEP Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices*
 Figure 1 or 2 for $I_a/P = 0.058$ for 1/2" Q_{WQV}

Water Quality Flow, WQF =	0.15	cfs
WQF < maximum flow rate for 80% TSS Removal?	YES	

Belmont Hill School 350 Prospect St, Belmont, MA 02478	BY	KH	DATE	5/31/2022	PROJ NO. 151021201
Maintenance Facility	CKD	HH	DATE		SHEET

Stormwater Quality Flow Calculations

Calculation
 Stormwater Quality Volume (WQV)
 Stormwater Quality Flow (WQF)

Design Guideline
 Massachusetts Stormwater Handbook / MS4 Watershed
 MassDEP & Urban Hydrology for Small Watersheds TR-55

Subwatershed:	E1
Water Quality Structures:	WQS-201
Structure Model	FD-3HC

Watershed Characteristics

Total Watershed Area	0.046	ac			
Impervious Area, A_{imp}	0.038	ac	>>>	0.0001	mi ²
Time of Concentration, T_c	6	min	>>>	0.1	hr

Water Quality Volume (WQV)

$$WQV = (Q_{WQV}) * (A_{imp})$$

Water Quality Depth, Q_{WQV}	0.5	in	
Impervious Area, A_{imp}	0.04	ac	

Water Quality Volume, WQV	0.00	ac-ft	>>>	69	ft ³
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Water Quality Flow (WQF)

$$WQF = (q_u) * (A_{imp}) * (Q_{WQV})$$

q_u = Unit Peak Discharge (csm/in)

A = drainage area (mi²)

Water Quality Depth, Q_{WQV}	0.5	in	
CN =	98		
T_c =	0.100	hr	
I_a =	0.041		
P =	0.7	in	
I_a / P =	0.058		
Unit Peak Discharge, q_u	752	csm/in	

Water Quality Flow, WQF =	0.04	cfs	
WQF < maximum flow rate for 80% TSS Removal?	YES		

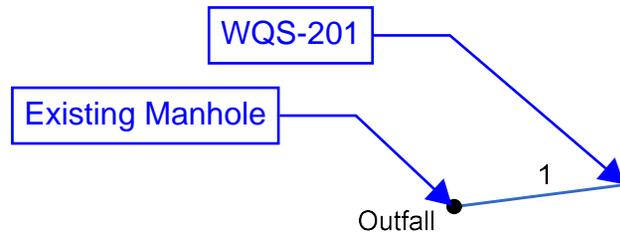
Determine q_u , using *MassDEP Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices* Figure 1 or 2 for $I_a/P = 0.058$ for 1/2" Q_{WQV}

Belmont Hill School 350 Prospect St, Belmont, MA 02478	BY	KH	DATE	5/31/2022	PROJ NO. 151021201
Maintenance Facility	CKD	HH	DATE		SHEET

APPENDIX E

Stormwater Collection System Calculations

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data							Line ID	
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)		Inlet/ Rim El (ft)
1	End	37.320	-7.462	MH	0.00	0.24	0.90	5.0	266.00	4.02	267.50	12	Cir	0.012	1.00	268.61	PIPE-59

Project File: Storm Network A.stm

Number of lines: 1

Date: 6/1/2022

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	TD-401	Manhole	268.61	Cir	0.00	0.00	12	Cir	267.50			

Project File: Storm Network A.stm

Number of Structures: 1

Run Date: 6/1/2022

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	PIPE-59	1.81	12	Cir	37.320	266.00	267.50	4.019	266.57	268.07	n/a	268.07	End	Manhole

Project File: Storm Network A.stm	Number of lines: 1	Run Date: 6/1/2022
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NOTES: Return period = 25 Yrs.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			Byp Line No		
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)	
1	TD-401	1.81	0.00	0.00	1.81	MH	0.0	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.0	Off

Project File: Storm Network A.stm Number of lines: 1 Run Date: 6/1/2022

NOTES: Inlet N-Values = 0.016; Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow						Total Travel Time (min)	
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)		Travel Time (min)
1	PIPE-59	User																		5.00
Project File: Storm Network A.stm					Min. Tc used for intensity calculations = 5 min					Number of lines: 1					Date: 6/1/2022					

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	1.81	266.00	266.57	0.57	0.47	3.90	0.24	266.81	0.000	37.320	267.50	268.07	0.57**	0.47	3.90	0.24	268.31	0.000	0.000	n/a	1.00	n/a

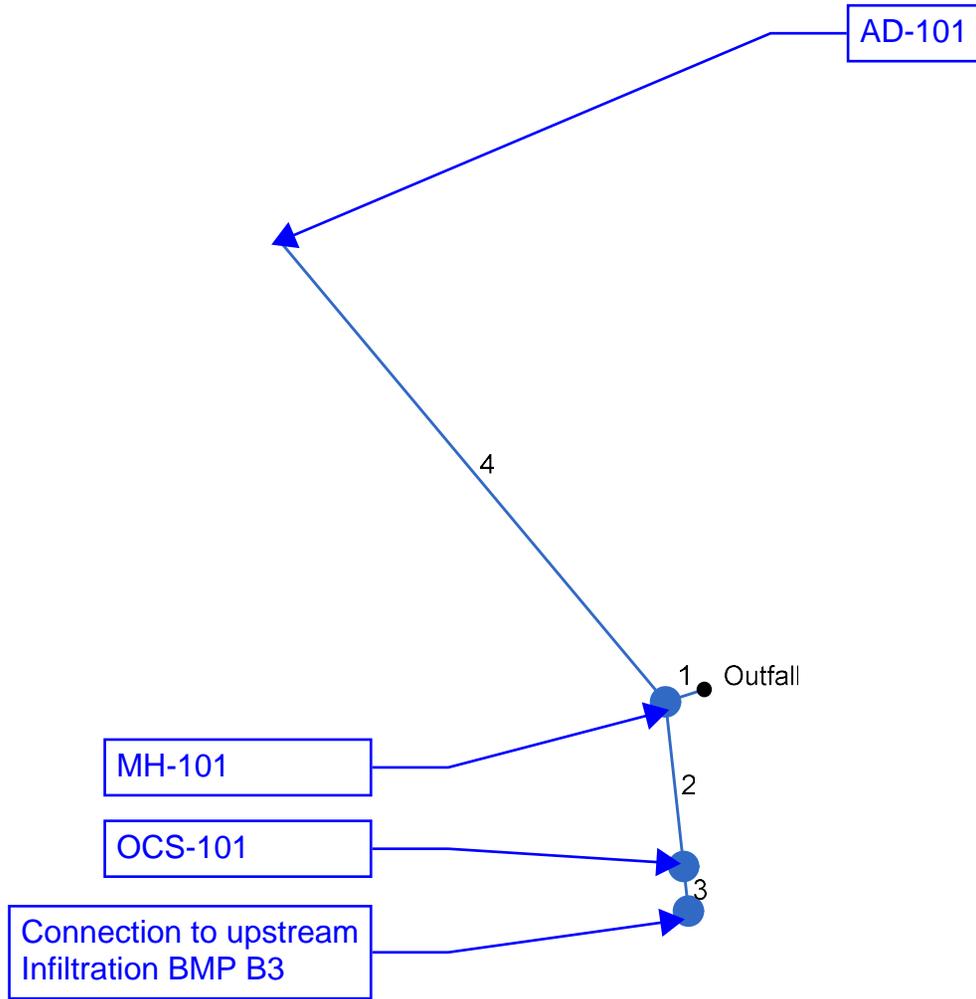
Project File: Storm Network A.stm

Number of lines: 1

Run Date: 6/1/2022

Notes: ; ** Critical depth. ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	5.679	161.453	MH	0.00	0.00	0.00	0.0	255.00	8.80	255.50	24	Cir	0.012	0.98	263.50	PIPE-8
2	1	22.996	-77.620	MH	0.00	0.00	0.00	0.0	257.60	1.35	257.91	24	Cir	0.012	0.15	262.91	PIPE-7 (1)
3	2	6.394	0.000	MH	1.55	0.00	0.00	0.0	257.91	1.41	258.00	24	Cir	0.012	1.00	260.17	PIPE-7
4	1	83.356	68.717	Grate	0.00	0.96	0.80	5.0	258.10	1.08	259.00	18	Cir	0.012	1.00	263.50	PIPE-11

Project File: Storm Network B-2.stm

Number of lines: 4

Date: 6/1/2022

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	MH-101	Manhole	263.50	Cir	4.00	4.00	24	Cir	255.50	24 18	Cir Cir	257.60 258.10
2	OCS-101	Manhole	262.91	Cir	4.00	4.00	24	Cir	257.91	24	Cir	257.91
3	INFITLRATION SYSETM O	Manhole	260.17	Cir	4.00	4.00	24	Cir	258.00			
4	AD-101	Grate	263.50	Cir	0.00	0.00	18	Cir	259.00			

Project File: Storm Network B-2.stm

Number of Structures: 4

Run Date: 6/1/2022

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	PIPE-8	7.79	24	Cir	5.679	255.00	255.50	8.804	255.77	256.49	0.38	256.49	End	Manhole
2	PIPE-7 (1)	1.55	24	Cir	22.996	257.60	257.91	1.348	257.92	258.34	n/a	258.34	1	Manhole
3	PIPE-7	1.55	24	Cir	6.394	257.91	258.00	1.408	259.14	259.08	n/a	259.14	2	Manhole
4	PIPE-11	6.33	18	Cir	83.356	258.10	259.00	1.080	258.89	259.80	n/a	260.59	1	Grate

Project File: Storm Network B-2.stm	Number of lines: 4	Run Date: 6/1/2022
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NOTES: Return period = 25 Yrs.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	7.79	255.00	255.77	0.77	1.11	6.99	0.39	256.16	0.000	5.679	255.50	256.49	0.99**	1.56	5.01	0.39	256.88	0.000	0.000	n/a	0.98	0.38
2	24	1.55	257.60	257.92	0.32*	0.32	4.83	0.15	258.07	0.000	22.996	257.91	258.34	0.43**	0.50	3.12	0.15	258.49	0.000	0.000	n/a	0.15	n/a
3	24	1.55	257.91	259.14	0.00	0.00	0.00	0.00	259.14	0.000	6.394	258.00	259.08	0.00**	0.00	0.00	0.00	259.08	0.000	0.000	0.000	1.00	n/a
4	18	6.33	258.10	258.89	0.00	0.00	0.00	0.00	258.89	0.000	83.356	259.00	259.80	0.00**	0.00	0.00	0.00	259.80	0.000	0.000	0.000	1.00	n/a

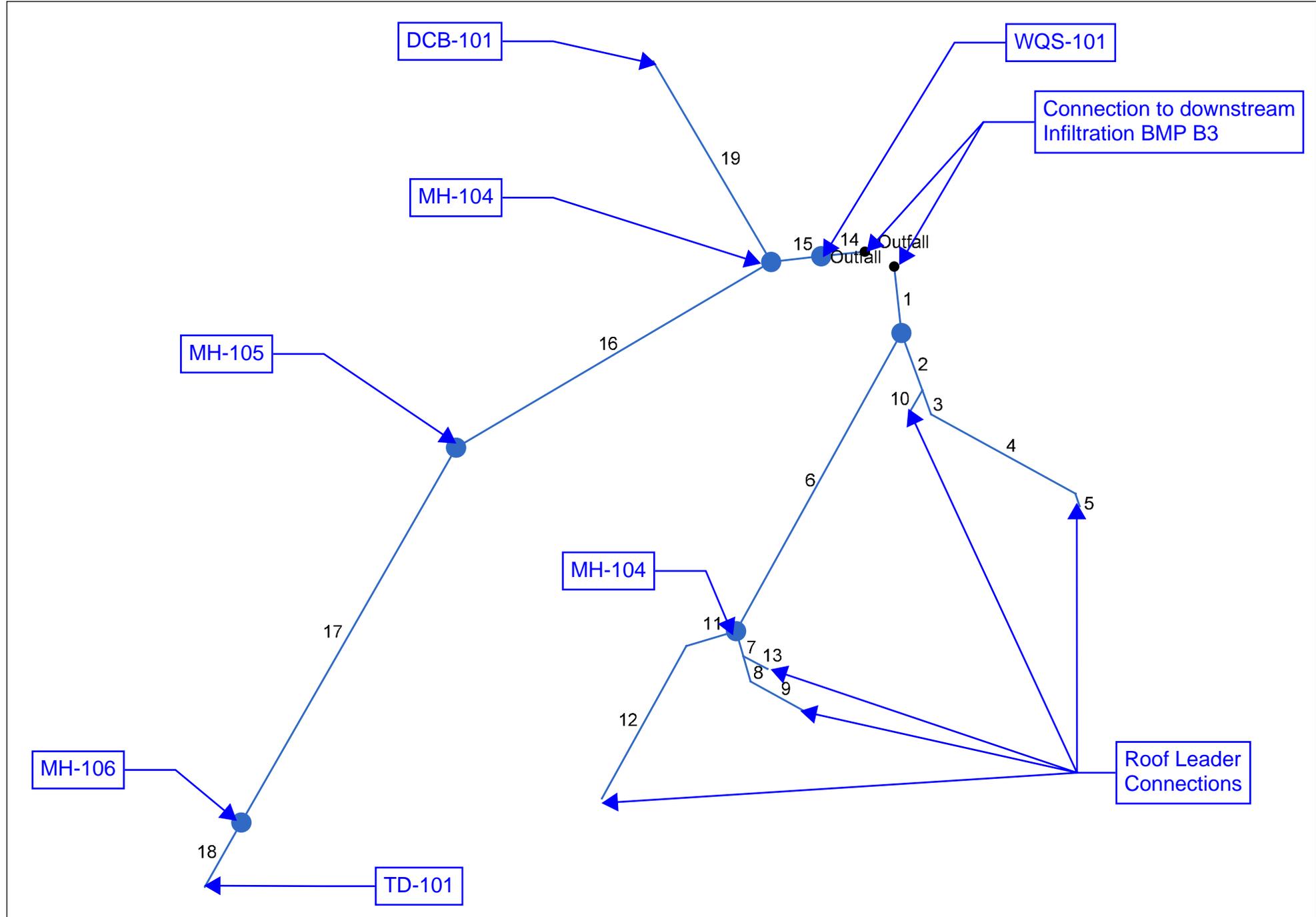
Project File: Storm Network B-2.stm

Number of lines: 4

Run Date: 6/1/2022

Notes: * depth assumed; ** Critical depth. ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: Storm Network B.stm	Number of lines: 19	Date: 6/1/2022
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Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	MH-102	Manhole	265.37	Cir	4.00	4.00	12	Cir	259.80	6 12	Cir Cir	262.00 259.90
2	STRU-48 (19)	Manhole	0.00	Cir	0.00	0.00	6	Cir	262.37	6 6	Cir Cir	262.37 262.00
3	STRU-48 (14)	Manhole	265.37	Cir	0.00	0.00	6	Cir	262.50	6	Cir	262.50
4	STRU-48 (13)	Manhole	0.00	Cir	0.00	0.00	6	Cir	263.00	6	Cir	263.00
5	RL-102	None	0.00	n/a	n/a	n/a	6	Cir	263.10			
6	MH-103	Manhole	264.59	Cir	4.00	4.00	12	Cir	260.65	6 6	Cir Cir	261.15 261.15
7	STRU-48 (18)	Manhole	262.11	Cir	0.00	0.00	6	Cir	261.58	6 6	Cir Cir	261.58 261.15
8	STRU-48 (9)	Manhole	-2.07	Cir	0.00	0.00	6	Cir	262.00	6	Cir	262.00
9	RL-105	None	0.00	n/a	n/a	n/a	6	Cir	263.00			
10	RL-101	None	0.00	n/a	n/a	n/a	6	Cir	263.00			
11	STRU-48 (10)	Manhole	262.04	Cir	0.00	0.00	6	Cir	261.50	6	Cir	261.50
12	RL-107	None	263.04	n/a	n/a	n/a	6	Cir	262.00			
13	RL-103	None	0.00	n/a	n/a	n/a	6	Cir	262.00			
14	DOWNSTREAM DEFENDE	Manhole	263.74	Cir	4.00	4.00	15	Cir	258.50	15	Cir	258.60
15	MH-104	Manhole	264.45	Cir	4.00	4.00	15	Cir	258.77	12 12	Cir Cir	259.11 259.11
16	MH-105	Manhole	264.25	Cir	4.00	4.00	12	Cir	259.53	12	Cir	259.63
17	MH-106	Manhole	264.20	Cir	4.00	4.00	12	Cir	260.10	12	Cir	260.20
18	TD-101	Manhole	261.35	Cir	0.00	0.00	12	Cir	260.30			
19	CB-101	Grate	263.60	Cir	0.00	0.00	12	Cir	260.60			

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	PIPE-44	0.78	12	Cir	14.435	259.60	259.80	1.385	259.88	260.17	0.09	260.17	End	Manhole
2	PIPE-50 (1)	0.40	6	Cir	13.274	262.00	262.37	2.771	262.22	262.69	0.11	262.69	1	Manhole
3	PIPE-50	0.25	6	Cir	5.576	262.37	262.50	2.370	262.69	262.75	n/a	262.75 j	2	Manhole
4	PIPE-49	0.26	6	Cir	35.795	262.50	263.00	1.397	262.75	263.26	n/a	263.26	3	Manhole
5	PIPE-48	0.26	6	Cir	2.951	263.00	263.10	3.388	263.26	263.36	0.10	263.36	4	None
6	PIPE-43	0.44	12	Cir	74.368	259.90	260.65	1.009	260.17	260.93	n/a	260.93	1	Manhole
7	PIPE-47 (1)	0.28	6	Cir	5.657	261.15	261.58	7.513	261.29	261.84	0.08	261.84	6	Manhole
8	PIPE-47	0.14	6	Cir	5.657	261.58	262.00	7.513	261.84	262.18	n/a	262.18 j	7	Manhole
9	PIPE-46	0.14	6	Cir	13.516	262.00	263.00	7.399	262.18	263.18	n/a	263.18	8	None
10	PIPE-10	0.15	6	Cir	5.639	262.00	263.00	17.735	262.69	263.19	n/a	263.19 j	2	None
11	PIPE-9	0.17	6	Cir	11.230	261.15	261.50	3.117	261.28	261.70	n/a	261.70	6	Manhole
12	PIPE-39	0.17	6	Cir	38.002	261.50	262.00	1.316	261.70	262.21	n/a	262.21	11	None
13	PIPE-45	0.15	6	Cir	6.000	261.15	262.00	14.167	261.84	262.19	n/a	262.19 j	7	None
14	PIPE-3	11.24	15	Cir	9.551	258.33	258.50	1.780	259.54	259.75	0.20	259.94	End	Manhole
15	PIPE-2	9.02	15	Cir	10.931	258.60	258.77	1.555	259.94*	260.12*	0.78	260.90	14	Manhole
16	PIPE-63	4.47	12	Cir	79.610	259.11	259.53	0.528	260.90*	261.97*	0.28	262.25	15	Manhole
17	PIPE-62	3.37	12	Cir	94.099	259.63	260.10	0.499	262.25*	262.97*	0.04	263.01	16	Manhole
18	PIPE-65	2.24	12	Cir	16.179	260.20	260.30	0.618	263.01*	263.07*	0.13	263.19	17	Manhole
19	PIPE-4	2.36	12	Cir	50.668	259.11	260.60	2.941	260.90	261.26	n/a	261.26 j	15	Grate

Project File: Storm Network B.stm

Number of lines: 19

Run Date: 6/1/2022

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			Byp Line No	
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)
1	MH-102	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	STRU-48 (19)	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	STRU-48 (14)	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	STRU-48 (13)	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
5	RL-102	0.26	0.00	0.00	0.26	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
6	MH-103	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
7	STRU-48 (18)	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
8	STRU-48 (9)	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
9	RL-105	0.14	0.00	0.00	0.14	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
10	RL-101	0.15	0.00	0.00	0.15	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
11	STRU-48 (10)	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
12	RL-107	0.17	0.00	0.00	0.17	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
13	RL-103	0.15	0.00	0.00	0.15	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
14	DOWNSTREAM	2.22*	0.00	0.00	2.22	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
15	MH-104	2.23*	0.00	0.00	2.23	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
16	MH-105	1.11*	0.00	0.00	1.11	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
17	MH-106	1.14*	0.00	0.00	1.14	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
18	TD-101	2.24*	0.00	0.00	2.24	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
19	CB-101	2.36*	0.00	2.36	0.00	Grate	0.0	0.00	4.58	2.29	2.00	Sag	2.00	0.050	0.020	0.000	0.30	11.99	0.30	11.99	0.0	Off

Project File: Storm Network B.stm

Number of lines: 19

Run Date: 6/1/2022

NOTES: Inlet N-Values = 0.016; Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	0.78	259.60	259.88	0.28	0.18	4.31	0.14	260.02	0.000	14.435	259.80	260.17	0.37**	0.26	2.96	0.14	260.30	0.000	0.000	n/a	0.63	0.09
2	6	0.40	262.00	262.22	0.22*	0.08	4.85	0.14	262.36	0.000	13.274	262.37	262.69	0.32**	0.13	3.00	0.14	262.83	0.000	0.000	n/a	0.79	0.11
3	6	0.25	262.37	262.69	0.32	0.10	1.90	0.10	262.79	0.000	5.576	262.50	262.75 j	0.25**	0.10	2.54	0.10	262.85	0.000	0.000	n/a	0.70	0.07
4	6	0.26	262.50	262.75	0.25	0.10	2.58	0.10	262.85	0.000	35.795	263.00	263.26	0.26**	0.10	2.55	0.10	263.36	0.000	0.000	n/a	0.72	n/a
5	6	0.26	263.00	263.26	0.26	0.10	2.56	0.10	263.36	0.000	2.951	263.10	263.36	0.26**	0.10	2.55	0.10	263.46	0.000	0.000	n/a	1.00	0.10
6	12	0.44	259.90	260.17	0.27	0.17	2.62	0.10	260.27	0.000	74.368	260.65	260.93	0.28**	0.18	2.52	0.10	261.02	0.000	0.000	n/a	0.75	n/a
7	6	0.28	261.15	261.29	0.14*	0.04	6.32	0.11	261.40	0.000	5.657	261.58	261.84	0.27**	0.11	2.64	0.11	261.95	0.000	0.000	n/a	0.75	0.08
8	6	0.14	261.58	261.84	0.27	0.07	1.26	0.07	261.91	0.000	5.657	262.00	262.18 j	0.18**	0.07	2.09	0.07	262.25	0.000	0.000	n/a	0.75	0.05
9	6	0.14	262.00	262.18	0.18	0.07	2.11	0.07	262.25	0.000	13.516	263.00	263.18	0.18**	0.07	2.09	0.07	263.25	0.000	0.000	n/a	1.00	n/a
10	6	0.15	262.00	262.69	0.50	0.07	0.77	0.01	262.70	0.061	5.639	263.00	263.19 j	0.19**	0.07	2.15	0.07	263.27	0.617	0.339	n/a	1.00	0.07
11	6	0.17	261.15	261.28	0.13*	0.04	3.96	0.08	261.36	0.000	11.230	261.50	261.70	0.20**	0.07	2.22	0.08	261.78	0.000	0.000	n/a	0.75	n/a
12	6	0.17	261.50	261.70	0.20	0.07	2.28	0.08	261.78	0.000	38.002	262.00	262.21	0.21**	0.08	2.24	0.08	262.28	0.000	0.000	n/a	1.00	n/a
13	6	0.15	261.15	261.84	0.50	0.07	0.77	0.01	261.85	0.061	6.000	262.00	262.19 j	0.19**	0.07	2.15	0.07	262.27	0.617	0.339	n/a	1.00	0.07
14	15	11.24	258.33	259.54	1.21*	1.21	9.26	1.33	260.87	2.259	9.551	258.50	259.75	1.25	1.23	9.16	1.30	261.05	2.463	2.361	0.225	0.15	0.20
15	15	9.02	258.60	259.94	1.25	1.23	7.35	0.84	260.78	1.662	10.931	258.77	260.12	1.25	1.23	7.35	0.84	260.96	1.661	1.662	0.182	0.93	0.78
16	12	4.47	259.11	260.90	1.00	0.79	5.69	0.50	261.41	1.343	79.610	259.53	261.97	1.00	0.79	5.69	0.50	262.48	1.342	1.342	1.069	0.55	0.28
17	12	3.37	259.63	262.25	1.00	0.79	4.30	0.29	262.54	0.765	94.099	260.10	262.97	1.00	0.79	4.30	0.29	263.26	0.765	0.765	0.720	0.15	0.04
18	12	2.24	260.20	263.01	1.00	0.79	2.85	0.13	263.14	0.336	16.179	260.30	263.07	1.00	0.79	2.85	0.13	263.19	0.336	0.336	0.054	1.00	0.13
19	12	2.36	259.11	260.90	1.00	0.55	3.00	0.14	261.04	0.374	50.668	260.60	261.26 j	0.66**	0.55	4.31	0.29	261.55	0.634	0.504	n/a	1.00	0.29

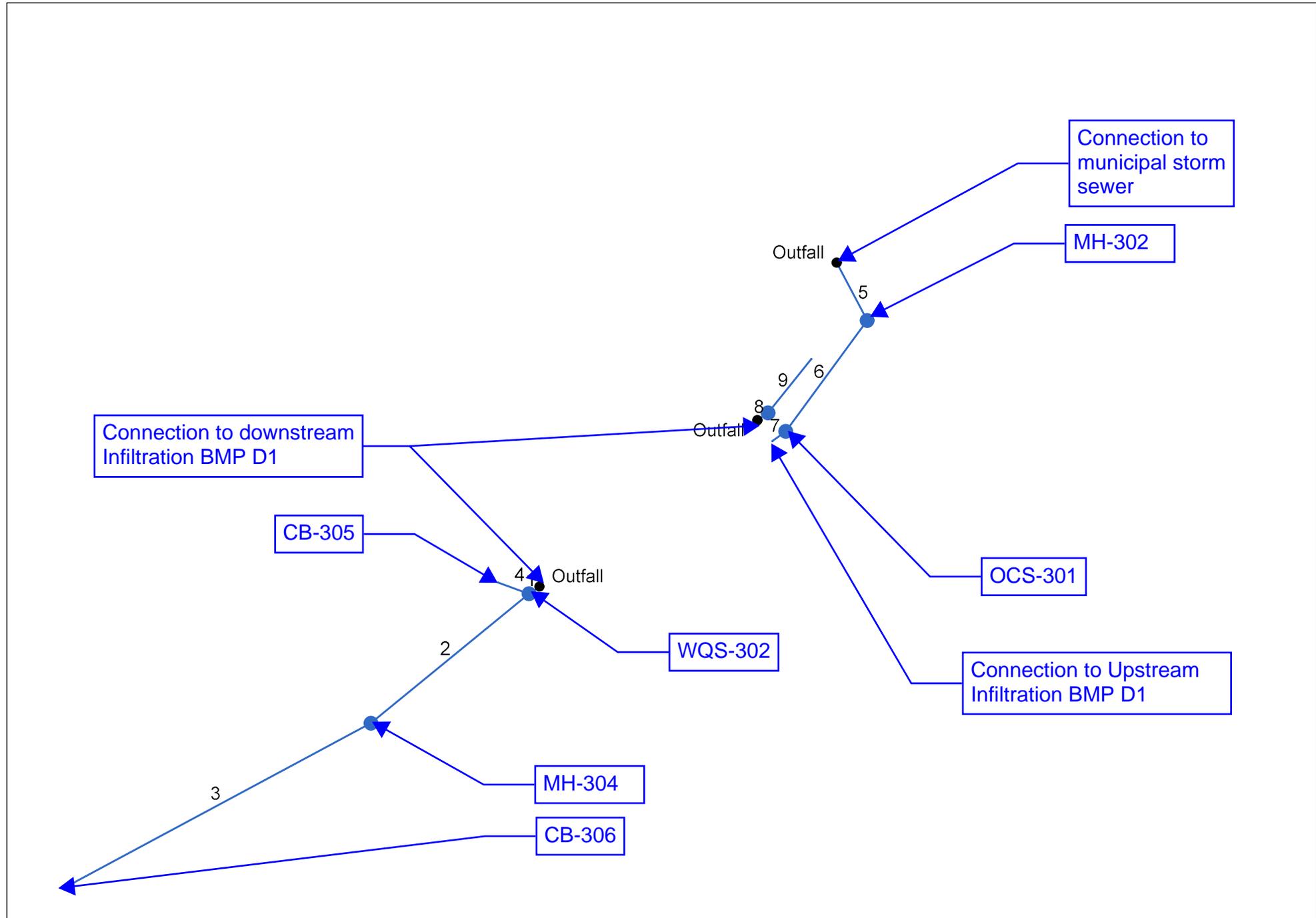
Project File: Storm Network B.stm

Number of lines: 19

Run Date: 6/1/2022

Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: Storm Network E.stm	Number of lines: 10	Date: 6/1/2022
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Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	FIRST DEFENSE WQS-302	Manhole	259.85	Cir	4.00	4.00	12	Cir	253.00	12 12	Cir Cir	254.00 254.00
2	MH-304	Manhole	261.90	Cir	4.00	4.00	12	Cir	257.00	12	Cir	257.10
3	CB-306	Grate	262.80	Cir	0.00	0.00	12	Cir	258.80			
4	CB-305	Grate	259.75	Cir	0.00	0.00	12	Cir	254.20			
5	MH-302	Manhole	255.24	Cir	4.00	4.00	12	Cir	251.20	12	Cir	251.30
6	OCS-301	Manhole	255.90	Cir	4.00	4.00	12	Cir	251.55	24	Cir	251.65
7	DETENTION SYSTEM OUT	Manhole	253.92	Cir	0.00	0.00	24	Cir	251.75			
8	WQS-301 (FD-3HC)	Manhole	255.94	Cir	4.00	4.00	12	Cir	251.90	12	Cir	252.00
9	CB-304	Grate	255.00	Cir	0.00	0.00	12	Cir	252.25			
10	FIRST DEFENSE WQS-201	None	252.75	n/a	n/a	n/a	12	Cir	248.30			

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	PIPE-27	2.07	12	Cir	4.000	252.75	253.00	6.250	253.36	253.61	0.22	253.61	End	Manhole
2	PIPE-26	0.80	12	Cir	63.342	254.00	257.00	4.736	254.21	257.37	0.03	257.37	1	Manhole
3	PIPE-25	0.85	12	Cir	108.178	257.10	258.80	1.571	257.38	259.18	n/a	259.18	2	Grate
4	PIPE-28	1.44	12	Cir	10.162	254.00	254.20	1.968	254.35	254.71	0.20	254.71	1	Grate
5	PIPE-30	0.31	12	Cir	20.445	251.05	251.20	0.734	251.28	251.43	0.07	251.43	End	Manhole
6	PIPE-29 (1)	0.31	12	Cir	42.801	251.30	251.55	0.584	251.52	251.78	0.03	251.78	5	Manhole
7	PIPE-29	0.31	24	Cir	5.086	251.65	251.75	1.966	251.78	251.94	0.06	251.94	6	Manhole
8	PIPE-27 (1)	3.84	12	Cir	4.000	251.83	251.90	1.750	252.66	252.73	n/a	252.73	End	Manhole
9	PIPE-20	2.53	12	Cir	21.567	252.00	252.25	1.159	252.73	252.93	n/a	252.93 j	8	Grate
10	PIPE-68	1.14	12	Cir	19.727	248.10	248.30	1.014	252.66*	252.68*	0.03	252.71	End	None

Project File: Storm Network E.stm

Number of lines: 10

Run Date: 6/1/2022

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			Byp Line No		
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)	
1	FIRST DEFENSE	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.0	Off
2	MH-304	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.0	Off
3	CB-306	0.85	0.00	0.85	0.00	Grate	0.0	0.00	0.31	0.15	2.00	Sag	2.00	0.050	0.020	0.000	0.31	12.45	0.31	12.45	0.0	Off	
4	CB-305	1.44	0.00	1.44	0.00	Grate	0.0	0.00	0.53	0.27	2.00	Sag	2.00	0.050	0.020	0.000	0.30	12.02	0.30	12.02	0.0	Off	
5	MH-302	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off	
6	OCS-301	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off	
7	DETENTION SYS	0.31*	0.00	0.00	0.31	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off	
8	WQS-301 (FD-3H)	1.31*	0.00	0.00	1.31	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off	
9	CB-304	2.53*	0.00	2.53	0.00	Grate	0.0	0.00	5.66	2.83	2.00	Sag	2.00	0.050	0.020	0.000	0.30	11.89	0.30	11.89	0.0	Off	
10	FIRST DEFENSE	1.14	0.00	0.00	1.14	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off	

Project File: Storm Network E.stm

Number of lines: 10

Run Date: 6/1/2022

NOTES: Inlet N-Values = 0.016; Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	2.07	252.75	253.36	0.61	0.51	4.10	0.26	253.63	0.000	4.000	253.00	253.61	0.61**	0.51	4.10	0.26	253.88	0.000	0.000	n/a	0.85	0.22
2	12	0.80	254.00	254.21	0.21*	0.12	6.72	0.14	254.35	0.000	63.342	257.00	257.37	0.37**	0.27	2.98	0.14	257.51	0.000	0.000	n/a	0.23	0.03
3	12	0.85	257.10	257.38	0.28*	0.18	4.62	0.14	257.53	0.000	108.178	258.80	259.18	0.38**	0.28	3.04	0.14	259.33	0.000	0.000	n/a	1.00	n/a
4	12	1.44	254.00	254.35	0.35*	0.25	5.82	0.20	254.55	0.000	10.162	254.20	254.71	0.51**	0.40	3.59	0.20	254.91	0.000	0.000	n/a	1.00	0.20
5	12	0.31	251.05	251.28	0.23*	0.14	2.28	0.08	251.36	0.000	20.445	251.20	251.43	0.23**	0.14	2.28	0.08	251.51	0.000	0.000	n/a	0.91	0.07
6	12	0.31	251.30	251.52	0.22*	0.13	2.44	0.08	251.60	0.000	42.801	251.55	251.78	0.23**	0.14	2.28	0.08	251.86	0.000	0.000	n/a	0.35	0.03
7	24	0.31	251.65	251.78	0.13*	0.09	3.40	0.06	251.85	0.000	5.086	251.75	251.94	0.19**	0.15	2.04	0.06	252.01	0.000	0.000	n/a	1.00	0.06
8	12	3.84	251.83	252.66	0.83*	0.70	5.49	0.47	253.13	0.000	4.000	251.90	252.73	0.83**	0.70	5.49	0.47	253.20	0.000	0.000	n/a	0.32	n/a
9	12	2.53	252.00	252.73	0.73	0.57	4.11	0.31	253.04	0.000	21.567	252.25	252.93 j	0.68**	0.57	4.44	0.31	253.24	0.000	0.000	n/a	1.00	n/a
10	12	1.14	248.10	252.66	1.00	0.79	1.46	0.03	252.69	0.088	19.727	248.30	252.68	1.00	0.79	1.46	0.03	252.71	0.088	0.088	0.017	1.00	0.03

Project File: Storm Network E.stm

Number of lines: 10

Run Date: 6/1/2022

Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

APPENDIX F

Outlet Protection Calculations

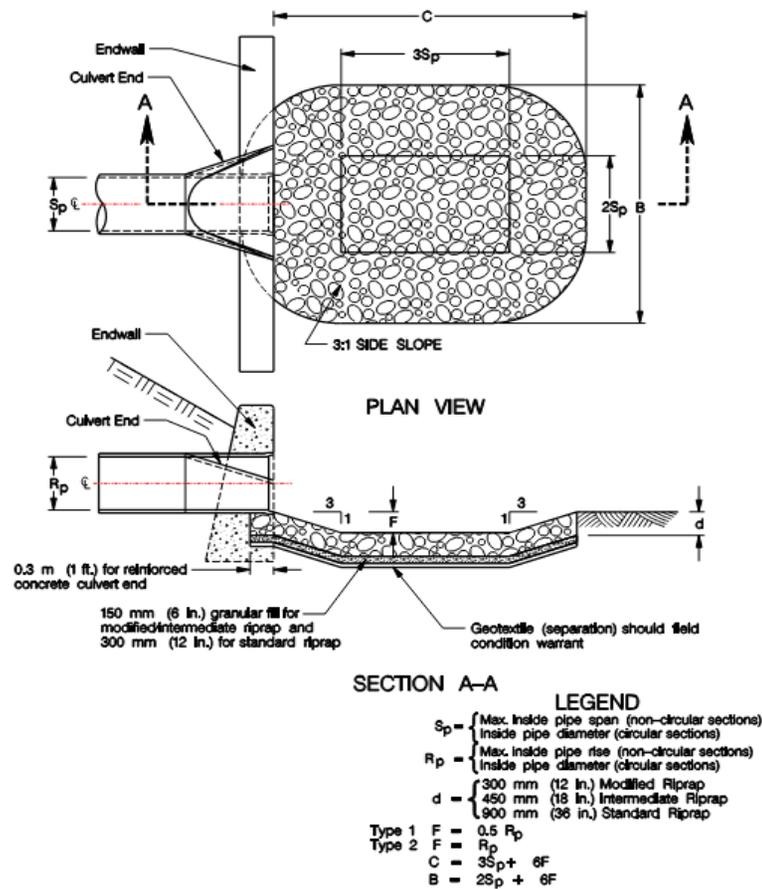
25YR Event - Riprap Outlet Protection Calculations¹

Outfall Number	FES-100
Outfall Parameters	
Discharge Destination	A Combined Outlet (A-3, A-4, A-5, A-6)
Outfall Do (in)	24
Outfall Do (ft)	2
Q, Flow 25yr (cfs)	7.79
V, Velocity 25yr (ft/s)	6.99
Tailwater, TW (ft)	1.00
Type A (TW < D/2) or B (Is TW >= D/2)	PFSH

Preformed Scour Hole (PFSH) Dimensions (Type 1)	
Outfall Do + 0.5 ft, E (ft)	2.5
Hole Depth 0.5Do, F (ft) (1 ft min.)	1.3
Hole Length, 3E (ft)	7.5
Hole Width, 2E (ft)	5.0
Overall Length, C (ft)	15
Overall Width, B (ft)	13
Calculated D50 (ft)	0.1
Calculated D50 (in)	1
Recommended Design D50 (in)	6
Riprap Thickness (ft)	1.5

Note:

1. Calculations based on methodology found in Connecticut DOT Drainage Manual



APPENDIX G

Groundwater Mounding Calculations

Groundwater Mounding Analysis Summary



Project Name: Belmont Hill School
 Project Number: 151021201
 Location: Belmont, MA
 Date: 6/3/2022
 Computed By: KH
 Checked by: HH

SW BMP Location & Description	BASIN DRAIN TIME CALCULATIONS						GROUNDWATER MOUNDING							
	Storage Volume ¹ (cf)	Bottom Surface Area (sf)	Infiltration Rate (in/hr)	Reference Test	Drain Time ² (hrs)	< 72 hrs	BMP 1/2 Length (ft)	BMP 1/2 Width (ft)	Max GW Mounding (ft)	Groundwater Elevation ³ (ft)	Reference Boring	BMP Bottom Elevation (ft)	Top Elev. of Mounding (ft)	BMP Bottom Elevation Higher than Top Elevation of Mounding?
East Campus Parking Lot Porous Pavement A1	6,970	9,800	0.59	IT-7	14.5	YES	80	30	4.748	264.50	TP-7	271.00	269.25	YES
East Campus Parking Lot Porous Pavement B1	18,731	36,800	0.39	IT-8	15.6	YES	160	70	3.380	259.00	TP-1	264.00	262.38	YES
East Campus Maintenance Lot Chambers B3	2,442	2,444	0.80	IT-3	15.0	YES	37.0	16.5	6.098	245.00	LB-02	258.00	251.10	YES
Permeable Pavement B4	5,227	6,200	0.80	IT-3	12.6	YES	125.0	12.0	4.790	245.00	LB-02	261.00	249.79	YES
Main Campus Jordan Parking Lot Chambers D1	2,520	2,533	0.94	IT-208	12.7	YES	42.0	15.0	5.910	242.50	TP-201	251.50	248.41	YES

Notes:

1. Storage Volume based on discarded exfiltration volume for 10-year, 24-hour storm.
2. Drain Time = Storage Volume/(Bottom Surface Infiltration Area x Design Permeability Rate).
3. Observed groundwater elevation or elevation of deepest excavation if no groundwater was encountered and there was no other indication of seasonal high water elevation observed.
4. BMP Bottom Elevation is the bottom elevation of stone reservoir or base. For sloping BMPs the lowest elevation was used.

Groundwater Mounding Analysis - A1

Project Name: Belmont Hill School

Project Number: 151021201

Date: 6/3/2022

Coputed By: KH

Checked By: HH

Input Values

0.59	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.59	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
80.000	x	1/2 length of basin (x direction, in feet)
30.000	y	1/2 width of basin (y direction, in feet)
14.50	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

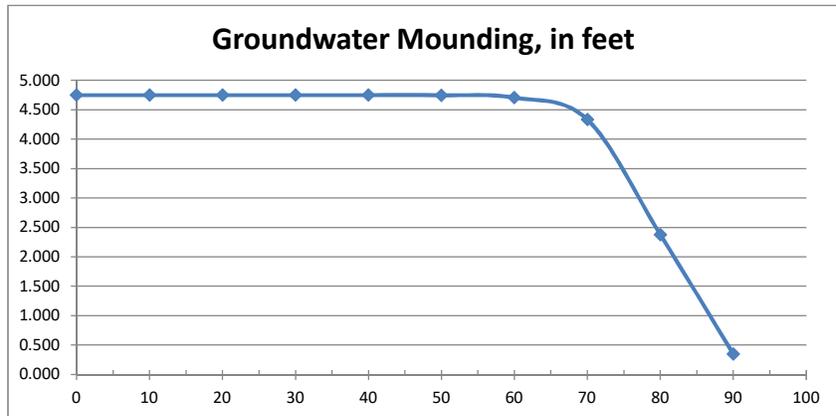
14.748	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.748	$\Delta h(\max)$	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Distance from
center of basin in x
direction, in feet

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.748	0
4.748	10
4.748	20
4.748	30
4.748	40
4.746	50
4.706	60
4.332	70
2.376	80
0.346	90



Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Groundwater Mounding Analysis - B1

Project Name: Belmont Hill School

Project Number: 151021201

Date: 6/3/2022

Coputed By: KH

Checked By: HH

Input Values

0.39	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.39	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
70.000	x	1/2 length of basin (x direction, in feet)
160.000	y	1/2 width of basin (y direction, in feet)
15.60	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

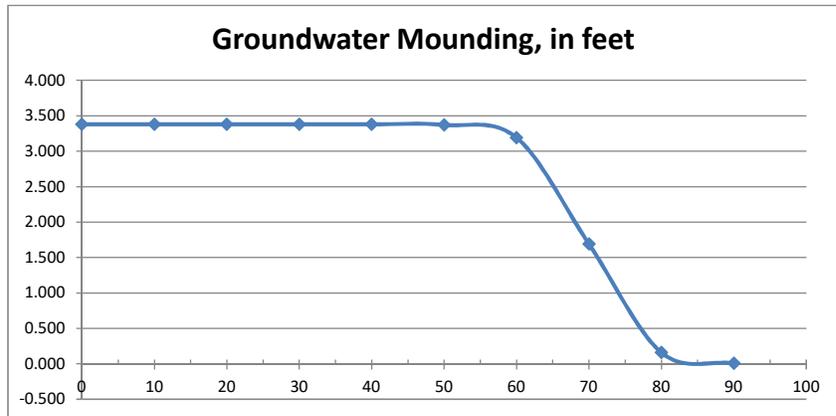
13.380	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.380	$\Delta h(\max)$	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Distance from
center of basin in x
direction, in feet

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.380	0
3.380	10
3.380	20
3.380	30
3.380	40
3.371	50
3.190	60
1.691	70
0.158	80
0.006	90



Re-Calculate Now



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Groundwater Mounding Analysis - B3

Project Name: Belmont Hill School

Project Number: 151021201

Date: 6/3/2022

Coputed By: KH

Checked By: HH

Input Values

0.80	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.80	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
37.000	x	1/2 length of basin (x direction, in feet)
16.500	y	1/2 width of basin (y direction, in feet)
15.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

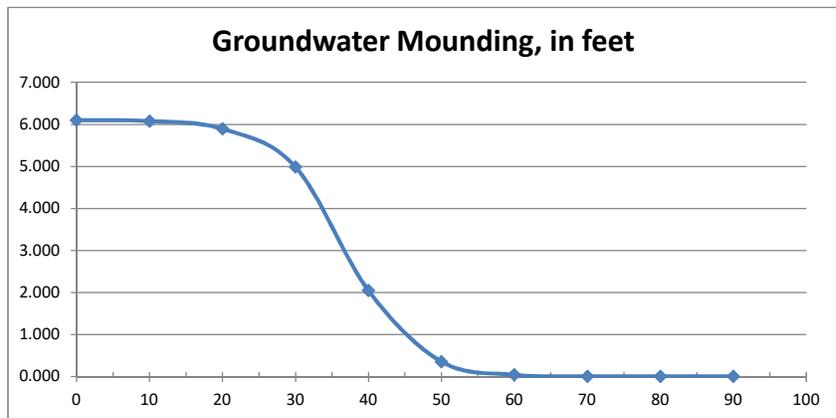
16.098	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
6.098	$\Delta h(\max)$	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Distance from
center of basin in x
direction, in feet

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
6.098	0
6.075	10
5.891	20
4.986	30
2.044	40
0.352	50
0.037	60
0.004	70
0.002	80
0.002	90



Re-Calculate Now



Disclaimer

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Groundwater Mounding Analysis - B4

Project Name: Belmont Hill School

Project Number: 151021201

Date: 6/3/2022

Coputed By: KH

Checked By: HH

Input Values

0.80	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.80	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
125.000	x	1/2 length of basin (x direction, in feet)
12.000	y	1/2 width of basin (y direction, in feet)
12.60	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

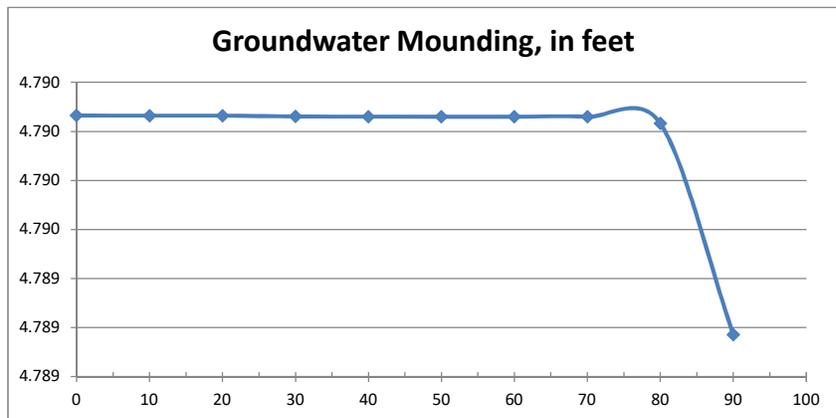
14.790	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.790	$\Delta h(\max)$	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Distance from
center of basin in x
direction, in feet

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.790	0
4.790	10
4.790	20
4.790	30
4.790	40
4.790	50
4.790	60
4.790	70
4.790	80
4.789	90



Re-Calculate Now



Disclaimer

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Groundwater Mounding Analysis - D1

Project Name: Belmont Hill School

Project Number: 151021201

Date: 6/3/2022

Coputed By: KH

Checked By: HH

Input Values

0.94	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.94	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
42.000	x	1/2 length of basin (x direction, in feet)
15.000	y	1/2 width of basin (y direction, in feet)
12.70	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

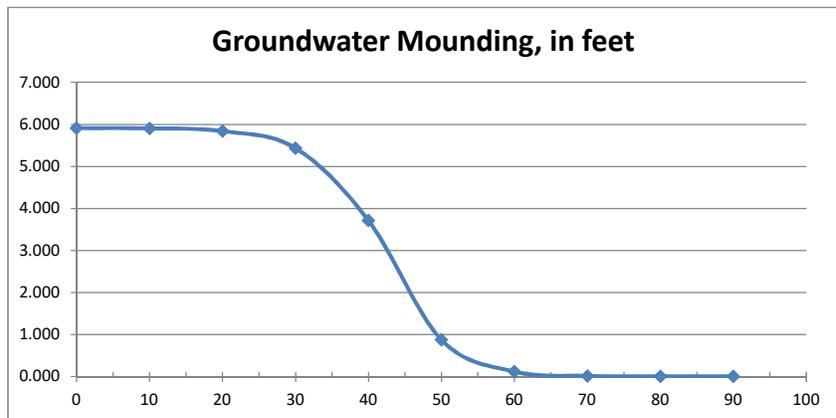
15.910	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
5.910	$\Delta h(\max)$	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Distance from
center of basin in x
direction, in feet

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
5.910	0
5.904	10
5.838	20
5.433	30
3.711	40
0.871	50
0.114	60
0.011	70
0.003	80
0.002	90



Re-Calculate Now



Disclaimer

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APPENDIX H

Long Term Pollution Prevention,
Operations and Maintenance Plan

Stormwater Operation and Maintenance Plan Belmont Hill School, Belmont, MA

Long Term Pollution Prevention Operation and Maintenance Plan

The purpose of this Long Term Pollution Prevention Operation and Maintenance Plan (“O&M”) is to provide project specific information related to the long term operation, maintenance, inspection, documentation, and performance of the structural and non-structural stormwater features. Regular inspection and maintenance of the stormwater management system is necessary to ensure proper operation of the system. The following O&M has been prepared to ensure the proposed system functions as intended. This O&M plan identifies maintenance procedures, schedules, and responsible parties.

The Long Term Pollution Prevention Operation and Maintenance Plan has been compiled in general accordance with Federal, State, and Local requirement in addition to stormwater best management practices (“BMPs”).

Responsible Parties

Jay Bounty, CFO of Belmont Hill School, or any successor of, shall be the party responsible for implementing this O&M plan.

Jay Bounty, CFO
Belmont Hill School
350 Prospect Street
Belmont, MA 02478

Estimated Annual Costs

The estimated annual cost for the implementation of this plan is **\$5,000**.

Stormwater Operation and Maintenance Procedures

Procedures are obtained from the Massachusetts Stormwater Handbook. These procedures are for all structural and non-structural BMPs and are intended to eliminate or reduce the long term soil erosion and degradation of stormwater features following construction completion. The inspection and successful implementation of all stormwater measures, shall be the Property Manager’s responsibility. The Property Manager is responsible for training employees to perform O&M and to provide ongoing training as needed in response to staff changes. Implement employee training program and hold session at least once a year.

Stormwater Management Plan Overview

Stormwater runoff is managed on site through the use of an underground closed pipe network with deep sump catch basins, roof leaders, proprietary hydrodynamic separators, vegetated swales, underground detention systems, and permeable pavement.

**Stormwater Operation and Maintenance Plan
Belmont Hill School, Belmont, MA**

Structural Pretreatment BMPs

Deep Sump Catch Basin

Activity	Frequency
Inspect units	Four times per year
Clean units	Four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.

Proprietary Hydrodynamic Separator – Downstream Defender®

Activity	Frequency
Inspect every six months during the first year of installation to determine rate of sediment and floatables accumulation; inspect every 6 months after the first year of installation.	Biannually
Remove captured floatables and oil with a skimmer and pole; sump-vac if needed.	Annually; ASAP following a spill in drainage area
Remove accumulated sediment with a commercially or municipally owned sump-vac if clean-out is less than 18 inches upon inspection.	As needed, see manufacturer information

- **Refer to attached Downstream Defender® Operation and Maintenance Manual procedures for 4' diameter structure.**

Proprietary Hydrodynamic Separator – First Defense®

Activity	Frequency
Inspect every six months during the first year of installation to determine rate of sediment and floatables accumulation; inspect every 6 months after the first year of installation.	Biannually
Remove captured floatables and oil with a skimmer and pole; clean out sump with sump-vac to remove sediment and floatables.	Annually; ASAP following a spill in drainage area

- **Refer to attached First Defense® Operation and Maintenance Manual procedures for 3' diameter structure.**

Permeable Pavement

Activity	Frequency
Monitor to ensure that the paving surface drains properly after storms.	As needed
For porous asphalts and concretes, clean the surface using power washer to dislodge trapped particles and then vacuum sweep the area. For paving stones, add joint material (sand) to replace material that has been transported.	As needed
Inspect the surface annually for deterioration	Annually
Assess exfiltration capability at least once a year. When exfiltration capacity is found to decline, implement measures from the Operation and Maintenance Plan to restore original exfiltration capacity.	As needed, but at least once a year
Reseed pavers to fill in bare spots	As needed

- **No winter sanding shall be conducted on the porous asphalt surface. Salt use shall be minimized during winter months.**

Stormwater Operation and Maintenance Plan

Belmont Hill School, Belmont, MA

Conveyance BMPs

Vegetated Swale

Activity	Frequency
Inspect swales to make sure vegetation is adequate and slopes are not eroding. Check for rilling and gullyng. Repair eroded areas and revegetate.	Monthly during the first six months after construction; biannually thereafter
Mow dry swales. Wet swales may not need to be mowed depending on type of vegetation.	As needed
Remove sediment and debris manually.	Annually, at least
Reseed.	As needed

Roof Drain Leaders

Activity	Frequency
Ensure roof and roof drainage system is kept clean and free of debris.	Routinely, as needed.
Clean gutter and downspouts.	Annually

Underground Structural BMPs

Underground Infiltration/Detention Systems - RTank®

Activity	Frequency
Inspect tank and all stormwater pre-treatment features associated with tank function.	Biannually
Remove sediment, trash and other trapped pollutants.	As required.
Perform back-flushing of system once sediment accumulation has reached 6 inches, see manufacturer's manual.	As required

- **Refer to attached RTank® Operation and Maintenance manual procedures for R-Tank Triple Unit.**

Non-Structural Pretreatment BMPs

Street Sweeping

Activity	Frequency
High Efficiently Vacuum	Quarterly Average, with sweeping scheduled primarily in spring and fall
Regenerative Air Sweeper	Quarterly Average, with sweeping scheduled primarily in spring and fall
Mechanical Sweeper	Monthly Average, with sweeping scheduled primarily in spring and fall

Material and Equipment Storage

Material and equipment storage shall be done in a safe and orderly fashion. All debris and waste shall be collected and disposed of offsite in a legal manner in accordance with local and

Stormwater Operation and Maintenance Plan Belmont Hill School, Belmont, MA

federal guidelines. The temporary storage of snow may be permitted in accordance with the locally approved permit plans in the pre-determined locations. Snow may not be disposed of in or around wetland. The wetlands, and wetlands buffer zones are shown in the attached permit drawings.

Spill Control & Containment

The following measures must be implemented to minimize, control, and contain spills:

- Store chemicals inside, when applicable
- Pick up litter
- The spill shall be contained as close to the source as possible with a dike of absorbent materials from the spill cleanup equipment (such as socks, pads, pillows, or "pigs"). Additional dikes must be constructed to protect swales or other stormwater conveyances or streams. A cover or dike will shall protect any other stormwater structures such as catch basins.
- Implement employee training program and hold session at least once a year.
- Identify spill control team. The name(s) of the responsible spill personnel will be posted on-site.
- Each employee will be instructed that all spills are to be reported to the spill prevention and cleanup coordinator. The supervisor will assess the incident and initiate proper containment and response procedures immediately upon notification. Workers should avoid direct contact with spilled materials during the containment procedures.
- In the event of a release of oil or hazardous waste to the storm drainage system, the person shall immediately notify the Conservation Commission and the Town's Fire and Public Works Departments and the Board of Health.
- In the event of a release of a non-hazardous pollutant to the storm drainage system, the reporting person shall notify the Conservation Commission in person or by phone no later than 4:00 p.m. of the next business day.
- Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the Conservation Commission within three business days of the phone notice.
- If the discharge of prohibited materials emanates from a commercial or industrial facility, the facility owner or operator of the facility shall retain on-site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained in accordance with the Massachusetts Public Records Law.

Pesticides and Fertilizers

- Pesticide/Herbicide Usage – No pesticides are to be used unless a single spot treatment is required for a specific control application.
- Fertilizer usage should be avoided. If deemed necessary, slow release fertilizer should be used. Fertilizer may be used to begin the establishment of vegetation in bare or damaged areas, but should not be applied on a regular basis unless necessary

**Stormwater Operation and Maintenance Plan
Belmont Hill School, Belmont, MA**

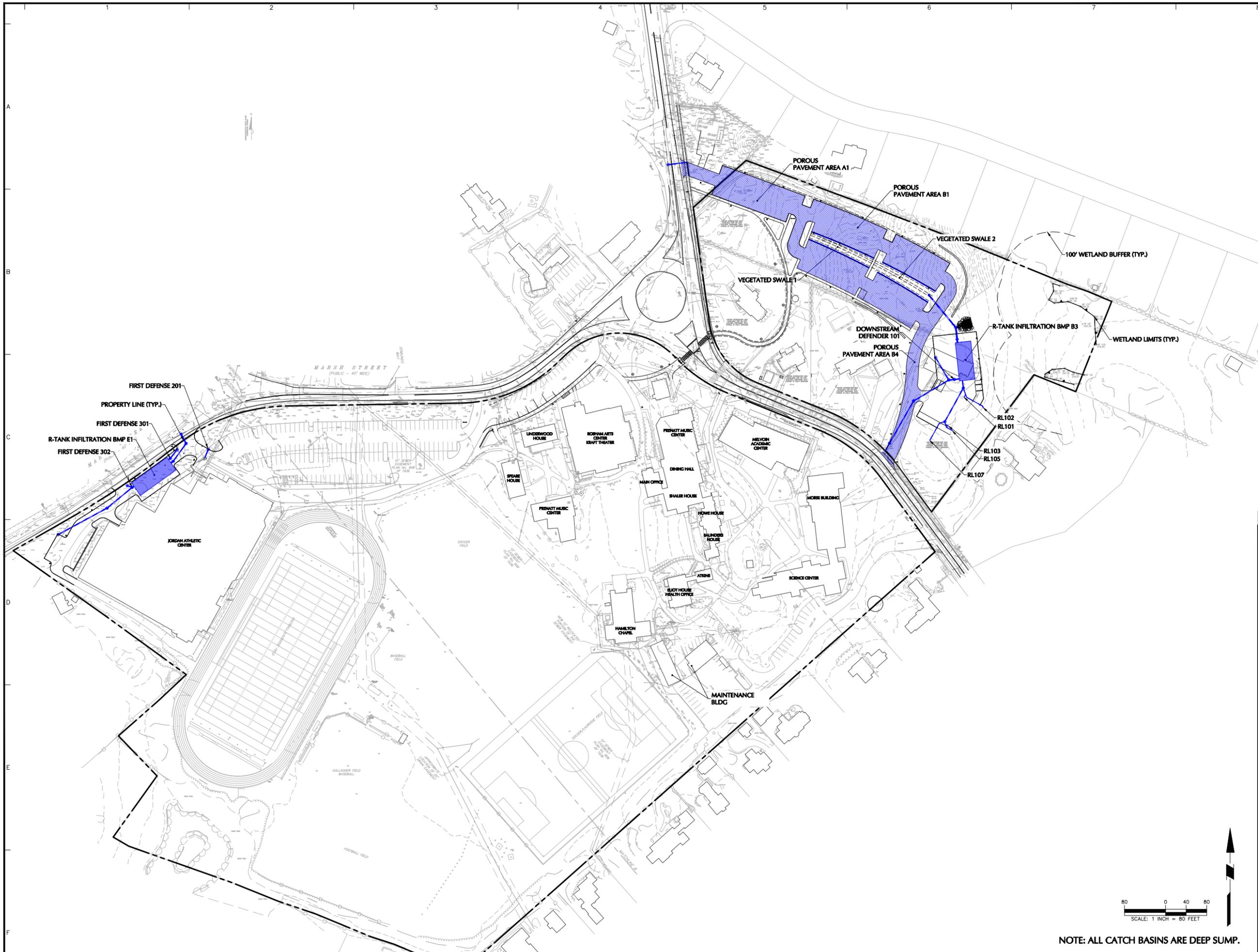
STORMWATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE CHECKLIST

Belmont Hill School, Belmont, MA Date:					Time:	Inspector: Site Conditions:
Structural Best Management Practice	Schedule	Action	Date Completed	Completed By	Satisfactory? Yes (Y) or No (N)	Comments or Corrective Measures Taken
Deep Sump Catch Basin						
Inspect Units	4x a year	Inspect			Y N	
Clean Units	4x a year, at least	Clean			Y N	
Proprietary Hydrodynamic Separator (Downstream Defender WQS-101)						
Inspect per Manufacture Recommendations - See manufacturer maintenance guide	2x a year	Inspect			Y N	
Remove Sediments and Pollutants	See manufacturer specifications	Inspect			Y N	
Proprietary Hydrodynamic Separator (First Defense WQS-201, WQS-301, WQS-302)						
Inspect per Manufacture Recommendations - See manufacturer maintenance guide	2x a year	Inspect			Y N	
Remove Sediments and Pollutants	See manufacturer specifications	Inspect			Y N	

Checklist continued on next page

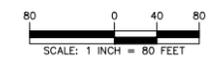
**Stormwater Operation and Maintenance Plan
Belmont Hill School, Belmont, MA**

Best Management Practice	Schedule	Action	Date Completed	Completed By	Satisfactory? Yes (Y) or No (N)	Comments or Corrective Measures Taken
Porous Pavement (Porous Pavement Area A1, B1, B4)						
Monitor to ensure surface drains adequately after storms	As needed	Monitor			Y N	
Clean surface using power washer and vacuum sweep extents of pavement area	As needed	Clean			Y N	
Inspect surface for deterioration	Annually	Inspect			Y N	
Assess exfiltration capability	Annually, more frequently as needed	Inspect			Y N	
Roof Drain Leaders (RL101, RL102, RL103, RL105, RL107)						
Ensure roof and roof drainage system is kept clean and free of debris	Routinely, as needed	Inspect/ Clean			Y N	
Clean gutter and downspouts	Annually	Clean			Y N	
Underground Detention/Infiltration System (RTank Infiltration BMP E1 & B3)						
Inspect inlet and outlet control structures	Annually	Inspect			Y N	
Remove sediment, trash and other pollutants	Annually	Clean			Y N	
Depth to Bottom: _____ Depth to Sediment: _____ Sediment Depth: _____						
Street Sweeping						
High Efficient Vacuum	Quarterly	Clean			Y N	
Regenerative Air Sweeper	Quarterly	Clean			Y N	
Mechanical Sweeper	Monthly	Clean			Y N	



Date	Description	No.
Revisions		
Signature		Date
LANGAN Langan Engineering and Environmental Services, Inc. 888 Boylston Street, Suite 510 Boston, MA T: 617.824.9100 F: 617.824.9101 www.langan.com		
Project		
BELMONT HILL SCHOOL BELMONT MIDDLESEX COUNTY MASSACHUSETTS		
Drawing Title		
STORMWATER MANAGEMENT FEATURES		
Project No.	Figure	
151021201	FIG. 1 Sheet 1 of 1	
Date		
06/01/2022		
Drawn By		
JNW		
Checked By		
HH		

NOTE: ALL CATCH BASINS ARE DEEP SUMP.



Project No. 151021201

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APPENDIX I

Illicit Discharge Compliance Statement

ILLICIT DISCHARGE COMPLIANCE STATEMENT

RESPONSIBILITY:

The Owner is responsible for ultimate compliance with all provisions of the Massachusetts Stormwater Management Policy and responsible for identifying and eliminating illicit discharges (as defined by USEPA).

OWNER NAME: Belmont Hill School

ADDRESS: 250 Prospect Street, Belmont, MA 02478

TEL. NUMBER: (617) 484-4410

OWNER'S COMPLIANCE STATEMENT:

To the best of my knowledge, the attached plans, computations and specifications meet the requirements of Standard 10 of the Massachusetts Stormwater Handbook regarding illicit discharges to the stormwater management system and that no detectable illicit discharges exist on the site. All documents and attachments were prepared under my direction and qualified personnel gathered and evaluated the information submitted, to the best of my knowledge.

Included with this statement are site plans, drawn to scale, that identify the location of systems for conveying stormwater on the site and show that these systems do not allow the entry of any illicit discharges into the stormwater management system. The plans also show any systems for conveying wastewater and/or groundwater on the site and show that there are no connections between the stormwater and wastewater systems.

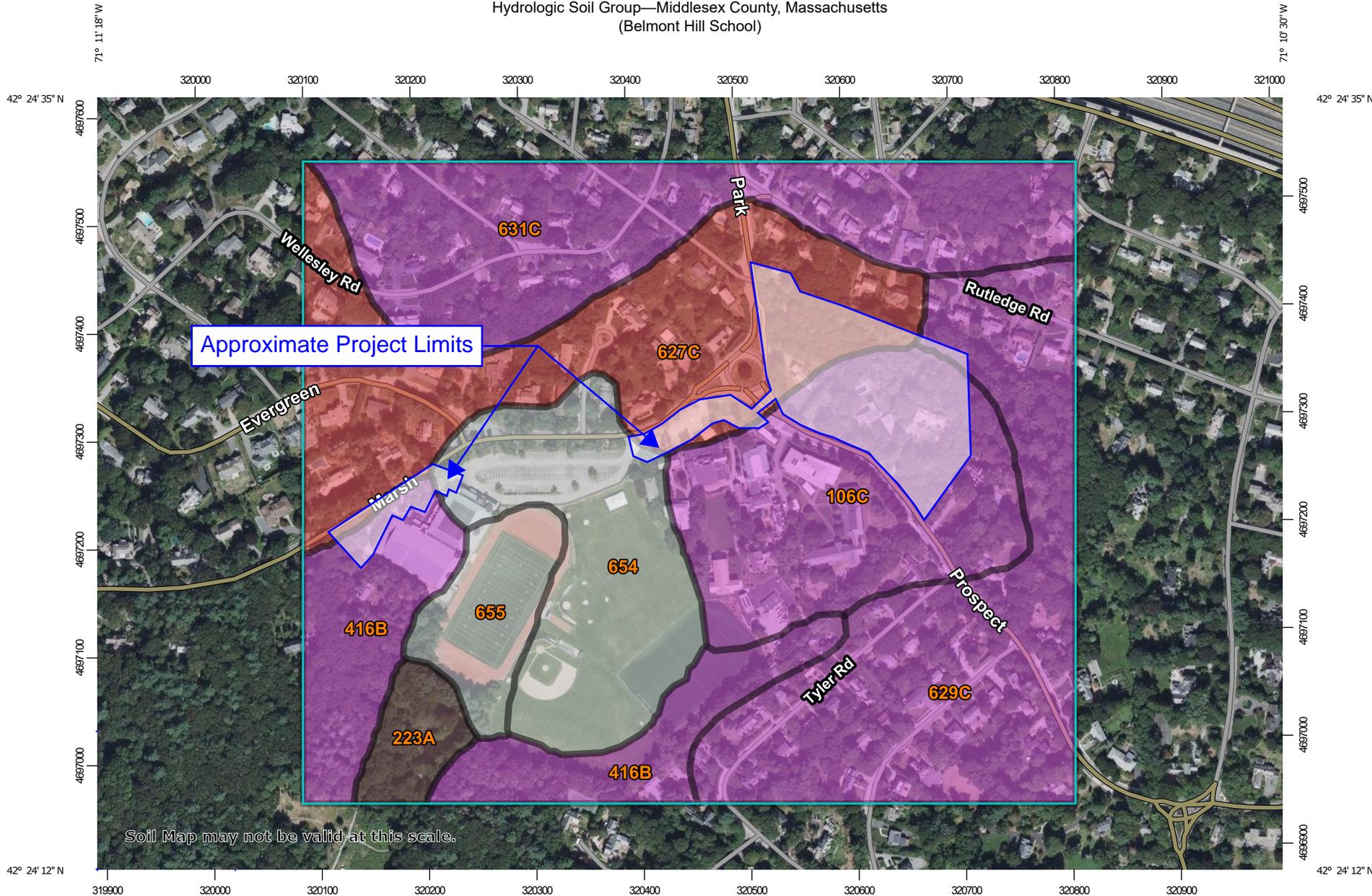
For a redevelopment project (if applicable), all actions taken to identify and remove illicit discharges, including without limitation, visual screening, dye or smoke testing, and the removal of any sources of illicit discharges to the stormwater management system are documented and included with this statement.

Signature _____

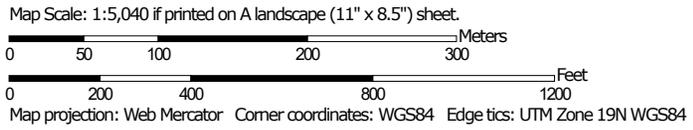
APPENDIX J

Geotechnical Evaluations

Hydrologic Soil Group—Middlesex County, Massachusetts
(Belmont Hill School)



Soil Map may not be valid at this scale.



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.

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: Middlesex County, Massachusetts
 Survey Area Data: Version 21, Sep 2, 2021

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

Date(s) aerial images were photographed: Aug 13, 2020—Sep 15, 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
106C	Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes	A	15.9	14.9%
223A	Scio very fine sandy loam, 0 to 3 percent slopes	B/D	2.4	2.2%
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony	A	11.8	11.1%
627C	Newport-Urban land complex, 3 to 15 percent slopes	D	20.2	19.0%
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	A	20.8	19.5%
631C	Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky	A	18.5	17.4%
654	Udorthents, loamy		12.4	11.7%
655	Udorthents, wet substratum		4.3	4.1%
Totals for Area of Interest			106.3	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

100 Cambridge Street, Suite 1310 Boston, MA 02114 T: 617.824.9100 F: 617.824.9101

To: Jay Bounty (Belmont Hill School)

From: Clay Patterson, Tim Light (Langan)

Info: Kelly Durfee Cardoza (Avalon); Frank Holmes, Hilary Holmes (Langan)

Date: 14 January 2022

Re: Geotechnical Exploration and Infiltration Test Results
Belmont Hill School
Belmont, Massachusetts
Langan Project No.: 151021202

Langan has prepared this memorandum to present the results of our geotechnical exploration and infiltration test results that were completed for the proposed master plan development at Belmont Hill School (BHS). The school address is 350 Prospect Street in Belmont, Massachusetts. Our geotechnical services were performed in general accordance with our authorized proposals dated 20 April, 13 October, and 2 December 2021.

PROJECT UNDERSTANDING

The BHS campus is in the northern part of Belmont, Massachusetts, near the intersection of Marsh Street, Park Avenue, and Prospect Street. The currently considered improvements involve three areas on the BHS campus:

“East Campus” – This area consists of several parcels of developed (residential) and undeveloped land north of Prospect Street that BHS owns.

“East Campus Maintenance Area” – This area consists of the 283 Prospect Street property that BHS owns. The property is also north of Prospect Street, and is at the east end of the East Campus area.

“Jordan Athletic Center (JAC) Parking Lot” – This area consists of the existing parking area near the JAC in the western part of the BHS campus

East Campus and East Campus Maintenance Area

Our understanding of the development plans for the East Campus, including the East Campus Maintenance Area, is based on our coordination with the project team, including designLAB architects and Reed Hilderbrand Landscape Architects, and the conceptual narrative for the maintenance building by RFS Engineering dated 19 November 2021. The development plan includes a surface parking lot and a Facilities Site with surface parking, material storage, vehicle storage, and a 2-story building with a 4,500 square-foot footprint located on the 283 Prospect Street property. The facilities building will include offices, a wood shop, and three garage bays.

MEMO

Geotechnical Exploration and Infiltration Test Results
Belmont Hill School
Belmont, Massachusetts
Langan Project No.: 151021202
14 January 2022 - Page 2 of 14

We understand that the project team is considering a partial basement for part of the facilities building. Associated improvements at the East Campus will include new utilities and stormwater management features.

JAC Parking Lot

Additional improvements associated with the master plan development are also proposed near the Jordan Athletic Center, in and around the existing parking lot area. These improvements include modified and expanded parking areas, stormwater management features, and pedestrian and vehicular access routes in and around the current parking area.

The proposed development must be in conformance with Belmont's Stormwater Management and Erosion Control Bylaw. One aspect of the Bylaw is a requirement to have no net increase in stormwater runoff volume. Infiltration of stormwater will be required in order to control the volume of runoff volume because the project will include replacing wooded areas (East Campus and Maintenance Area) and landscaped areas (JAC Parking Lot) with paved parking and access road areas.

SITE DESCRIPTION

Descriptions of the existing East Campus, East Campus Maintenance Area, and JAC Parking Lot sites are included in the following subsections.

East Campus

Our understanding of the East Campus site is based on a survey titled "Topographic Plan" prepared by Precision Land Surveying, Inc. dated 23 December 2020 and revised 16 December 2021, and our site visits on 1, 8, and 9 June 2021. The East Campus site is comprised of wooded areas and several residential structures with associated driveway and lawn areas. A driveway leading to the site of a demolished house enters the northern part of East Campus from Park Avenue. Limited wetland areas have been delineated in the southeastern part of the site.

Existing grades are typically from about elevation (el.) +265 to +275 feet; all elevations included herein reference the Town of Belmont Datum per the available topographic survey. Localized areas slope up as high as el. +280 feet, and the eastern part of the site slopes down to about el. +215 feet near the wetland area. The topographic survey identifies several rock outcrops at about el. +272 to +280 feet in the northern, undeveloped part of the site.

East Campus Maintenance Area

Our understanding of the East Campus Maintenance Area site is based on the available topographic survey, and our site visits on 4 through 6 January 2022. The East Campus

Maintenance Area site is comprised of wooded areas, a residential structure (#283 Prospect Street) with an associated driveway from Prospect Street, and lawn and garden areas. Existing grades are typically from about el. +260 to +264 feet around the 283 Prospect Street house and yard and garden areas. Beyond the house and yard areas, grades blend into the overall slope of East Campus, which slope down from the west to the east. A small hill, with maximum elevation of el. +272 feet is in the southern part of the property near Prospect Street. During our site visits, we observed bedrock outcrops at several parts of the hill.

JAC Parking Lot

Our understanding of the JAC Parking Lot site is based on the available topographic survey, and our site visits on 15, 16, and 17 October 2021. The JAC Parking Lot site is predominantly comprised of existing paved parking and driveway areas and associated landscaped areas. Other improvements include nearby athletic fields, the Jordan Athletics Center building, and paved or gravel walking paths. The JAC Parking Lot site is generally level with existing grades typically between about el. +249½ and +254½ feet, sloping up to about el. +257½ feet near the entrance on Marsh Street. Grades on the west side of Jordan Athletic Center building generally slope up from about el. +252 feet at the parking lot to about el. +262 feet at the southwest corner of the building. Several utility valves, poles, and manholes are also identified on the topographic survey in and around the JAC Parking Lot area.

SUBSURFACE EXPLORATION AND SUBSURFACE CONDITIONS

Langan performed subsurface explorations to evaluate subsurface soil, rock, and groundwater conditions at accessible locations within the proposed improvement areas at the East Campus, East Campus Maintenance Area, and the JAC Parking Lot sites. Our subsurface investigation program consisted of the following explorations:

- East Campus: eight test pits and seven infiltration tests
- East Campus Maintenance Area: nine test pits, five infiltration tests, and two borings
- JAC Parking Lot: nine test pits and eight infiltration tests

The approximate test pit, boring, and infiltration test locations are included on Figure 1 (Exploration Location Plan – East Campus and Maintenance Area) and Figure 2 (Exploration Location Plan – JAC Parking Lot), as appropriate.

Details about our subsurface exploration programs and the subsurface conditions encountered are described in the following subsections.

Test Pits

East Campus

Eight test pits, designated TP-1 through TP-8, were excavated in the northern part of the East Campus site by F.E. French Construction, Inc., (FE French) of Belmont, Massachusetts, on 8 and 9 June 2021, under Langan's full-time observation. The test pits were excavated using a CAT 307C excavator to depths of about 3½ to 8 feet below the existing ground surface; the bottoms of the test pits were between about el. +256 and +271½ feet. Upon completion, the test pits were backfilled with excavated material that was placed in about 1- to 2-foot-thick loose lifts and compacted with the bucket of the excavator. Logs and photographs of the test pits are included in Appendix A and Appendix B, respectively.

East Campus Maintenance Building

Nine test pits, designated TP-301 through TP-309, were excavated in the East Campus Maintenance Area site by FE French, on 4 and 5 January 2022, under Langan's full-time observation. The test pits were excavated using a CAT 303.5E excavator to depths of about 2 to 8½ feet below the existing ground surface; the bottoms of the test pits were between about el. +249 and +270 feet. Upon completion, the test pits were backfilled with excavated material that was placed in about 1- to 2-foot-thick loose lifts and compacted with the bucket of the excavator. Logs and photographs of the test pits are included in Appendix C and Appendix D, respectively.

JAC Parking Lot

Nine test pits, designated TP-201 through TP-209, were excavated in the JAC Parking Lot site by FE French on 16 and 17 October 2021, under Langan's full-time observation. The test pits were excavated using a CAT 306 excavator to depths of about 5½ to 8½ feet below the existing site grades; the bottoms of the test pits were between about el. +241¼ and +254 feet. Upon completion, test pits TP-201 through TP-203, which were in the existing parking lot, were backfilled with the excavated material that was placed in about 1-foot-thick loose lifts and compacted with the bucket of the excavator to a depth of about 4 feet below the adjacent grades. These test pits were then backfilled with about 3 feet of excavated material and 1 foot of imported dense-graded aggregate base material that were placed in 1-foot-thick loose lifts and compacted with a large vibratory plate compactor. The compacted backfill material was observed to be firm and stable at the time of placement. Test pits TP-204 through TP-209, which were outside of the parking lot area, were backfilled with the excavated material that was placed in about 1-foot-thick loose lifts and compacted with the bucket of the excavator. Logs and photographs of the test pits are included in Appendix E and Appendix F, respectively.

MEMO

Note, additional compaction efforts will be required at the backfilled test pit areas (except for TP-201 through TP-203, which were backfilled with compacted fill) during grading for the proposed parking areas.

Borings

Two borings, designated LB-01 and LB-02, were completed on 6 January 2022 by Geologic Subsurface Exploration, Inc., of Norfolk, Massachusetts under Langan's full-time observation in the East Campus Maintenance Area. The borings were advanced using an Acker Scout track-mounted drill rig using mud rotary, roller bit, and rock coring techniques. The borings were advanced to depths of about 10½ to 16 feet below the existing grades, with bottom of both borings at about el. +245 feet.

During drilling, standard penetration test (SPT) N-values¹ were recorded and soil samples were typically obtained continuously to a depth of about 12 feet. Disturbed soil samples were obtained using a standard 2-inch-outer-diameter split-spoon sampler driven by a 140-pound donut hammer in accordance with ASTM D1586, Standard Penetration Test. Continuous rock cores were advanced through boulders or bedrock at both borings using an NX-size core barrel.

Recovered soil samples were visually examined and classified in the field in general accordance with the Unified Soil Classification System (USCS). Soil and rock classifications, N-values, and other field observations were recorded on our boring logs included in Appendix G.

Groundwater Observation Well

One of the borings completed in the East Campus Maintenance Area was converted to temporary groundwater observation well, designated LB-02(OW). The bottom of the well screen extends about 16 feet below the existing site grades, corresponding to about el. +245 feet. The groundwater observation well construction log is provided in Appendix H.

Laboratory Testing

Selected soil samples obtained from test pits TP-05, TP-202, TP-206, TP-207, and TP-301 through TP-305 were submitted to a geotechnical laboratory to confirm the visual classification and to determine index properties (physical and mechanical). Laboratory tests including grain-size analyses, with hydrometer testing, USDA textural classification, California Bearing Ratio (CBR), and moisture content were performed to assist with the geotechnical and stormwater

¹ The SPT is an in situ testing technique used to infer soil relative density and consistency. The SPT N-value is defined as the number of blows required to drive a 2-inch-diameter split-barrel sampler 12 inches after an initial penetration of 6 inches using a 140-pound hammer falling freely from a height of 30 inches.

evaluations for the site; the lab test results from test pits TP05, TP-202, TP-206, and TP-207 are included in Appendix I. The lab test result from test pits TP-301 through TP-305 are still pending.

Subsurface Conditions – East Campus

The East Campus site is generally blanketed by a layer of topsoil or fill. Where fill was encountered, it is underlain by a layer of buried topsoil. A layer of sandy silt was encountered below the surficial material at all test pits, and is underlain by sand. Bedrock was encountered below the sand at several of the test pits. Groundwater was not encountered during our subsurface exploration. Additional details about the subsurface materials encountered is included below in general order of increasing depth.

Surficial Topsoil – An about 6- to 10-inch-thick layer of topsoil was encountered across the site at every test pit except TP-05. The topsoil layer generally consists of dark brown silt with varying amounts and gradations of sand and organic material.

Fill – A localized, about 2½-foot-thick layer of fill was encountered at the ground surface in test pit TP-05. The bottom of the fill corresponds to about el. +262½ feet, where encountered. The fill generally consists of re-worked sand that is greyish brown to tan fine sand with varying amounts of silt, coarse to fine gravel, cobbles, boulders, bricks, concrete fragments, tile fragments, and roots.

Buried Topsoil – A discontinuous, about 6-inch-thick layer of buried topsoil was encountered below the fill in test pit TP-05. The bottom of the top soil corresponds to about el. +262 feet. The buried topsoil layer generally consists of dark brown silt with trace amounts of fine sand and organic debris.

Sandy Silt – An about 8-inch-thick to 3½-foot-thick layer of sandy silt was encountered below the topsoil in all test pits. The bottom of the sandy silt corresponds to about el. +258½ to +275 feet. The sandy silt layer generally consists of brown sandy silt with varying amounts of gravel and trace amounts of cobbles, boulders, and roots.

Sand – An about 6-inch-thick to 5½-foot-thick layer of sand was encountered in all test pits. The bottom of the sand layer corresponds to about el. +256 to +271½ feet. Most of the test pits were terminated within the sand layer; therefore, the bottom of this layer may be deeper than reported herein and on the logs. The sand generally consists of gray coarse to fine sand with varying amounts of silt, gravel, cobbles, and boulders.

MEMO

Bedrock – Bedrock was encountered about 3½ to 7½ feet below existing site grades (i.e., about el. + 256 to +258 feet) in test pits TP-2 through TP-4. These test pits were terminated upon encountering bedrock.

Groundwater – Groundwater was not encountered to the maximum depths explored (8 feet), but should be expected to fluctuate with seasonal activity, precipitation, etc.

See the logs of the East Campus test pits in Appendix A and corresponding photos in Appendix B for additional details about the encountered subsurface conditions.

Subsurface Conditions – East Campus Maintenance Area

The East Campus Maintenance Area site is generally blanketed by a layer of topsoil or fill. Where fill was encountered at test pit TP-303, it is underlain by a layer of buried topsoil. A layer of sandy silt or silty sand was typically encountered below the surficial material, and is underlain by glacial till (predominantly sand with varying amounts of gravel). Weathered rock and bedrock were encountered below the glacial till at several of the test pits. Groundwater was not encountered to the maximum depths explored during our subsurface investigation. Additional details about the subsurface materials encountered is included below in general order of increasing depth.

Surficial Topsoil – An about 6- to 12-inch-thick layer of topsoil was encountered across the site at every test pit except TP-304. The topsoil layer generally consists of dark brown fine to medium sand with varying amounts of silt, clay, and organic material, and trace amounts of wood chips and fine gravel.

Fill – Localized, about 6-inch-thick to 5-foot-thick layers of fill were encountered at or near the ground surface in test pits TP-303 and TP-304, and in boring LB-02(OW) in the eastern part of the site. The bottom of the fill corresponds to about el. +255 to +257 feet, where encountered. The fill generally consists of re-worked sand that is gray to brown fine sand with varying amounts of silt, coarse to fine gravel, roots, wood chips, concrete debris, brick debris, glass debris, wire debris, and fabric debris.

Buried Topsoil – An about 6-inch-thick layer of buried topsoil was encountered below the fill in test pit TP-303. The bottom of the top soil corresponds to about el. +256½ feet. The buried topsoil layer generally consists of brown silty fine sand roots.

Silty Sand – An about 1¼- to 2½-foot-thick layer of silty sand was encountered below the topsoil or fill in all borings and test pits except test pit TP-303. The bottom of the silty sand layer corresponds to about el. +253 to +270 feet. The silty sand layer generally consists of light brown

MEMO

to brown sand with varying amounts of silt, fine to coarse gravel, and trace amounts of cobbles, boulders, and roots.

Glacial Till – An about 1½-foot-thick to greater than 8½-foot-thick layer of glacial till sand was encountered in all borings and test pits except test pit TP-306. The bottom of the sand layer corresponds to about el. +245 to +259 feet. Some of the borings and test pits were terminated within the glacial till layer; therefore, the bottom of this layer may be deeper than reported herein and on the logs. The glacial till generally consists of gray to brown coarse to fine sand with varying amounts of silt, coarse to fine gravel, cobbles, and boulders.

Weathered Rock – An about 6-inch-thick to 1½-foot-thick layer of weathered rock was encountered about 7 to 7½ feet below existing site grades (i.e., about el. + 249½ to +256 feet) in test pits TP-301 and TP-304. These test pits were both terminated within the weathered rock layer, so the layer may be thicker than reported herein. The weathered rock generally consists of gray coarse to fine sand with coarse to fine gravel and varying amounts of silt, cobbles, and boulders.

Bedrock – Bedrock was encountered about 2 inches to 11½ feet below existing site grades (i.e., about el. + 249½ to +272 feet) in test pits TP-302, TP-305, TP-306, TP-307, TP-309, and boring LB-02(OW). The test pits were terminated upon encountering bedrock. An about 3-foot-long rock core was recovered from boring LB-02 from depths of about 13 to 16 feet below existing site grades. The recovered bedrock core sample appears to consist of brown granodiorite from the Avalon Belt formation with a recovery (REC) of 97% and rock quality designation (RQD) of 44%. The sample of granodiorite has poor rock quality, with close fracture spacing, and moderate weathering.

Groundwater – Groundwater was not encountered to the maximum depths explored in the test pits (8½ feet) or borings (16 feet), but should be expected to fluctuate with seasonal activity, precipitation, etc.

See the logs of the East Campus Maintenance Area test pits in Appendix C and corresponding photos in Appendix D, and logs of the borings in Appendix G for additional details about the encountered subsurface conditions.

Subsurface Conditions – JAC Parking Lot

The JAC Parking Lot site is generally blanketed by a layer of topsoil or fill. Fill was encountered at the ground surface or below the topsoil in all test pits. Where encountered, the fill is underlain by either a layer of buried topsoil, silt, or sand. Bedrock was not encountered in any of the test pits at the JAC Parking Lot site. Groundwater was only encountered in test pit TP-201. Additional

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details about the subsurface materials encountered is included below in general order of increasing depth.

Surficial Topsoil – A surficial, about 3-inch-thick layer of topsoil was encountered in test pits TP-204, TP-205, TP-206, and TP-207. The topsoil generally consists of dark brown coarse to fine sand or silt with varying proportions of sand, silt, and roots, and a trace amount of clay.

Woodchip Fill – A layer of fill primarily composed of brown to dark brown woodchips with trace amounts of silt was encountered in test pit TP-209 at the ground surface. The woodchip fill was observed to be about 2½ feet thick. The bottom of the woodchip fill corresponds to about el. +259½ feet. The woodchips were observed in varying stages of decomposition.

Fill – A layer of sandy fill was encountered in all test pits below the topsoil, woodchips, or at the ground surface. The fill was observed to be about 16 inches to 8½ feet thick. The bottom of the fill corresponds to about el. +241¼ to +258½ feet. Test pits TP-202 and TP-207 were terminated within the fill layer; therefore, the bottom of the layer may be deeper than reported herein or on the logs. The fill generally consists of light brown to brown or grayish brown to gray coarse to fine sand with varying amounts of silt and coarse to fine gravel, and trace amounts of clay, cobbles, boulders, roots, and asphalt, brick, concrete, tile, ceramic, metal, wire, plastic, glass, and wood fragments and debris.

A discontinuous layer of fill containing coal ash was encountered in test pit TP-203. This about 6-inch-thick fill layer typically consisted of tan to white medium to fine sand with some silt and coal ash, and trace fine gravel and coal fragments.

The presence of assorted debris, such as asphalt, concrete, metal, and coal ash, potentially pose environmental considerations beyond the scope of this geotechnical study and should be further reviewed.

Buried Topsoil – A discontinuous, about 6- to 9-inch-thick layer of buried topsoil was encountered below the fill in test pits TP-201, TP-203, TP-208, and TP-209. The bottom of the buried top soil corresponds to about el. +243½ to +258 feet. The buried topsoil layer generally consists of dark brown silt with varying amounts and gradations of sand, some clay and organics, and trace amounts of wood fragments and roots.

Silt – A layer of silt was encountered below the fill or buried topsoil in test pits TP-201, TP-203, TP-206, and TP-209. The silt layer was observed to be about 1 to 3½ feet thick, and the bottom of the silt corresponds to about el. +242 to +256½ feet. Test pits TP-201 and TP-203 were terminated within the silt layer; therefore, the bottom of this layer may be deeper than reported

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herein and on the logs. The silt layer generally consists of light brown to brown silt with varying amounts and gradation of sand, and trace amounts of clay, gravel, and roots.

Sand – A layer of coarse to fine sand was encountered below the fill or silt in test pits TP-204, TP-205, TP-206, TP-208, and TP-209. The sand layer was observed to be about 2½ to 6 feet thick, and the bottom of the layer corresponds to about el. +244 to +254 feet. Test pits TP-204, TP-205, TP-206, TP-208, and TP-209 were terminated within the sand layer; therefore, the bottom of the layer may be deeper than reported herein and on the logs. The sand generally consists of light brown or grayish brown to gray coarse to fine sand with varying amounts of silt and cobbles, and trace amounts of clay, boulders, and roots.

Bedrock – Bedrock was not encountered at the exploration locations to depths of about 5½ to 8½ feet below the existing site grades.

Groundwater – Groundwater was encountered in test pit TP-201 at a depth of about 8 feet below existing grades (i.e., about el. +242½ feet). Groundwater should be expected to fluctuate with seasonal activity, precipitation, etc.

See the logs of the JAC Parking Lot test pits in Appendix E and corresponding photos in Appendix F for additional details about the encountered subsurface conditions.

INFILTRATION TEST RESULTS

Infiltration tests performed at the East Campus, East Campus Maintenance Area, and JAC Parking Lot sites are summarized below. Field infiltration tests were performed with constant head infiltration testing methods using the Guelph Permeameter in general accordance with ASTM D 5126. A summary of the observed stabilized infiltration rates and the estimated field-saturated hydraulic conductivity values are presented in Tables 1 through 3. Detailed summaries of each infiltration test are included in Appendix J (East Campus), Appendix K (East Campus Maintenance Area), and Appendix L (JAC Parking Lot). Where available, the USDA textural classification and corresponding Rawl's rate is also included in Tables 1 through 3; see Appendix I for additional details about the laboratory test results.

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Geotechnical Exploration and Infiltration Test Results
 Belmont Hill School
 Belmont, Massachusetts
 Langan Project No.: 151021202
 14 January 2022 - Page 11 of 14

Table 1: Infiltration Test Results Summary for the East Campus

Location (Test ID)	Approx. Surface El. (feet) ¹	Test Depth (feet)	Approx. Test El. (feet) ¹	Steady State Rate (A) ⁴ (in/hr)	Steady State Rate (B) ⁴ (in/hr)	Field Saturated Hydraulic Conductivity K_{sat} (in/hr)	USDA Textural Classification [Rawls Rate]	Material Type
TP-2 (IT-2)	261.5	3 to 3.5 ³	258	64.4 ²	14.2	Invalid Test ^{2,3}	Not Tested	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-3 (IT-3)	261	4 to 4.6	256.4	26.0	37.8	0.80	Not Tested	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-4 (IT-4)	265.5	1.5 to 2.2	263.3	16.5	35.5	0.61	Not Tested	Brown fine sandy SILT, some medium sand, trace coarse to fine gravel, trace cobbles, trace boulders, trace roots (moist)
TP-5 (IT-5)	265	5.5 to 6	259	7.1	21.3	0.63	Sandy Loam (Group B) [1.02 in/hr]	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-6 (IT-6)	272	3 to 3.5	268.5	18.9	40.2	1.37	Not Tested	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-7 (IT-7)	272.5	4 to 4.5	268	5.9	11.8	0.59	Not Tested	Gray coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-8 (IT-8)	277.5	4 to 4.5	273	11.8	16.5	0.39	Not Tested	Gray coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders (moist)

Notes:

1. All elevations refer to the Town of Belmont Datum.
2. This test did not properly equilibrate; therefore, the reported data likely does not accurately represent the infiltration rate of the tested soil.
3. Note post infiltration test, test pit was excavated further and encountered bedrock within several inches of test elevation. Results may not be indicative of anticipated infiltration rates at this location.
4. See infiltration testing data sheets in Appendix J for additional details.

MEMO

Geotechnical Exploration and Infiltration Test Results
 Belmont Hill School
 Belmont, Massachusetts
 Langan Project No.: 151021202
 14 January 2022 - Page 12 of 14

Table 2: Infiltration Test Results Summary for the East Campus Maintenance Area

Location (Test ID)	Approx. Surface El. (feet) ¹	Test Depth (feet)	Approx. Test El. (feet) ¹	Steady State Rate (A) ⁴ (in/hr)	Steady State Rate (B) ⁴ (in/hr)	Field Saturated Hydraulic Conductivity K _{sat} (in/hr)	USDA Textural Classification [Rawls Rate]	Material Type
TP-301 (IT-2)	263	1.5 to 2	261	18.9	153.7	3.53	Laboratory Test Pending	Brown silty fine SAND, trace coarse-fine gravel, trace cobbles, trace roots (moist)
TP-302 (IT-3)	262	2 to 2.5	259.5	16.5	26.0	0.80	Laboratory Test Pending	Brown silty coarse-fine SAND, some coarse-fine gravel, trace cobbles, trace clay, trace organics, trace roots (moist)
TP-303	260.5	6.5 to 7.5	253 to 254	Not Tested ²	Not Tested ²	Not Tested ²	Laboratory Test Pending	Gray coarse-fine SAND with coarse-fine gravel, some silt (moist)
TP-304 (IT-4)	257	2.5 to 3	254	11.8	23.6	1.28	Laboratory Test Pending	Brown to tan fine sandy SILT, trace coarse-fine gravel, trace cobbles (moist)
TP-305 (IT-305a)	263.5	1.75 to 2.25	261.25	7.1	28.4	0.74	Not Tested	Brown coarse-fine SAND, some silt, trace coarse-fine gravel, trace cobbles (moist)
TP-305 (IT-305b)	263.5	2.5 to 3	260.5	14.2	52.0	2.15	Laboratory Test Pending	Gray coarse-fine SAND, some silt, some coarse-fine gravel, trace cobbles, trace boulders, trace weathered rock fragments (moist)

Notes:

1. All elevations refer to the Town of Belmont Datum.
2. Field infiltration test not performed in test pit TP-303, but sample was submitted to laboratory for testing.
3. See infiltration testing data sheets in Appendix K for additional details.

MEMO

Geotechnical Exploration and Infiltration Test Results
 Belmont Hill School
 Belmont, Massachusetts
 Langan Project No.: 151021202
 14 January 2022 - Page 13 of 14

Table 3: Infiltration Test Results Summary for the JAC Parking Lot

Location (Test ID)	Approx. Surface El. (feet) ¹	Test Depth (feet)	Approx. Test El. (feet) ¹	Steady State Rate (A) ⁴ (in/hr)	Steady State Rate (B) ⁴ (in/hr)	Field Saturated Hydraulic Conductivity K _{sat} (in/hr)	USDA Textural Classification [Rawls Rate]	Material Type
TP-201 (IT-201)	250.5	4.75 to 5.25	245.3	29.9	64.6	0.07	Not Tested	Brownish tan SILT, trace clay, trace fine sand, trace roots (moist)
TP-202 (IT-202)	249.8	4 to 4.5	245.3	37.8	70.9	0.17	Loamy Sand (Group A) [2.41 in/hr]	Light brown to brown coarse to fine SAND, some coarse gravel, some silt, trace cobbles, trace boulders, trace brick fragments, trace wire fragments, trace concrete fragments, trace asphalt fragments, trace tile fragments (moist) [FILL]
TP-204 (IT-204)	253.5	5 to 5.5	248	283.7	331.0	14.46	Not Tested	Grayish brown coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders (moist)
TP-205 (IT-205)	251.4	2 to 2.5	248.9	18.9	23.6	1.64	Not Tested	Gray coarse to fine SAND, some coarse to fine gravel, some silt, trace cobbles, trace boulders (moist)
TP-206 (IT-206)	251.9	1.5 to 2	249.9	14.2	18.9	0.41	Silt Loam (Group C) [0.27 in/hr]	Light brown coarse to fine sandy SILT, trace coarse to fine gravel, trace roots (moist)
TP-207 (IT-207)	256.5	1 to 1.5	255	4.7	7.1	0.18	Silt Loam (Group C) [0.27 in/hr]	Brown coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders, trace ceramic fragments, trace plastic fragments, trace roots (moist) [FILL]
TP-208 (IT-208)	259.4	3 to 3.5	255.9	7.1	11.8	0.94	Not Tested	Light brown coarse to fine SAND, some silt, some fine gravel (moist)
TP-209 (IT-209)	262	4.5 to 5	257	7.1	11.8	0.38	Not Tested	Light brown sandy SILT, trace coarse to fine gravel, trace roots (moist)

Notes:

1. All elevations refer to the Town of Belmont Datum.
2. See infiltration testing data sheets in Appendix L for additional details.

MEMO

Geotechnical Exploration and Infiltration Test Results
Belmont Hill School
Belmont, Massachusetts
Langan Project No.: 151021202
14 January 2022 - Page 14 of 14

Final design infiltration rates and saturated hydraulic conductivity values should be selected based on the stormwater design and allowable infiltration rates.

LIMITATIONS

The findings and conclusions provided in this memorandum result from our interpretation of the geotechnical conditions existing at the site inferred from a limited number of borings and test pits. Actual subsurface conditions may vary.

This memorandum has been prepared to assist the owner, architect, and site civil engineer in the design process and is only applicable to the design of the specific project identified. The information in this memorandum cannot be used or depended on by engineers or contractors involved in evaluations or designs of facilities on adjacent properties beyond the limits of that which is the specific subject of this memorandum.

Environmental issues (such as permitting or potentially contaminated soil and groundwater) were outside the scope of this geotechnical study.

- Enclosure(s): Figure 1 Exploration Location Plan – East Campus and Maintenance Area
Figure 2 Exploration Location Plan – JAC Parking Lot
- Appendix A Langan Test Pit Logs - East Campus
Appendix B Langan Test Pit Photographs - East Campus
Appendix C Langan Test Pit Logs - East Campus Maintenance Area
Appendix D Langan Test Pit Photographs - East Campus Maintenance Area
Appendix E Langan Test Pit Logs - JAC Parking Lot
Appendix F Langan Test Pit Photographs - JAC Parking Lot
Appendix G Langan Boring Logs - East Campus Maintenance Area
Appendix H Langan Groundwater Observation Well Log - East Campus Maintenance Area
Appendix I Laboratory Test Results
Appendix J Infiltration Test Results - East Campus
Appendix K Infiltration Test Results - East Campus Maintenance Area
Appendix L Infiltration Test Results - JAC Parking Lot

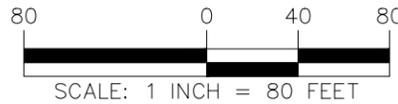
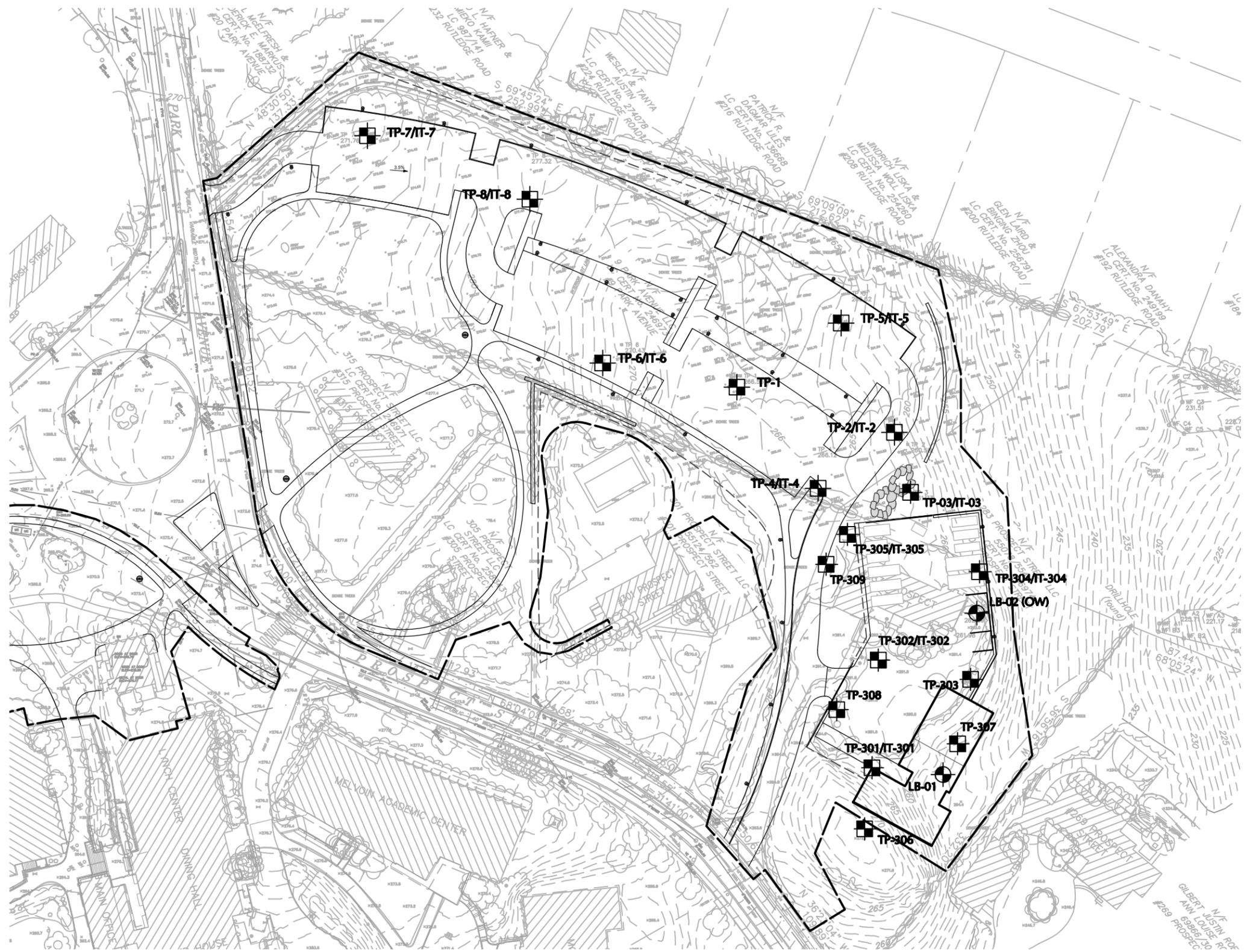
FIGURES

NOTES

1. ALL TEST PIT AND BORING LOCATIONS ARE APPROXIMATE.
2. ELEVATIONS REFERENCE TOWN OF BELMONT DATUM.
3. TOPOGRAPHIC INFORMATION AND EXISTING CONDITIONS OBTAINED FROM A SURVEY TITLES "TOPOGRAPHIC PLAN" PREPARED BY PRECISION LAND SURVEYING, INC., DATED 23 DECEMBER 2020 AND REVISED 16 DECEMBER 2021.
4. PROPOSED PARKING LOT AND BUILDING CONCEPTUAL INFORMATION OBTAINED FROM CAD FILES BY REED HILDERBRAND LANDSCAPE ARCHITECTS PROVIDED 13 JANUARY 2022.
5. TEST PITS WERE PERFORMED BY FE FRENCH CONSTRUCTION, INC., ON 8 AND 9 JUNE 2021 AND 4 AND 5 JANUARY 2022 UNDER THE FULL-TIME OBSERVATION OF A LANGAN FIELD ENGINEER.
6. BORINGS WERE PERFORMED BY GEOLOGIC EARTH EXPLORATION INC., ON 6 JANUARY 2022 UNDER THE FULL-TIME OBSERVATION OF A LANGAN FIELD ENGINEER.

LEGEND

TEST PIT		TP-#
TEST PIT AND INFILTRATION TEST		TP-#/IT-#
BORING		LB-#
PROPOSED PARKING LOT BOUNDARY		

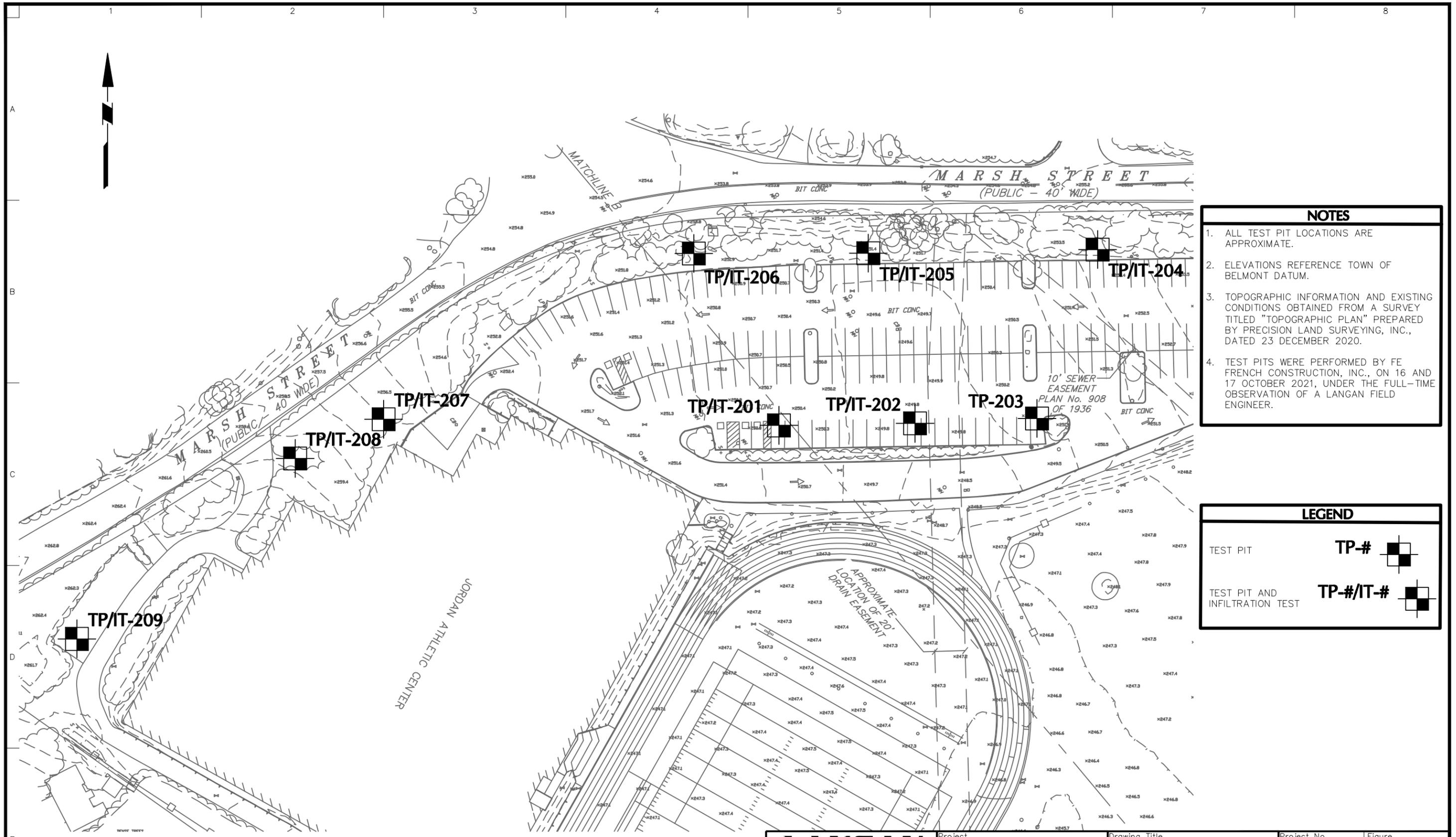


LANGAN
Langan Engineering and
Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
**BELMONT HILL
SCHOOL**
BELMONT
MIDDLESEX COUNTY MASSACHUSETTS

Drawing Title
**BORING LOCATION
PLAN**

Project No.	151021201	Figure	1
Date	01/13/2022		
Drawn By	REP		
Checked By	TL		

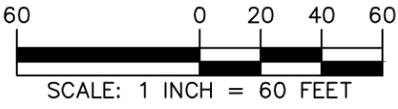


- NOTES**
1. ALL TEST PIT LOCATIONS ARE APPROXIMATE.
 2. ELEVATIONS REFERENCE TOWN OF BELMONT DATUM.
 3. TOPOGRAPHIC INFORMATION AND EXISTING CONDITIONS OBTAINED FROM A SURVEY TITLED "TOPOGRAPHIC PLAN" PREPARED BY PRECISION LAND SURVEYING, INC., DATED 23 DECEMBER 2020.
 4. TEST PITS WERE PERFORMED BY FE FRENCH CONSTRUCTION, INC., ON 16 AND 17 OCTOBER 2021, UNDER THE FULL-TIME OBSERVATION OF A LANGAN FIELD ENGINEER.

LEGEND

TEST PIT **TP-#**

TEST PIT AND INFILTRATION TEST **TP-#/IT-#**



LANGAN
 Langan Engineering and Environmental Services, Inc.
 888 Boylston Street, Suite 510
 Boston, MA
 T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
BELMONT HILL SCHOOL

Drawing Title
EXPLORATION LOCATION PLAN
JAC PARKING LOT

Project No. **151014301**
 Date **11/04/2021**
 Drawn By **AHM**
 Checked By **TL**

Figure
2
 Sheet 1 of 1

APPENDIX A

Langan Test Pit Logs – East Campus

LOG OF TEST PIT TP-1

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/08/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 266.5 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 7.5 ft	WATER LEVEL - First N/E
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+266.5	8 inches Dark brown SILT, some medium to fine sand, trace roots (dry) [TOPSOIL]	0	S-1	GRAB	Grab sample S-1 at 0.0ft to 0.67ft Grab sample S-2 at 1.0ft to 1.5ft Grab sample S-3 at 2.5ft to 3.0ft Grab sample S-4 at 4.0ft to 4.5ft Infiltration test attempted at about 5ft. Water did not infiltrate because the test was attempted on top of large boulders. Grab sample S-5 at 6.0ft to 6.5ft
	+265.8	Brown fine sandy SILT, some medium sand, trace coarse to fine gravel, trace cobbles, trace boulders, trace roots (dry)	1	S-2	GRAB	
	+265.0	Tan SILT, some fine sand, trace coarse to fine gravel, trace cobbles, trace boulders (dry)	2			
	+263.5	Gray coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders (moist)	3	S-3	GRAB	
			4	S-4	GRAB	
			5			
			6	S-5	GRAB	
			7			
	+259.0	End of test pit	8			Test pit backfilled with excavated soils in lifts and compacted with excavator bucket.
			9			
			10			

LOG OF TEST PIT TP-2/IT-2

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/08/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 261.5 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 3.5 ft	WATER LEVEL - First N/E
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+261.5	6 inches Dark brown SILT, trace fine sand, trace roots (dry) [TOPSOIL]	0			
	+261.0	Brown fine sandy SILT, some medium sand, trace coarse to fine gravel, trace cobbles, trace boulders, trace roots (dry)	1			
	+258.5	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)	3	S-1	GRAB	Grab sample S-1 at 1.5ft to 2.0ft
	+258.0	End of test pit	3.5	S-2	GRAB	Infiltration test IT-2 performed at about 3ft. Grab sample S-2 at 3.0ft to 3.5ft
			4			Top of rock at 3.5ft. Test pit backfilled with excavated soils in lifts and compacted with excavator bucket.
			5			
			6			
			7			
			8			
			9			
			10			

LOG OF TEST PIT TP-3/IT-3

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/08/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 261 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 5 ft	WATER LEVEL - First N/E
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+261.0	10 inches Dark brown SILT, some medium to fine sand, trace roots (dry) [TOPSOIL]	0			
	+260.2	Brown fine sandy SILT, trace coarse to fine gravel, trace cobbles, trace roots (dry)	1			
	+259.5	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)	2			
			3			
			4			
			4	S-1	GRAB	Infiltration test IT-3 performed at about 4ft. Grab sample S-1 at 4.0ft to 4.5ft
			5			
	+256.0	End of test pit	5			Top of rock at 5.0ft. Test pit backfilled with excavated soils in lifts and compacted with excavator bucket.
			6			
			7			
			8			
			9			
			10			

LOG OF TEST PIT TP-4/IT-4

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/08/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 265.5 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 7.5 ft	WATER LEVEL - First N/E
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+265.5	8 inches Dark brown SILT, some coarse to fine sand, trace coarse to fine gravel, trace bricks, trace roots (dry) [TOPSOIL]	0			Infiltration test IT-4 performed at about 1.5ft.
	+264.8	Brown fine sandy SILT, some medium sand, trace coarse to fine gravel, trace cobbles, trace boulders, trace roots (dry)	1			
	+263.5	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)	2			
			3			
			4			
			5			
			6			
			7			
	+258.0	End of test pit	8			Top of rock at 7.5ft. Test pit backfilled with excavated soils in lifts and compacted with excavator bucket.
			9			
			10			

LOG OF TEST PIT TP-5/IT-5

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/09/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 265 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 8 ft	WATER LEVEL - First N/E
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS	
				Number	Type		
	+265.0	Greyish brown to tan coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, with tile fragments, with concrete fragments, with bricks, with glass, trace roots (dry) [FILL]	0				
			1	S-1	GRAB		Grab sample S-1 at 1.0ft to 1.5ft
			2				
	+262.5	Dark brown SILT, trace fine sand, trace roots (dry)					
	+262.0	Brown fine sandy SILT, trace coarse to medium sand, trace coarse to fine gravel, trace cobbles, trace boulders, trace roots (dry)	3	S-2	GRAB		Grab sample S-2 at 3.0ft to 3.5ft
			4				
	+260.5	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)				Grab sample S-3 at 4.5ft to 5.0ft Infiltration test IT-5 performed at about 5.5ft.	
			5	S-3	GRAB		
				6			
			7				
			8				
	+257.0	End of test pit				Test pit backfilled with excavated soils in lifts and compacted with excavator bucket.	
			9				
			10				

LOG OF TEST PIT TP-6/IT-6

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/09/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 272 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 8 ft	WATER LEVEL - First N/E
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+272.0	9 inches Dark brown SILT, trace fine sand, trace coarse to fine gravel, trace roots (dry) [TOPSOIL]	0			
	+271.3	Brown fine sandy SILT, trace coarse to fine gravel, trace cobbles, trace boulders, trace roots (dry)	1	S-1	GRAB	Grab sample S-1 at 1.0ft to 1.5ft
	+269.0	Gray coarse to fine SAND, some silt, trace coarse to fine gravel, trace cobbles, trace boulders (moist)	3	S-2	GRAB	Infiltration test IT-6 performed at about 3.0ft. Grab sample S-2 at 3.0ft to 3.5ft
	+264.0	End of test pit	8			Test pit backfilled with excavated soils in lifts and compacted with excavator bucket.
			9			
			10			

LOG OF TEST PIT TP-7/IT-7

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/09/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 272.5 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 8 ft	WATER LEVEL - First N/E
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+272.5	8 inches Dark brown SILT, trace coarse to fine sand, trace roots (dry) [TOPSOIL]	0			
	+271.8	Brown fine sandy SILT, some coarse to medium sand, trace coarse to fine gravel, trace cobbles, trace boulders, trace roots (dry)	1			
	+268.5	Gray coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders (moist)	4			Infiltration test IT-7 performed at about 4.0ft.
	+264.5	End of test pit	8			Test pit backfilled with excavated soils in lifts and compacted with excavator bucket.
			9			
			10			

LOG OF TEST PIT TP-8/IT-8

PROJECT NAME Belmont Hill School		PROJECT NUMBER 151014301	DATE 06/09/2021
LOCATION 350 Prospect Street		ELEVATION Approx. 277.5 ft (Town of Belmont Datum)	
EXCAVATION CONTRACTOR F.E. French Construction, Inc.		DEPTH 6 ft	WATER LEVEL - First N/E ▼
EQUIPMENT CAT 307C Excavator		FOREMAN Justin Kittle	WATER LEVEL - Completion N/A ▼
		LANGAN PERSONNEL Alexander Macon	

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Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
[Symbol: Dotted pattern]	+277.5	6 inches Dark brown SILT, trace coarse to fine sand, trace roots (dry) [TOPSOIL]	0			
[Symbol: Dotted pattern]	+277.0	Brown fine sandy SILT, some coarse to medium sand, trace coarse to fine gravel, trace cobbles, trace boulders (dry)	1			
[Symbol: Dotted pattern]	+275.0	Gray coarse to fine SAND, some silt, some coarse to fine gravel, trace cobbles, trace boulders (moist)	3			
[Symbol: Dotted pattern]	+271.5	End of test pit	6			
			5	S-1	GRAB	Grab sample S-1 at 5.0ft to 5.5ft
			4			Infiltration test IT-8 performed at about 4.0ft.

APPENDIX B

Langan Test Pit Photographs – East Campus



Test Pit TP-1 - Photo 1



Test Pit TP-1 - Photo 2



Test Pit TP-1 - Photo 3



Test Pit TP-1 - Photo 4



Test Pit TP-1 - Photo 5



Test Pit TP-1 - Photo 6



Test Pit TP-1 - Photo 7



Test Pit TP-2 - Photo 1



Test Pit TP-2 - Photo 2



Test Pit TP-2 - Photo 3



Test Pit TP-2 - Photo 4



Test Pit TP-2 - Photo 5



Test Pit TP-2 - Photo 6



Test Pit TP-3 - Photo 1



Test Pit TP-3 - Photo 2



Test Pit TP-3 - Photo 3



Test Pit TP-3 - Photo 4



Test Pit TP-3 - Photo 5



Test Pit TP-4 - Photo 1



Test Pit TP-4 - Photo 2