

STORMWATER REPORT

APPLICATION FOR MINOR SITE PLAN APPROVAL
PROPOSED RESIDENTIAL RECONSTRUCTION
40A HERSEY STREET, HINGHAM, MA 02043

STORMWATER REPORT

**Prepared For:
Morgan Residential LLC**

**Project:
Proposed Residential Reconstruction
40A Hersey Street, Hingham, MA 02043**

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STORMWATER REPORT NARRATIVE

Proposed Residential Reconstruction
40A Hersey Street, Hingham, MA 02043

EXISTING CONDITIONS

The subject property is located at 40A Hersey Street in Hingham and is identified by the Hingham Assessor's Office as Map 70 Lot 79B. The lot area is approximately 12,063 square feet in area. The property is bordered by Hersey Lane to the north and residences to the south, east and west. Multiple residential properties also exist across Hersey Lane from the subject property.

Under existing conditions, the project site consists of a single-family dwelling (1,009 square foot footprint) with detached garage, associated porches, walks, a patio, and a paved driveway. The remainder of the site is brush and grass with overstory trees along the east, south and west property lines.

There are no wetland resource areas or associated buffer zones in the vicinity of the subject property.

Subsurface soils are classified into hydrologic soil groups (HSGs) 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 in determining runoff curve numbers when modeling stormwater runoff flowrates for existing and proposed conditions. According to the USDA Natural Resources Conservation Service mapping, the entire property is mapped as Chatfield-Rock outcrop-Canton complex, 8 to 15 percent slopes, very stony (Map Unit 111C), which has a parent material ranging from sandy loam to loamy sand. The soil components of this soil type are classified in hydrologic soil group (HSG) B. Soil test pits were performed at the site on July 10, 2026 and direct observations revealed a parent material of a gravelly loamy sand in two locations and gravelly loamy sand / coarse sand in two other locations. To be conservative, curve numbers under HSG B were selected for the stormwater calculations.

There is currently no stormwater collection system for the subject property. Runoff from the entire property flows in a southerly direction to the southerly end of the lot.

PROPOSED CONDITIONS

The applicant proposes to raze the existing dwelling and construct a new dwelling and attached garage (2,304 square foot footprint), and construct a new paved driveway and associated walkways and a patio. Overall, the project will result in a net increase in impervious surfaces of 1,343 square feet. The project includes the installation of new subsurface water and sewer services and new underground electric, cable, and telephone services. The project will not alter the existing stormwater runoff patterns, however, to mitigate for the increase in impervious surfaces, the

applicant is proposing to install a subsurface infiltration system to accommodate stormwater runoff from a portion of the dwelling roof.

DEP STORMWATER MANAGEMENT STANDARDS AND DESIGN CRITERIA

The DEP Stormwater Management Regulations include ten Stormwater Management Standards. The Standards were established to provide clear and consistent guidelines for stormwater management projects. The Standards address both water quantity and quality by establishing a level of required controls, which can presumptively be achieved through site planning processes, non-structural measures and the use of Best Management Practices (BMPs).

Each of the standards have been evaluated for their applicability to the proposed Definitive Subdivision as follows:

1. **No new stormwater conveyances (outfalls/discharges) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.**

The proposed project is a redevelopment of an existing residential lot. The project proposes no new stormwater conveyances.

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.**

SITEC Engineering & Environmental Consultants, Inc. has prepared calculations for existing conditions and for post-construction conditions after the restoration of the building and the associated parking facilities have been fully constructed. These calculations have been performed for each of the 2, 10, 25, and 100-year, 24-hour storm events. These calculations demonstrate that the proposed stormwater controls will mitigate peak runoff flowrates for post-development conditions to rates that are less than existing conditions. Below is a summary table of existing and proposed flowrates:

Stormwater Calculation Table for the 2, 10, 25, and 100-Year Events

		STORM EVENT			
		2-Year (3.40")	10-Year (5.2")	10-Year (6.4")	100-Yr (8.1")
Flow Rates to South of Site	Existing Conditions	0.28	0.69	0.99	1.45
	Proposed Conditions	0.25	0.61	0.88	1.29

3. **Loss of annual recharge to ground water should be 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.**

TOTAL PROPOSED IMPERVIOUS SURFACE UNDER PROPOSED CONDITIONS: 3,816 S.F.

REQUIRED RECHARGE VOLUME:

Hydrologic Soil Group B: $3,816 \text{ SF} \times 0.35 \text{ inches of runoff} / 12 = \underline{\underline{111 \text{ C.F.}}}$

PROVIDED RECHARGE VOLUME BY PROPOSED INFILTRATION SYSTEM (STATIC VOLUME):

Infiltration System Storage Volume: 390 C.F.

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:**
 - a. **Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;**
 - b. **Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and,**
 - c. **Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.**

Stormwater runoff from the proposed paved driveway will be directed through surficial grading in a southerly direction to the grassed yard. The grassed yard(s) will, through a combination of sedimentation, gravity separation, vegetation interception and infiltration provide a level of total suspended solids removal.

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.

This Standard is not applicable as there are no proposed uses on the project site that may expose stormwater runoff to any higher potential pollutant loads.

- 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.**

This Standard is not applicable as there are no Zone IIs, IWPA's or other critical areas in the vicinity of the subject property.

- 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.**

The project consists of re-developing the residential lot by replacing the existing dwelling with a new dwelling and attached garage. Notwithstanding that, the project complies with all Stormwater Management Standards.

- 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.**

The proposed project will not disturb more than one acre of land and is not required to obtain coverage under the NPDES Construction General Permit issued by the US EPA. Notwithstanding that, a Construction Period Pollution Prevention Plan has been prepared and is included in this Stormwater Report.

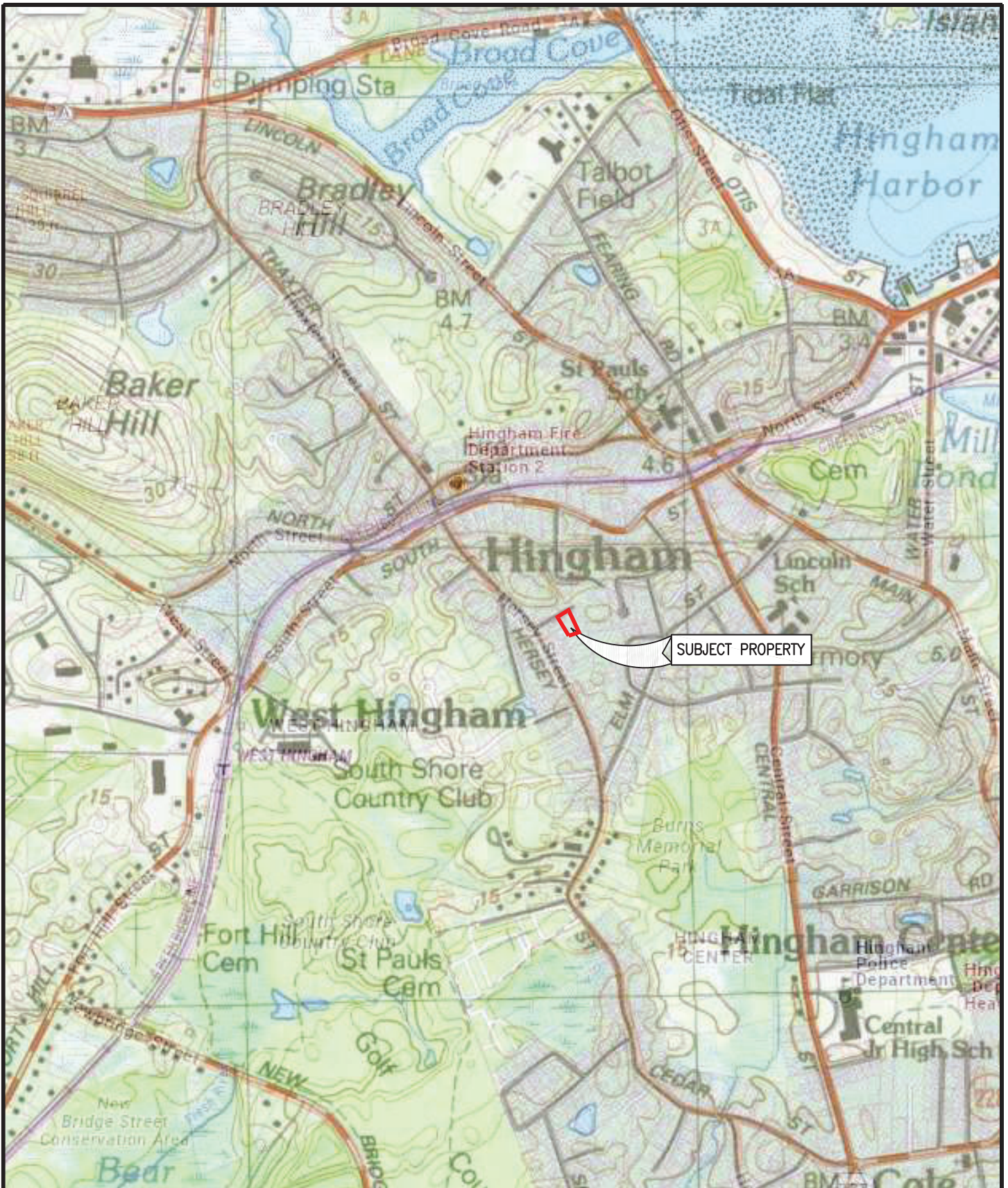
- 9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.**

The Stormwater Management System Operation & Maintenance Plan for the project site is included in this Stormwater Report.

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

To the best of our professional knowledge and belief, no illicit discharges exist on or are proposed on the site.

ATTACHMENT 1 – USGS LOCUS MAP



BASE IMAGE: MASSMAPPER (GIS) WITH USGS TOPOGRAPHIC MAP

drawing title:
LOCUS MAP

scale:
1"=1000'

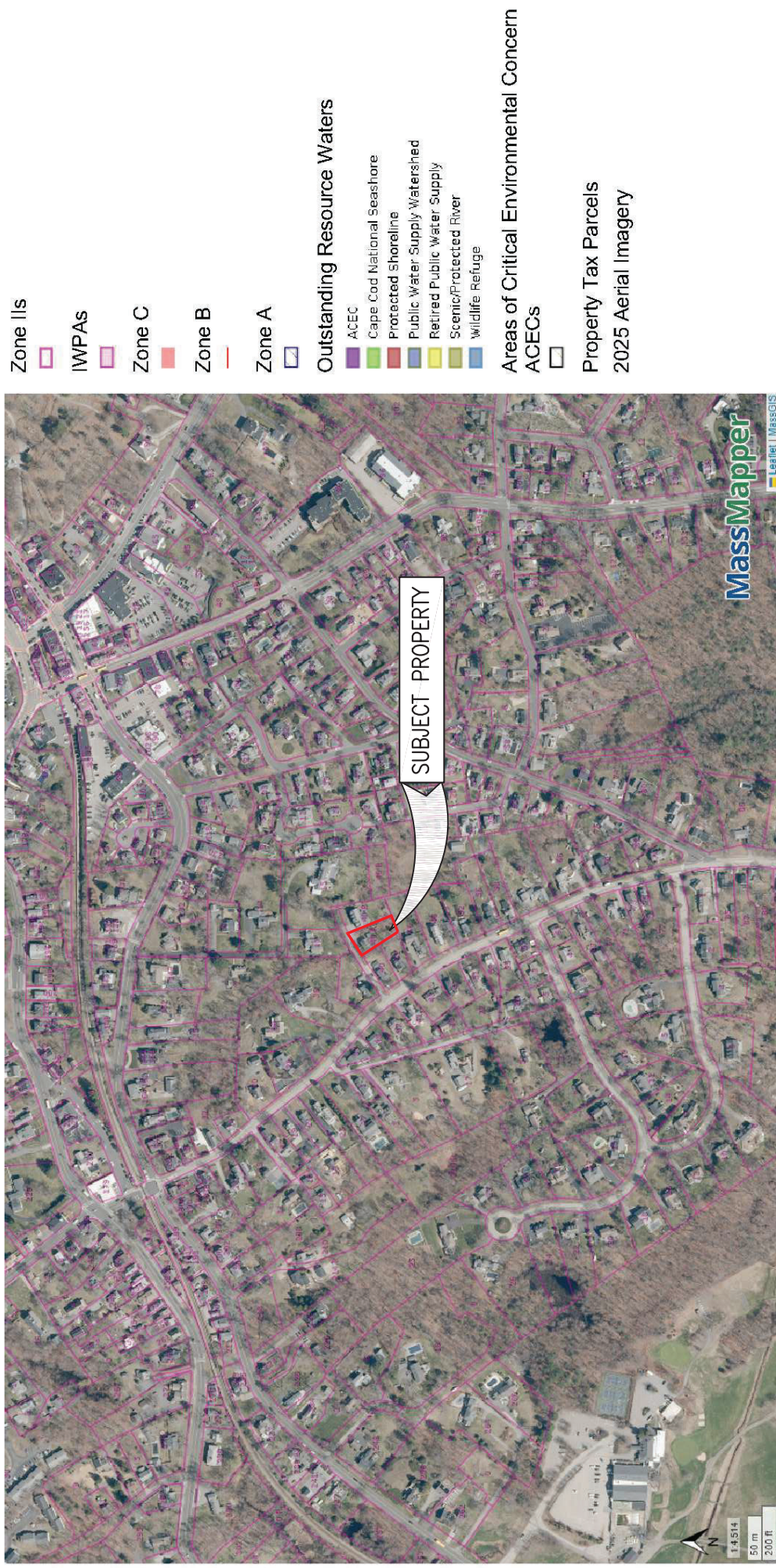
project:
PROPOSED RESIDENTIAL RECONSTRUCTION
40A HERSEY STREET
HINGHAM, MASSACHUSETTS



769 Plain Street, Unit C
Marshfield, MA 02050
Tel: (781) 319-0100 Fax: (781) 834-4783

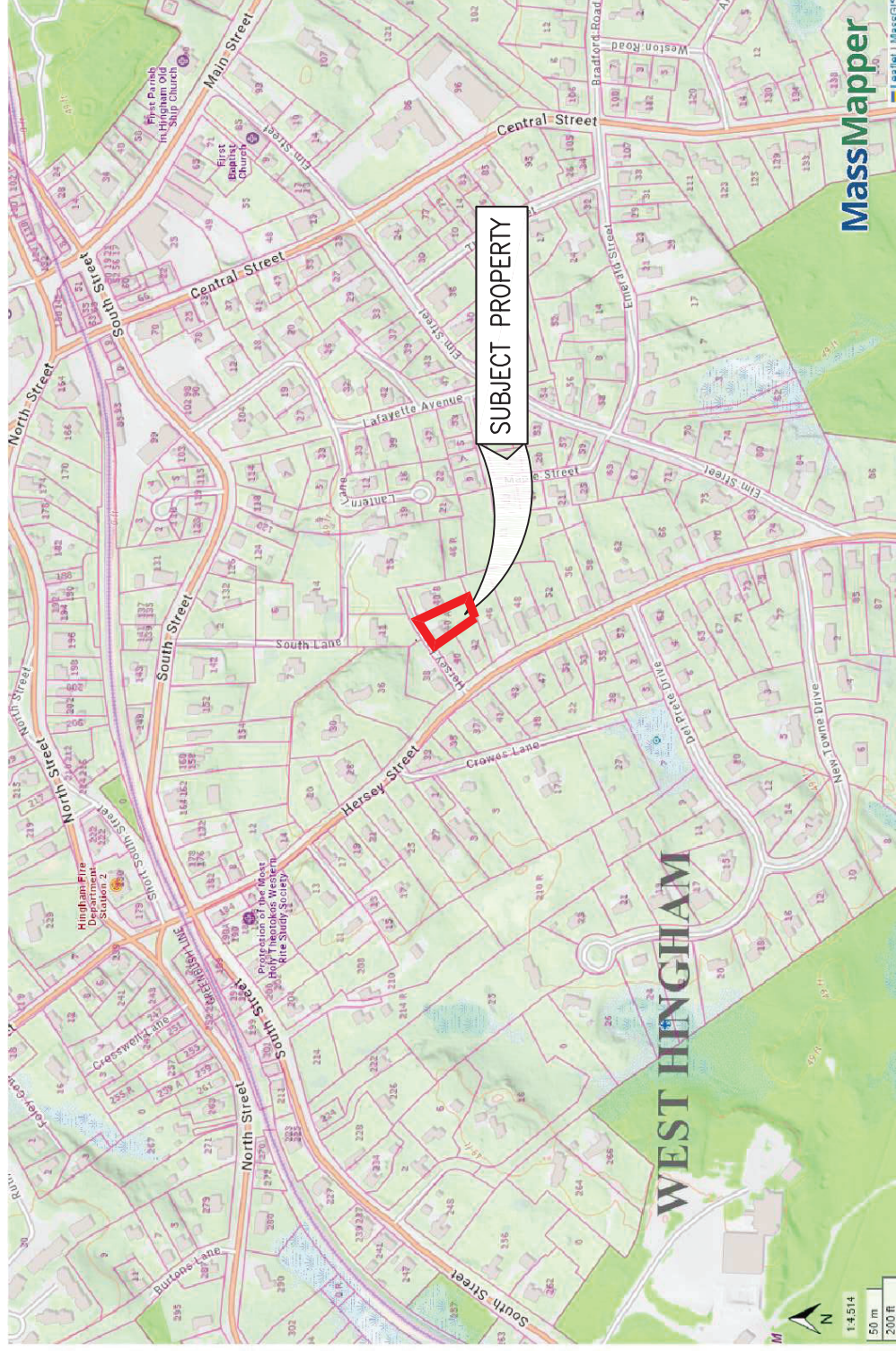
ATTACHMENT 2 – WATER RESOURCE AREAS MAP

Water Resource Areas Map - 40A Hersey Street



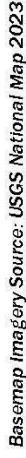
ATTACHMENT 3 – NATURAL HERITAGE MAP

NHESP Habitat Map - 40A Hersey Street



ATTACHMENT 4 – FEMA FLOOD INSURANCE RATE MAP

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT



ATTACHMENT 5 – SOILS MAP & DESCRIPTIONS

Soil Map—Plymouth County, Massachusetts



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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: Plymouth County, Massachusetts
Survey Area Data: Version 18, Sep 5, 2025

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

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
111C	Chatfield-Rock outcrop-Canton complex, 8 to 15 percent slopes, very stony	0.3	100.0%
Totals for Area of Interest		0.3	100.0%

Plymouth County, Massachusetts

111C—Chatfield-Rock outcrop-Canton complex, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w82v

Landscape: Glaciated uplands

Elevation: 0 to 230 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Chatfield, very stony, and similar soils: 40 percent

Rock outcrop: 25 percent

Canton, very stony, and similar soils: 20 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting

Landscape: Glaciated uplands

Landform: Bedrock-controlled ridges, Bedrock-controlled hills

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest

Down-slope shape: Convex

Across-slope shape: Linear, convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

A - 1 to 2 inches: fine sandy loam

Bw - 2 to 30 inches: gravelly fine sandy loam

2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: 20 to 41 inches to lithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Description of Rock Outcrop

Setting

Landscape: Glaciated uplands

Landform: Bedrock-controlled ridges, Bedrock-controlled hills

Parent material: Igneous and metamorphic rock

Typical profile

R - 0 to 79 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landscape: Glaciated uplands

Landform: Ridges, Moraines, Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex, linear

Across-slope shape: Convex

Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 5 inches: fine sandy loam

Bw1 - 5 to 16 inches: fine sandy loam

Bw2 - 16 to 22 inches: gravelly fine sandy loam

2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat):
Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Newfields, very stony

Percent of map unit: 10 percent
Landscape: Glaciated uplands
Landform: Ground moraines, Moraines, Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

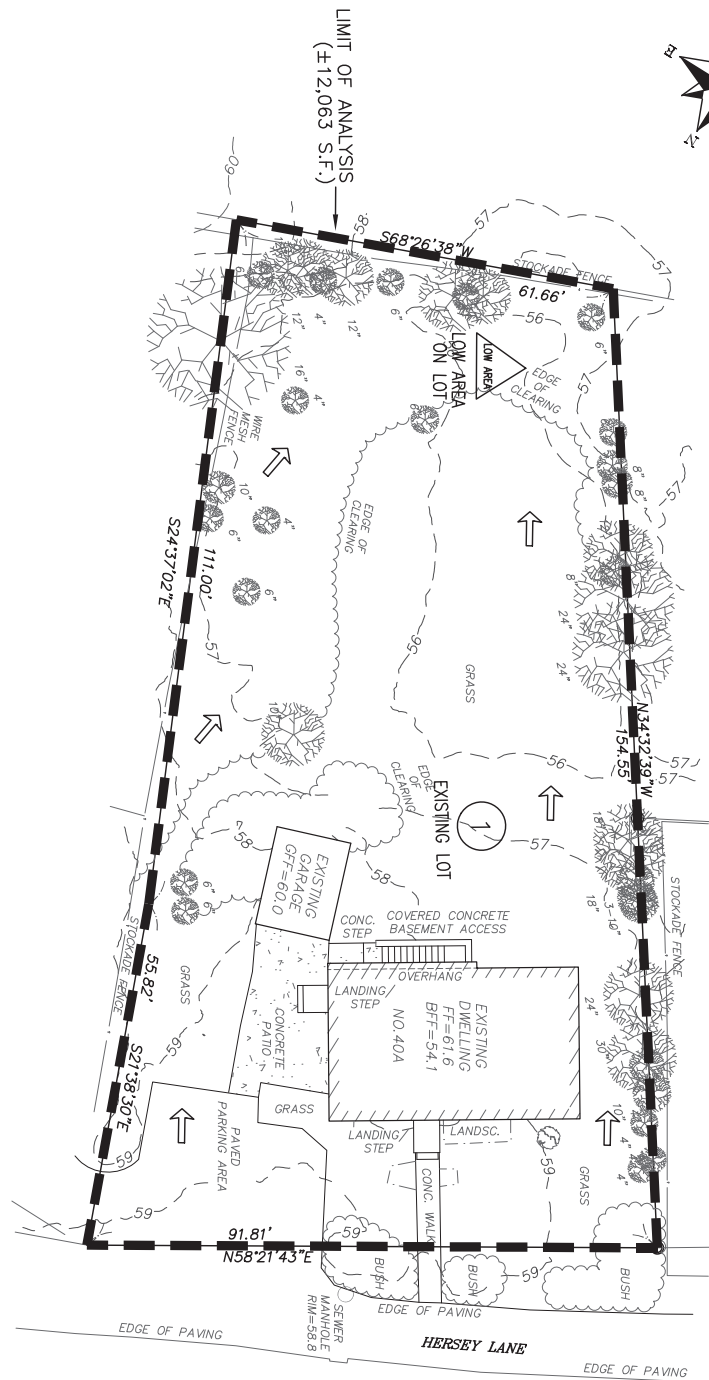
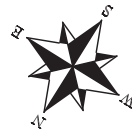
Hollis, very stony

Percent of map unit: 5 percent
Landscape: Glaciated uplands
Landform: Bedrock-controlled ridges, Bedrock-controlled hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Plymouth County, Massachusetts
Survey Area Data: Version 18, Sep 5, 2025

ATTACHMENT 6 – DRAINAGE AREA PLANS & DRAINAGE CALCULATIONS



769 Plain Street, Unit C
Marshfield, MA 02050
Tel. (781) 319-0100 Fax (781) 834-4783

project:
PROPOSED RECONSTRUCTION
40A HERSEY STREET
HINGHAM, MA 02043

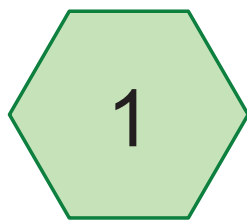
client:
MORGAN RESIDENTIAL LLC
15 MARYKNOLL DRIVE
HINGHAM, MA 02043

drawing title:
EXISTING DRAINAGE AREAS

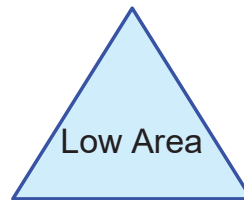
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date:
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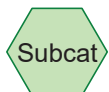
job no.:
SE26-2001



Existing Lot



Low Area on Lot



Routing Diagram for Existing

Prepared by {enter your company name here}, Printed 7/22/2026
HydroCAD® 10.00-26 s/n 07502 © 2020 HydroCAD Software Solutions LLC

Existing

Prepared by {enter your company name here}

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Type III 24-hr 2-Year Storm Event Rainfall=3.40"

Printed 7/22/2026

Page 2

Summary for Subcatchment 1: Existing Lot

Runoff = 0.28 cfs @ 12.10 hrs, Volume= 0.020 af, Depth> 0.86"

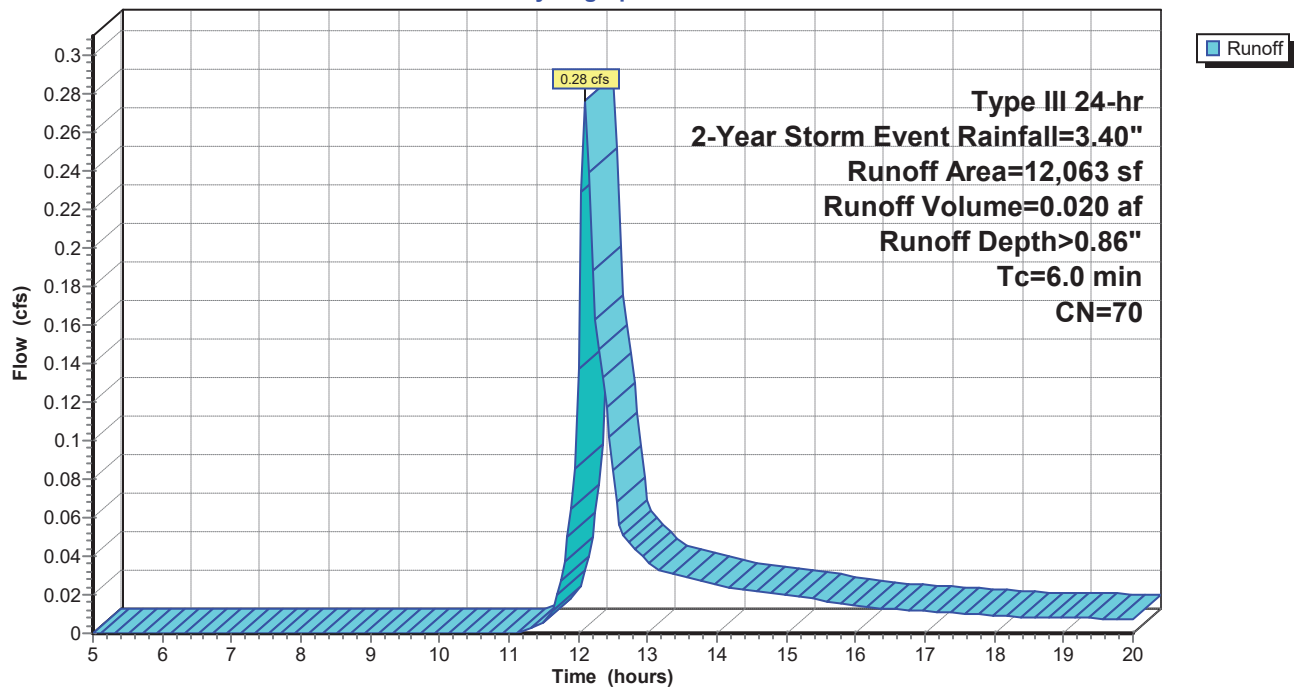
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.40"

	Area (sf)	CN	Description
*	2,495	98	Impervious - Dwelling, Driveway, Shed, Walks
	6,060	61	>75% Grass cover, Good, HSG B
	3,508	67	Brush, Poor, HSG B
	12,063	70	Weighted Average
	9,568		79.32% Pervious Area
	2,495		20.68% Impervious Area

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

Subcatchment 1: Existing Lot

Hydrograph



Existing

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Type III 24-hr 2-Year Storm Event Rainfall=3.40"

Printed 7/22/2026

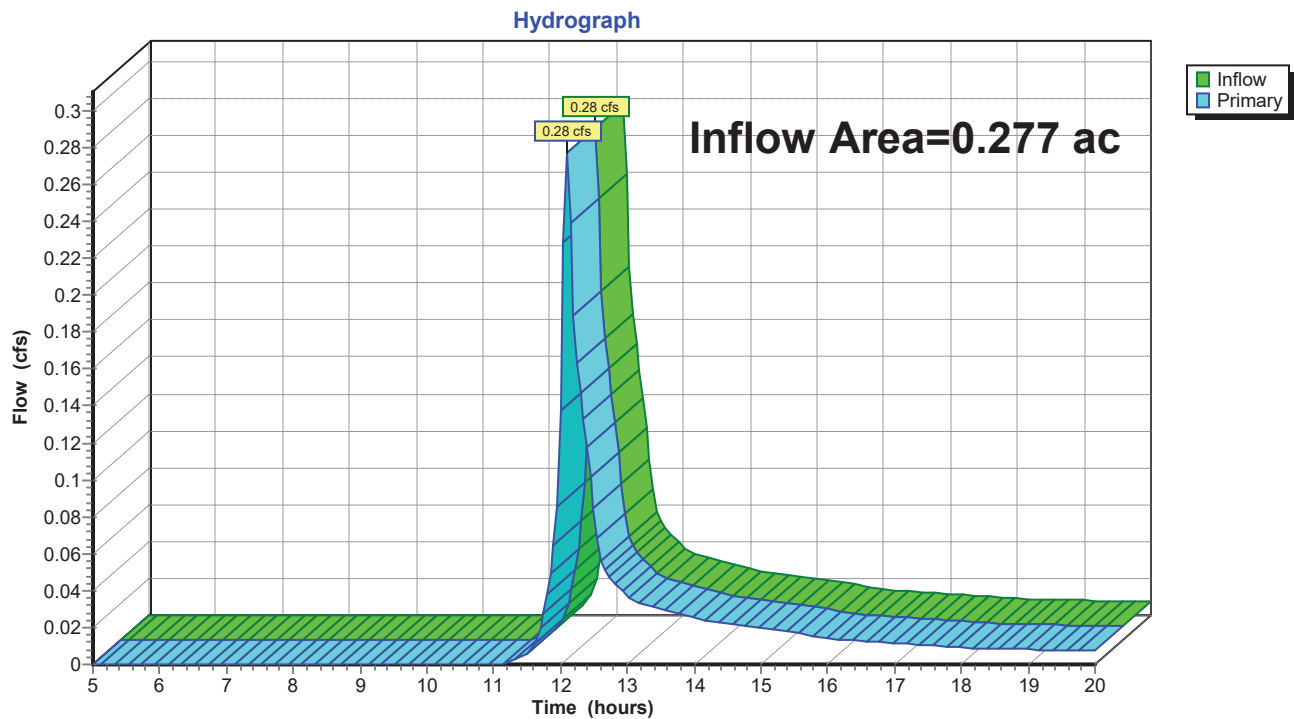
Page 3

Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.277 ac, 20.68% Impervious, Inflow Depth > 0.86" for 2-Year Storm Event event
Inflow = 0.28 cfs @ 12.10 hrs, Volume= 0.020 af
Primary = 0.28 cfs @ 12.10 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot



Existing

Prepared by {enter your company name here}

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Type III 24-hr 10-Year Storm Event Rainfall=5.20"

Printed 7/22/2026

Page 4

Summary for Subcatchment 1: Existing Lot

Runoff = 0.69 cfs @ 12.10 hrs, Volume= 0.047 af, Depth> 2.02"

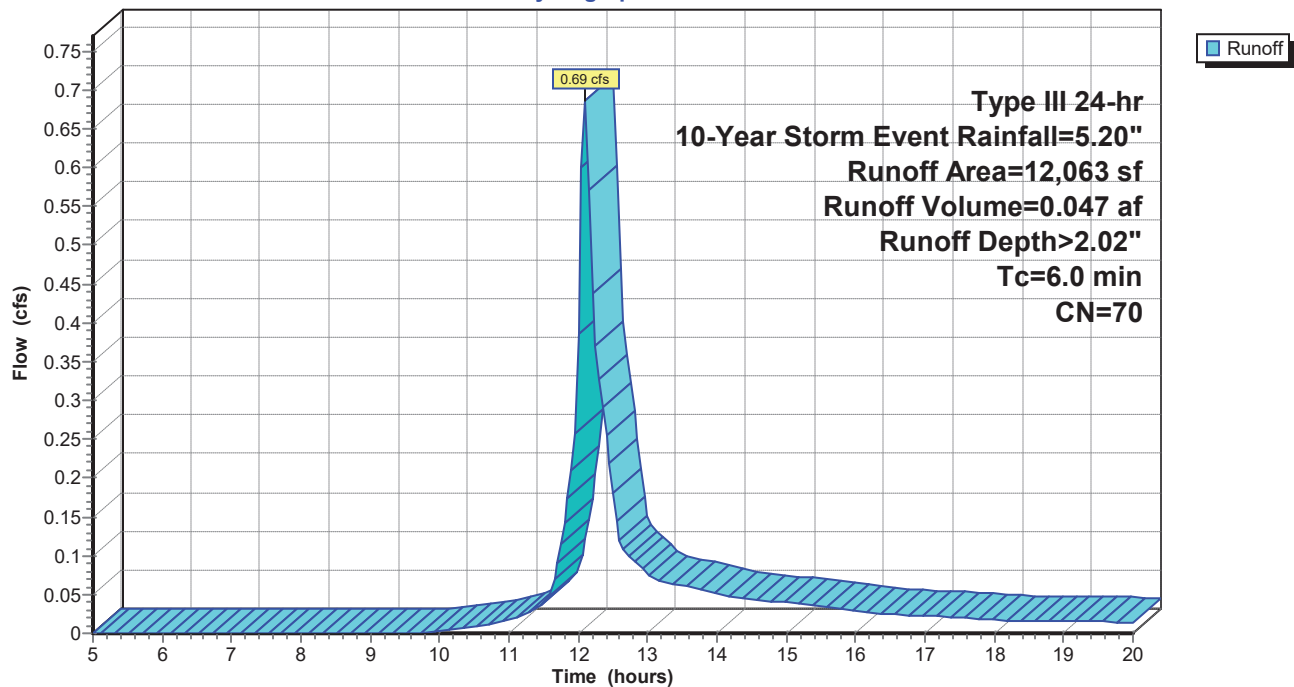
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Event Rainfall=5.20"

	Area (sf)	CN	Description
*	2,495	98	Impervious - Dwelling, Driveway, Shed, Walks
	6,060	61	>75% Grass cover, Good, HSG B
	3,508	67	Brush, Poor, HSG B
	12,063	70	Weighted Average
	9,568		79.32% Pervious Area
	2,495		20.68% Impervious Area

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

Subcatchment 1: Existing Lot

Hydrograph



Existing

Prepared by {enter your company name here}

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Type III 24-hr 10-Year Storm Event Rainfall=5.20"

Printed 7/22/2026

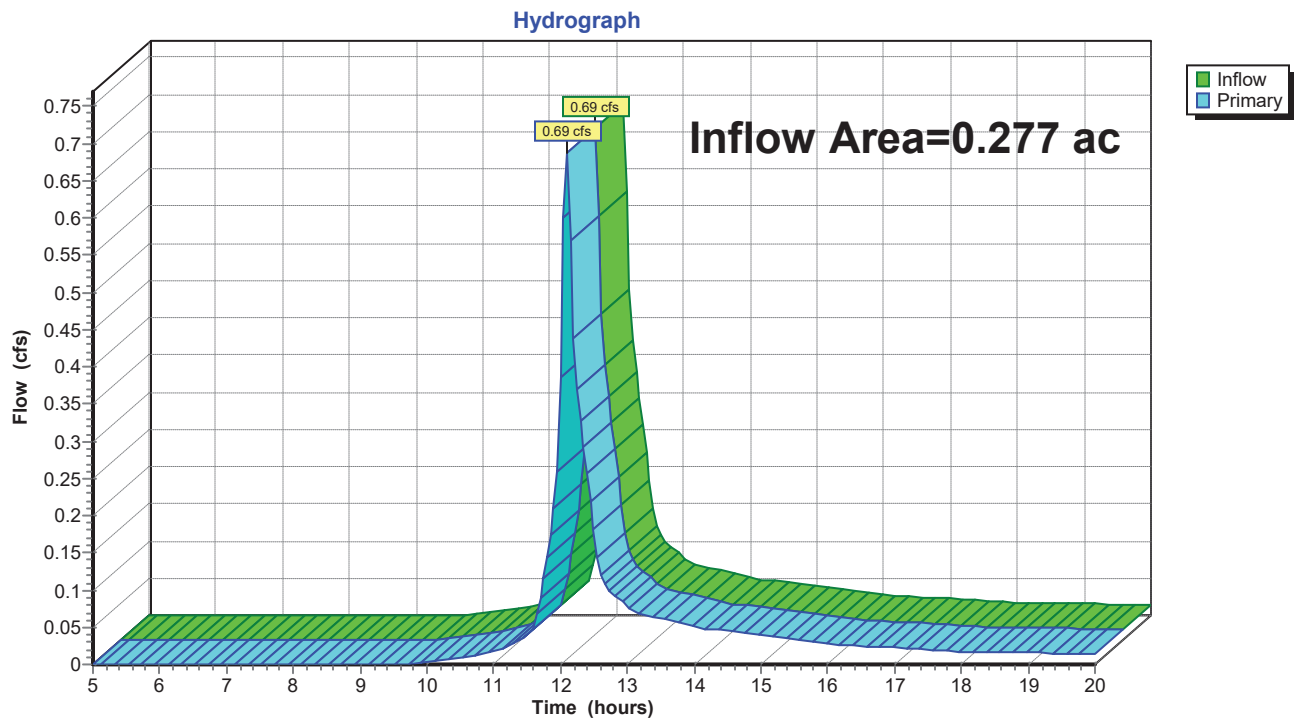
Page 5

Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.277 ac, 20.68% Impervious, Inflow Depth > 2.02" for 10-Year Storm Event event
Inflow = 0.69 cfs @ 12.10 hrs, Volume= 0.047 af
Primary = 0.69 cfs @ 12.10 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot



Existing

Prepared by {enter your company name here}

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Type III 24-hr 25-Year Storm Event Rainfall=6.40"

Printed 7/22/2026

Page 6

Summary for Subcatchment 1: Existing Lot

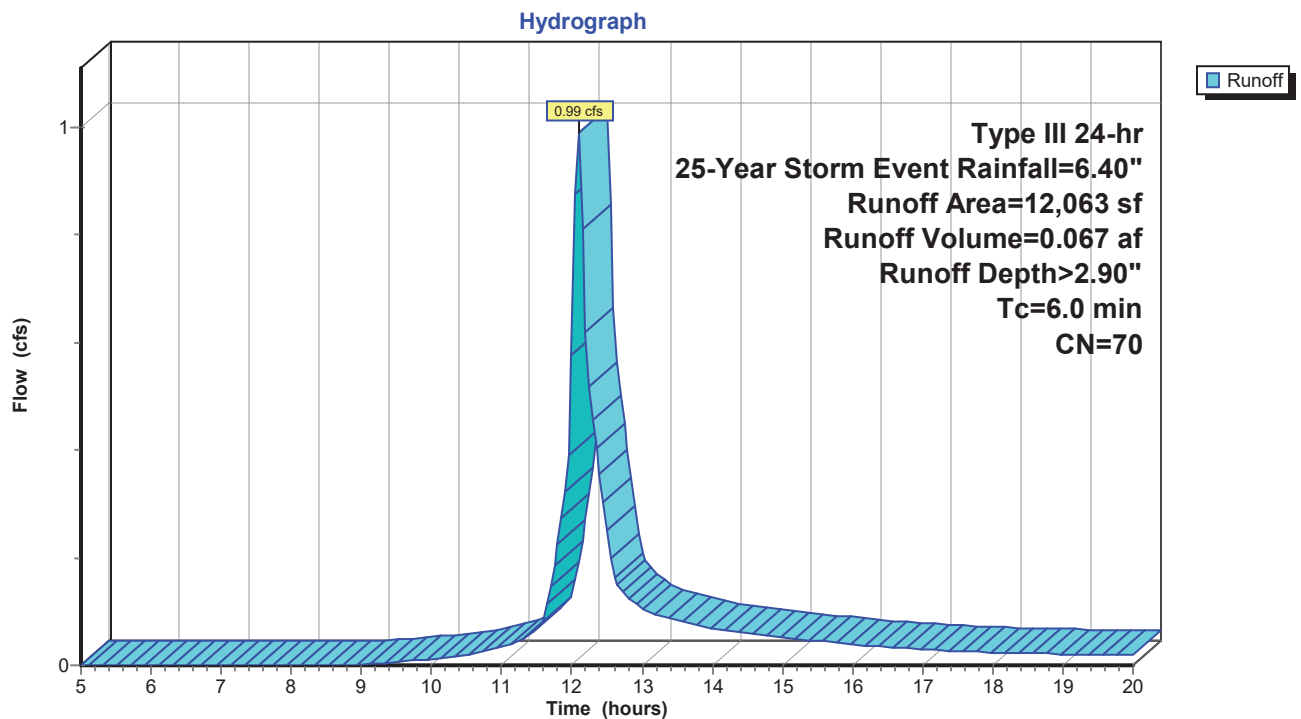
Runoff = 0.99 cfs @ 12.09 hrs, Volume= 0.067 af, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Event Rainfall=6.40"

	Area (sf)	CN	Description
*	2,495	98	Impervious - Dwelling, Driveway, Shed, Walks
	6,060	61	>75% Grass cover, Good, HSG B
	3,508	67	Brush, Poor, HSG B
	12,063	70	Weighted Average
	9,568		79.32% Pervious Area
	2,495		20.68% Impervious Area

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

Subcatchment 1: Existing Lot



Existing

Prepared by {enter your company name here}

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Type III 24-hr 25-Year Storm Event Rainfall=6.40"

Printed 7/22/2026

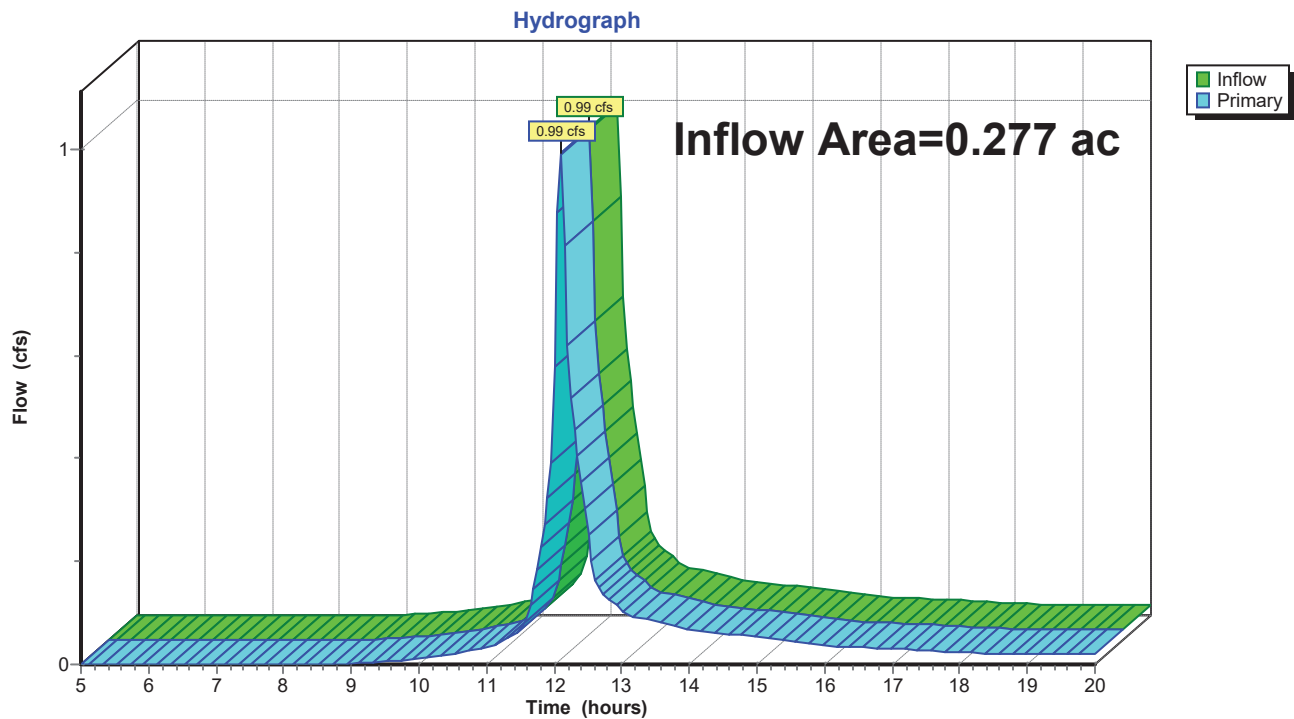
Page 7

Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.277 ac, 20.68% Impervious, Inflow Depth > 2.90" for 25-Year Storm Event event
Inflow = 0.99 cfs @ 12.09 hrs, Volume= 0.067 af
Primary = 0.99 cfs @ 12.09 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot



Existing

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Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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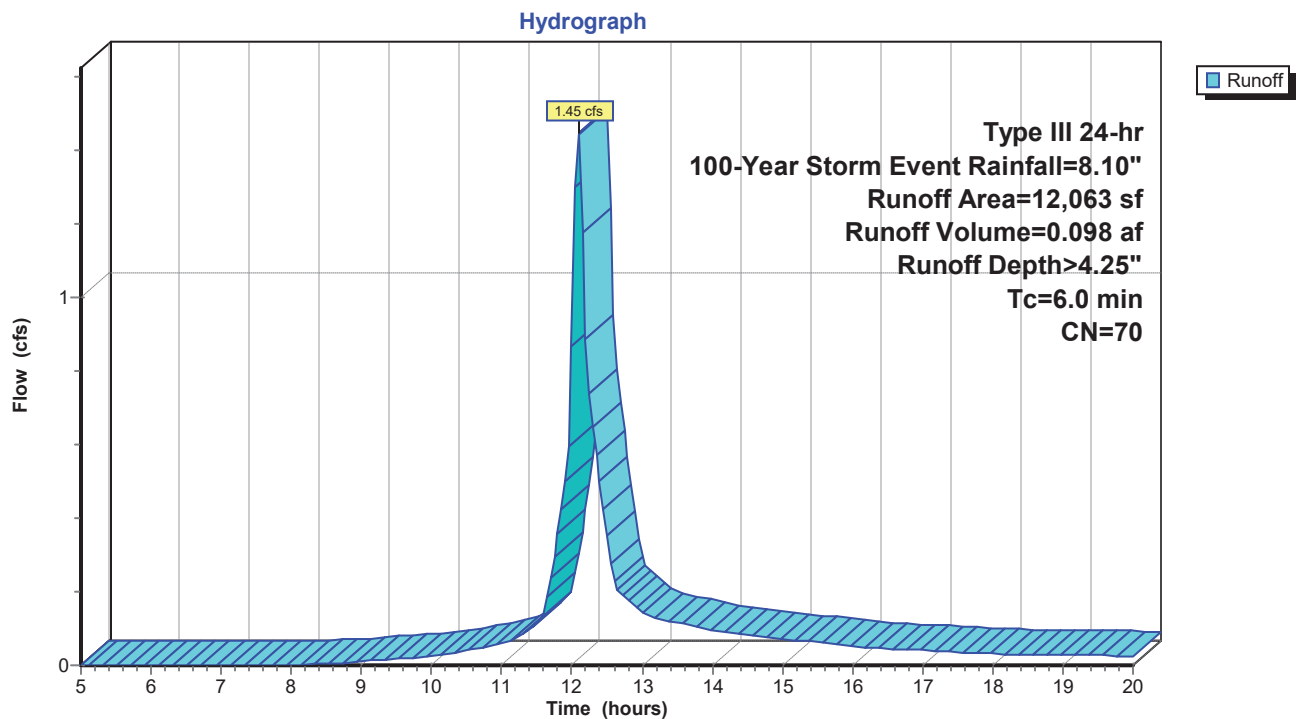
Summary for Subcatchment 1: Existing Lot

Runoff = 1.45 cfs @ 12.09 hrs, Volume= 0.098 af, Depth> 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Event Rainfall=8.10"

	Area (sf)	CN	Description
*	2,495	98	Impervious - Dwelling, Driveway, Shed, Walks
	6,060	61	>75% Grass cover, Good, HSG B
	3,508	67	Brush, Poor, HSG B
	12,063	70	Weighted Average
	9,568		79.32% Pervious Area
	2,495		20.68% Impervious Area

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

Subcatchment 1: Existing Lot

Existing

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Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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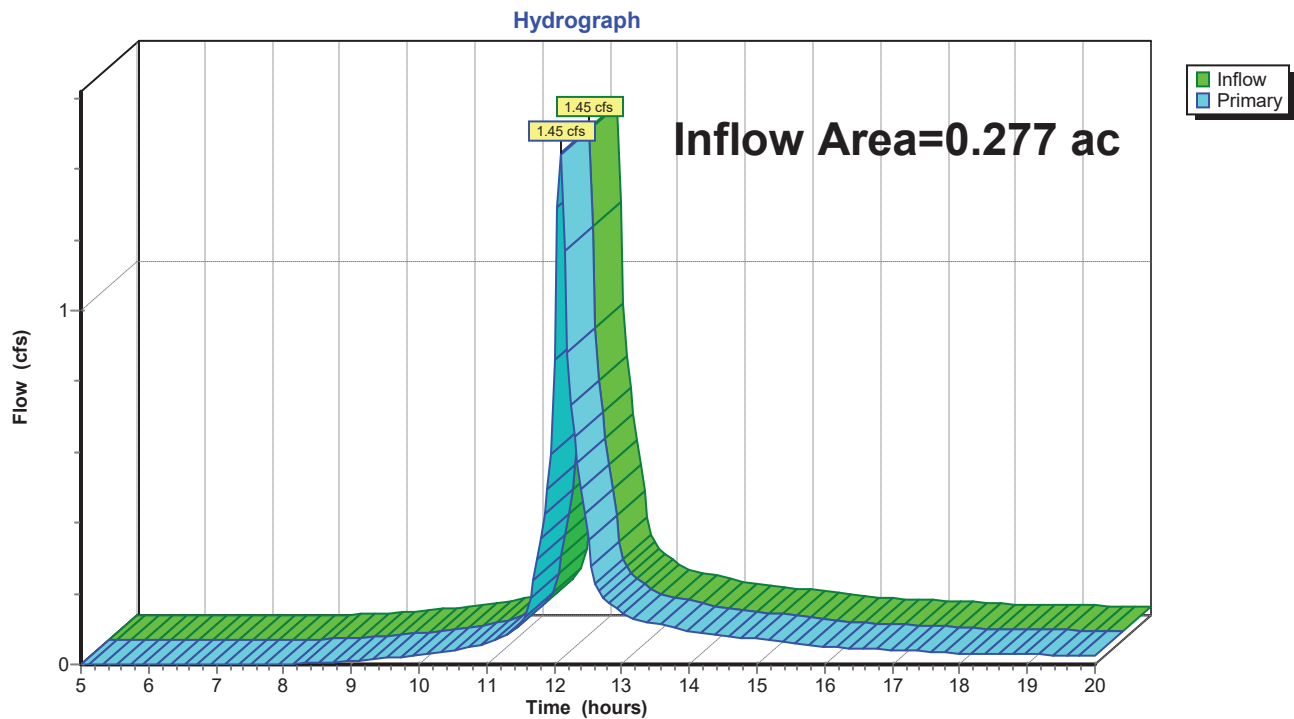
Page 9

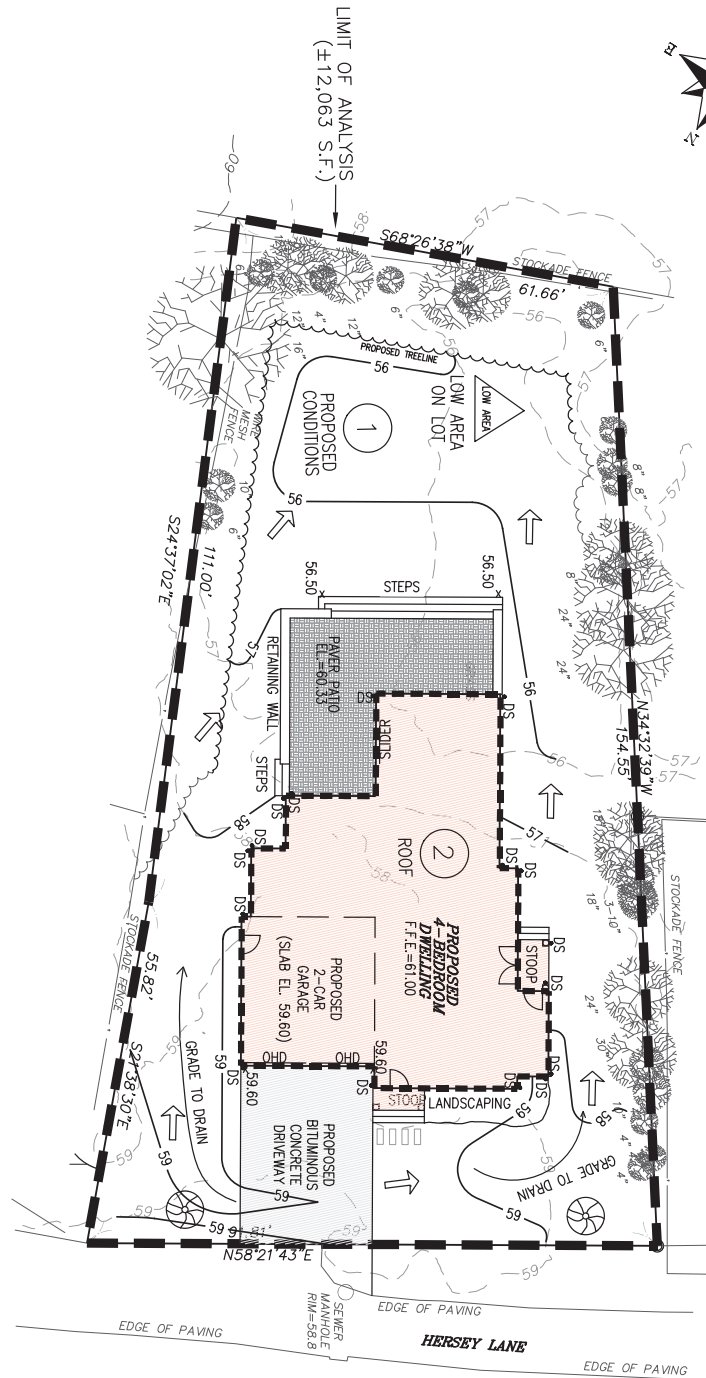
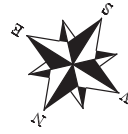
Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.277 ac, 20.68% Impervious, Inflow Depth > 4.25" for 100-Year Storm Event event
Inflow = 1.45 cfs @ 12.09 hrs, Volume= 0.098 af
Primary = 1.45 cfs @ 12.09 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot





769 Plain Street, Unit C
Marshfield, MA 02050
Tel. (781) 319-0100 Fax (781) 834-4783

project:
PROPOSED RECONSTRUCTION
40A HERSEY STREET
HINGHAM, MA 02043

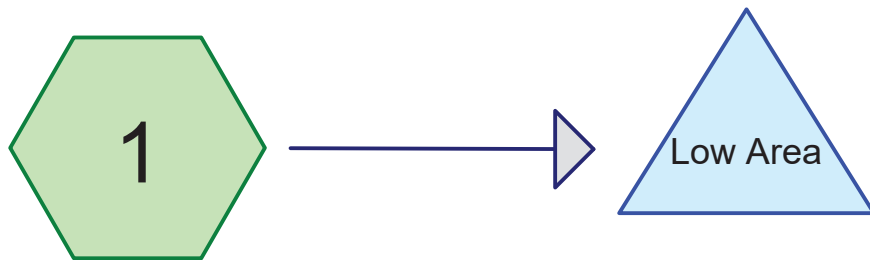
client:
MORGAN RESIDENTIAL LLC
15 MARYKNOLL DRIVE
HINGHAM, MA 02043

drawing title:
PROPOSED DRAINAGE AREAS

scale:
1"=20'

date:
JUL. 10, 2026

job no.:
SE26-2001

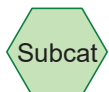


Proposed Conditions Low Area on Lot



Roof

Infiltration System



Routing Diagram for Proposed

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Proposed

Prepared by {enter your company name here}

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Type III 24-hr 2-Year Storm Event Rainfall=3.40"

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Page 2

Summary for Subcatchment 1: Proposed Conditions

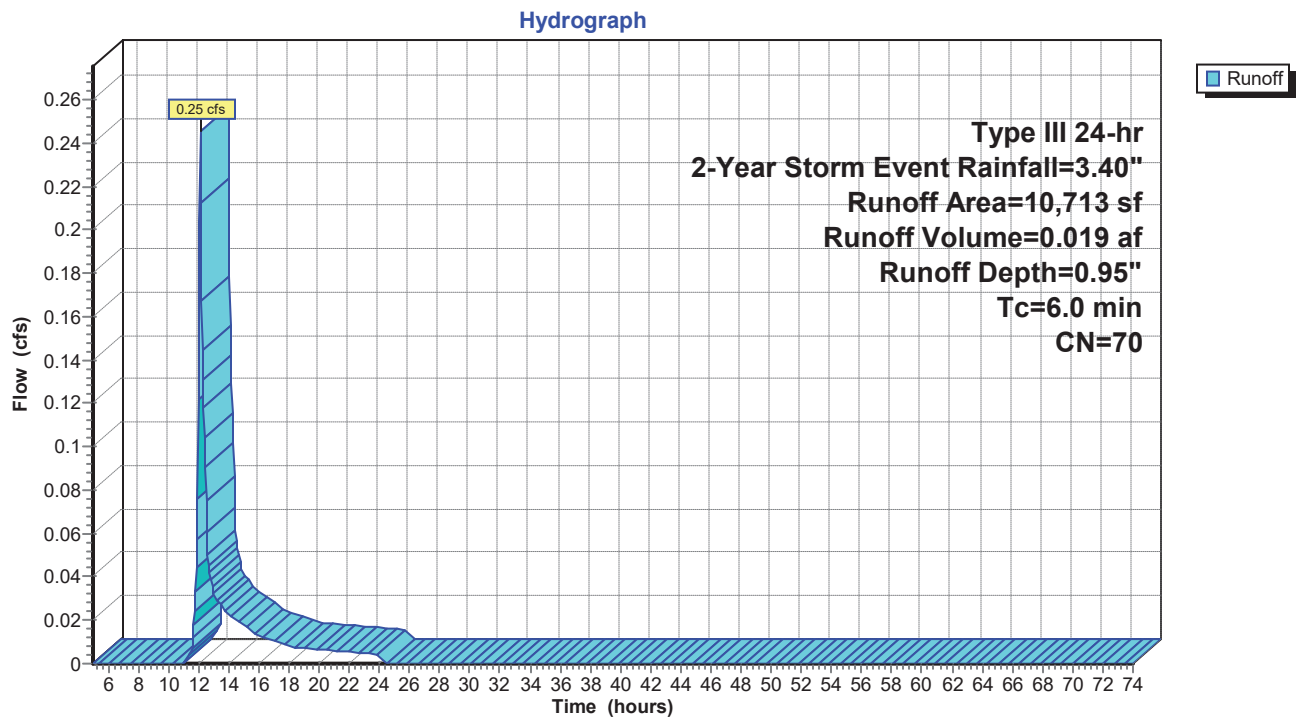
Runoff = 0.25 cfs @ 12.10 hrs, Volume= 0.019 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.40"

	Area (sf)	CN	Description
*	611	98	Driveway
*	71	98	Covered Stoops
*	954	98	Building Roof
*	796	98	Patio
	1,900	67	Brush, Poor, HSG B
	6,381	61	>75% Grass cover, Good, HSG B
	10,713	70	Weighted Average
	8,281		77.30% Pervious Area
	2,432		22.70% Impervious Area

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

Subcatchment 1: Proposed Conditions



Proposed

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Type III 24-hr 2-Year Storm Event Rainfall=3.40"

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Page 3

Summary for Subcatchment 2: Roof

Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 3.11"

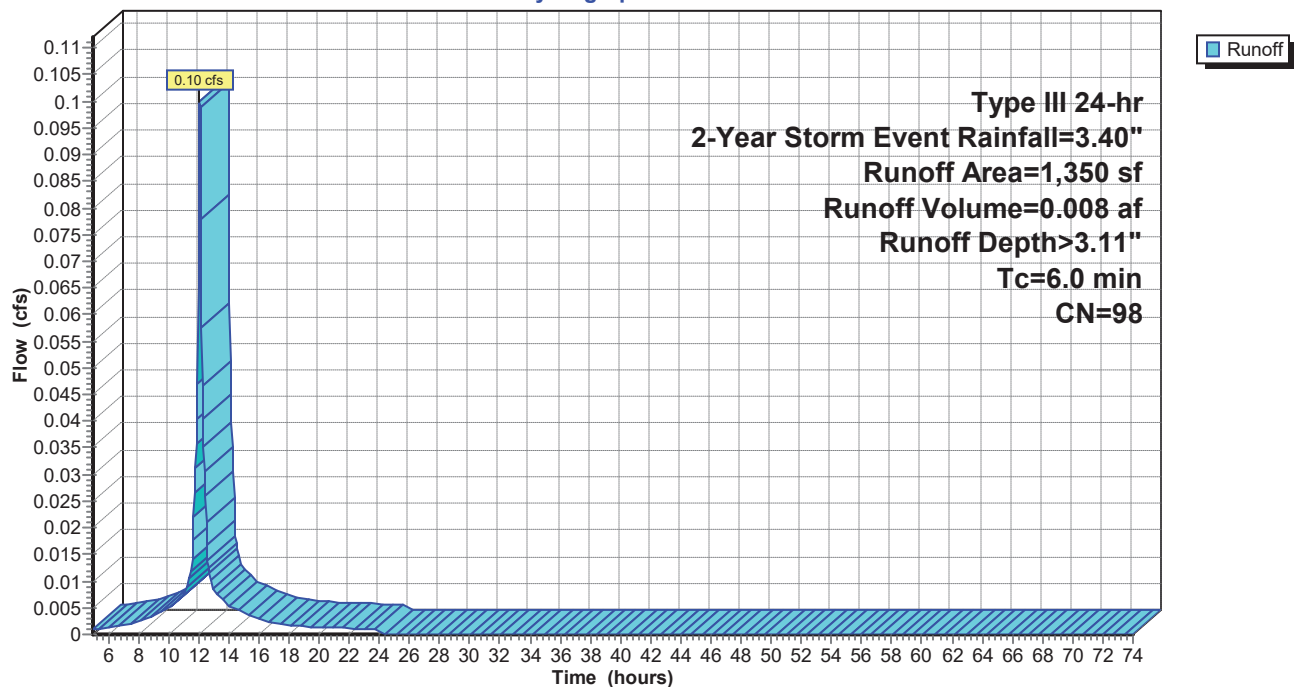
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.40"

	Area (sf)	CN	Description
*	1,350	98	Roof
	1,350		100.00% Impervious Area

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

Subcatchment 2: Roof

Hydrograph



Proposed

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Type III 24-hr 2-Year Storm Event Rainfall=3.40"

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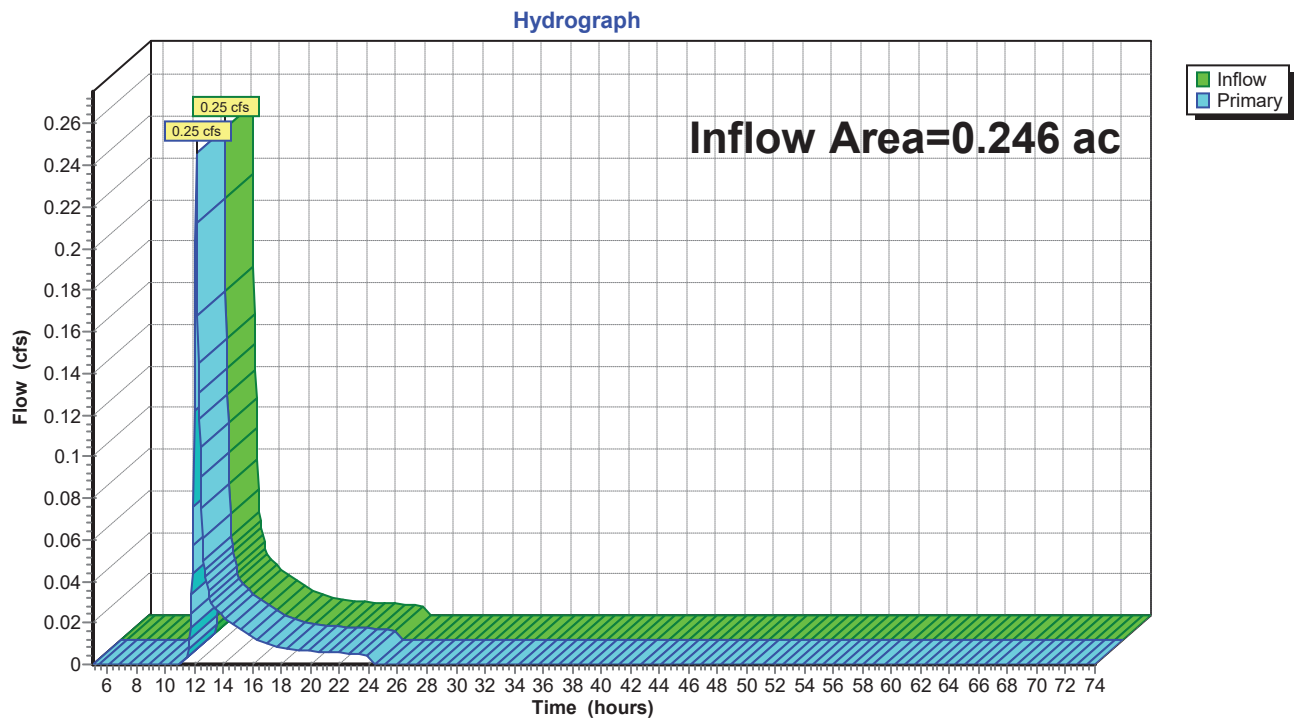
Page 4

Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.246 ac, 22.70% Impervious, Inflow Depth = 0.95" for 2-Year Storm Event event
Inflow = 0.25 cfs @ 12.10 hrs, Volume= 0.019 af
Primary = 0.25 cfs @ 12.10 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot



Proposed

Type III 24-hr 2-Year Storm Event Rainfall=3.40"

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Page 5

Summary for Pond P1: Infiltration System

Inflow Area = 0.031 ac, 100.00% Impervious, Inflow Depth > 3.11" for 2-Year Storm Event event
 Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af
 Outflow = 0.02 cfs @ 11.70 hrs, Volume= 0.008 af, Atten= 84%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.70 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.70' @ 12.57 hrs Surf.Area= 285 sf Storage= 98 cf

Plug-Flow detention time= 36.3 min calculated for 0.008 af (100% of inflow)
 Center-of-Mass det. time= 36.1 min (801.7 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	223 cf	8.50'W x 33.50'L x 2.54'H Field A 724 cf Overall - 167 cf Embedded = 557 cf x 40.0% Voids
#2A	0.50'	167 cf	Cultec R-150XLHD x 6 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 2 rows
		390 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.70 hrs HW=0.03' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Proposed

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Type III 24-hr 2-Year Storm Event Rainfall=3.40"

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Pond P1: Infiltration System - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger® 150XLHD)

Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf

Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap

Row Length Adjustment= +0.75' x 2.65 sf x 2 rows

33.0" Wide + 12.0" Spacing = 45.0" C-C Row Spacing

3 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 31.50' Row Length +12.0" End Stone x 2 =
33.50' Base Length

2 Rows x 33.0" Wide + 12.0" Spacing x 1 + 12.0" Side Stone x 2 = 8.50' Base Width

6.0" Base + 18.5" Chamber Height + 6.0" Cover = 2.54' Field Height

6 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 2 Rows = 166.9 cf Chamber Storage

723.7 cf Field - 166.9 cf Chambers = 556.9 cf Stone x 40.0% Voids = 222.7 cf Stone Storage

Chamber Storage + Stone Storage = 389.6 cf = 0.009 af

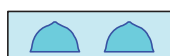
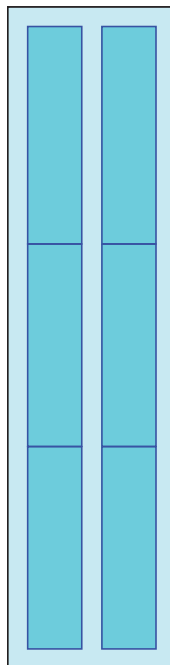
Overall Storage Efficiency = 53.8%

Overall System Size = 33.50' x 8.50' x 2.54'

6 Chambers

26.8 cy Field

20.6 cy Stone



Proposed

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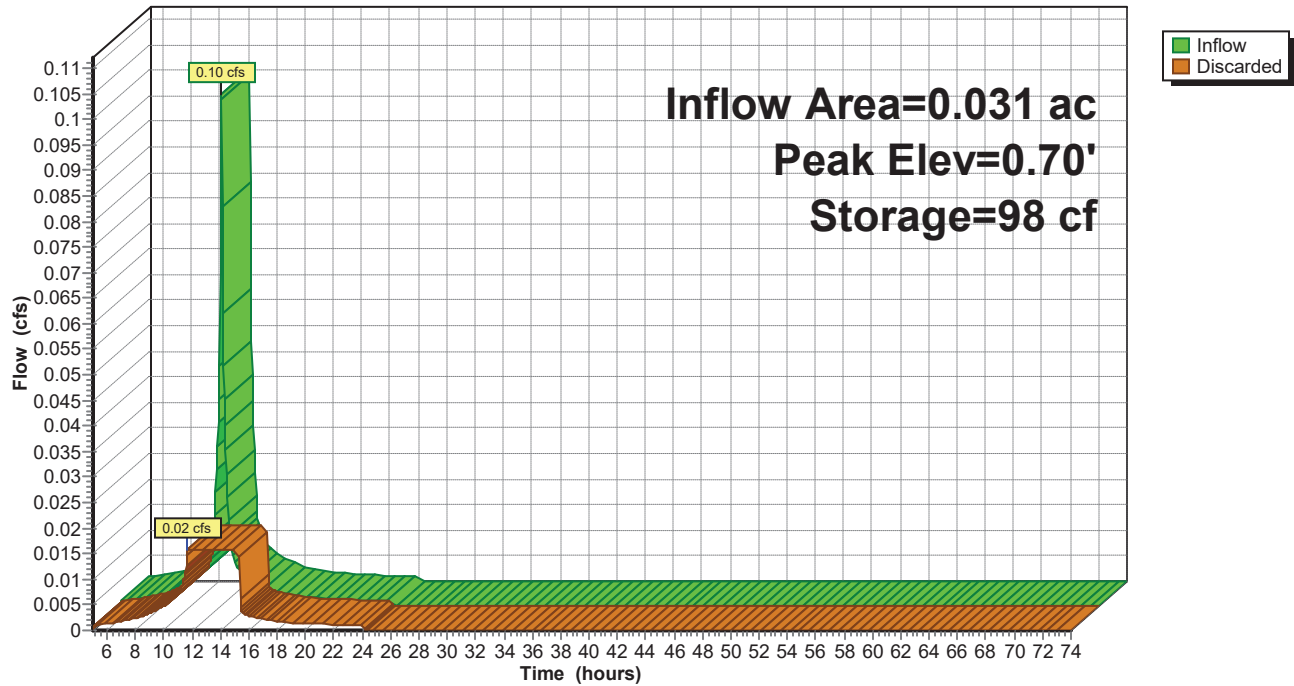
Type III 24-hr 2-Year Storm Event Rainfall=3.40"

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Pond P1: Infiltration System

Hydrograph



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Type III 24-hr 10-Year Storm Event Rainfall=5.20"

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Summary for Subcatchment 1: Proposed Conditions

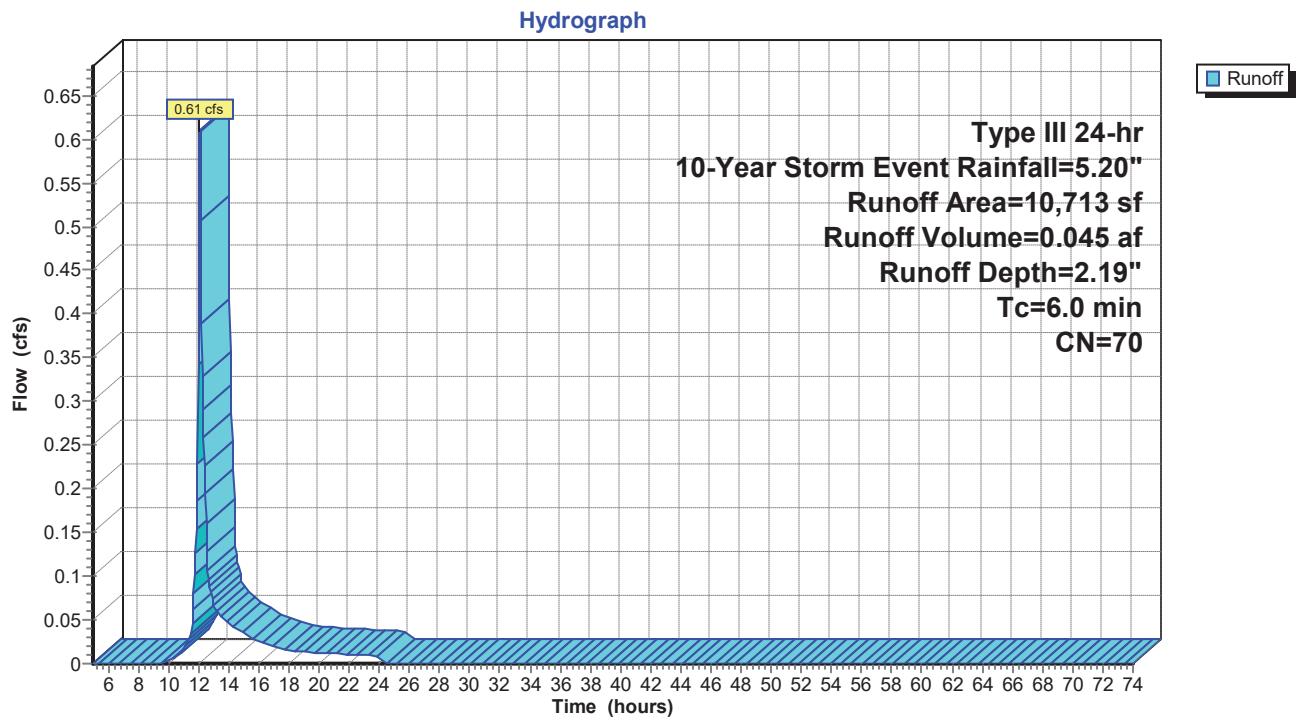
Runoff = 0.61 cfs @ 12.10 hrs, Volume= 0.045 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Event Rainfall=5.20"

	Area (sf)	CN	Description
*	611	98	Driveway
*	71	98	Covered Stoops
*	954	98	Building Roof
*	796	98	Patio
	1,900	67	Brush, Poor, HSG B
	6,381	61	>75% Grass cover, Good, HSG B
	10,713	70	Weighted Average
	8,281		77.30% Pervious Area
	2,432		22.70% Impervious Area

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

Subcatchment 1: Proposed Conditions



Proposed

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Type III 24-hr 10-Year Storm Event Rainfall=5.20"

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Summary for Subcatchment 2: Roof

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 4.83"

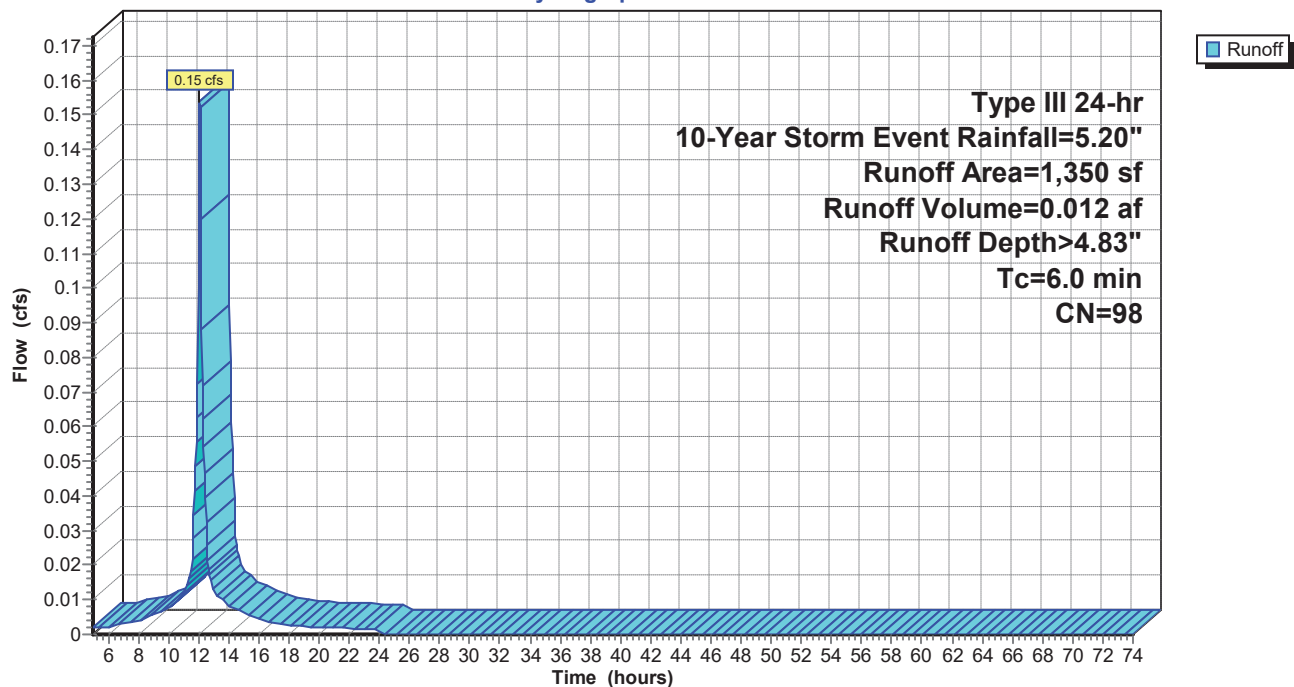
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Event Rainfall=5.20"

	Area (sf)	CN	Description
*	1,350	98	Roof
	1,350		100.00% Impervious Area

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

Subcatchment 2: Roof

Hydrograph



Proposed

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Type III 24-hr 10-Year Storm Event Rainfall=5.20"

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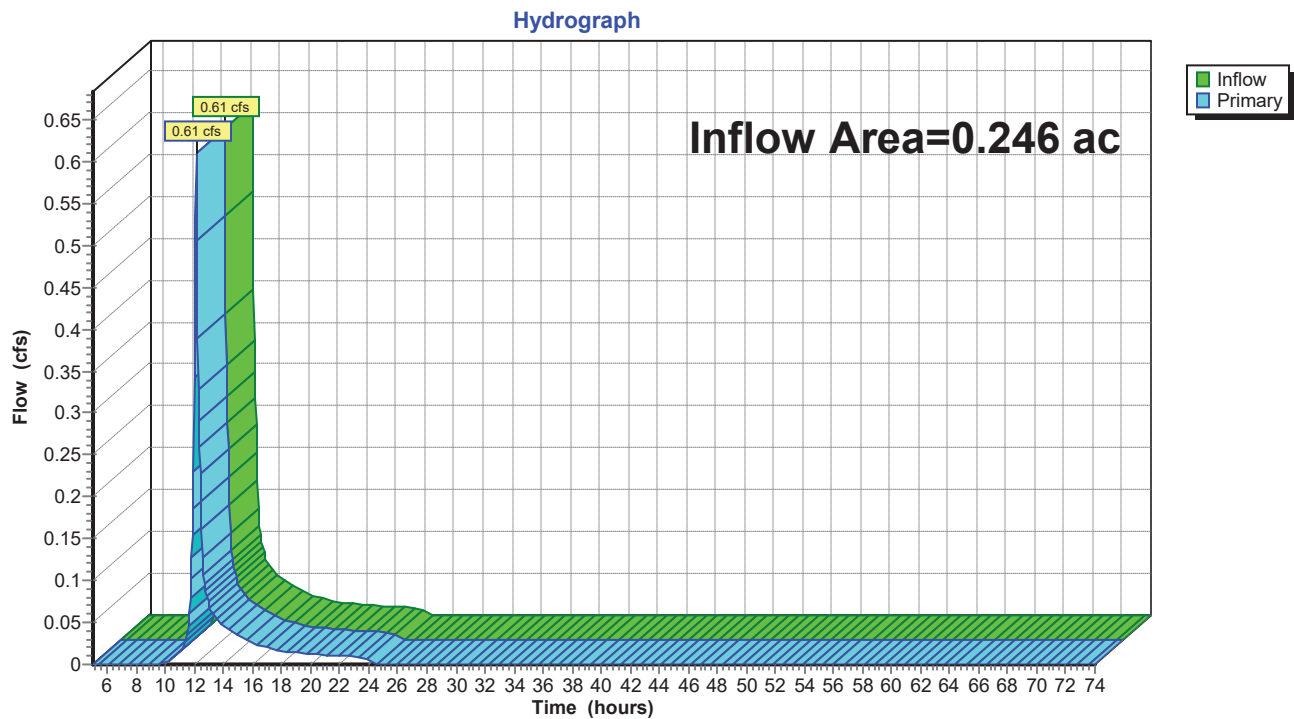
Page 10

Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.246 ac, 22.70% Impervious, Inflow Depth = 2.19" for 10-Year Storm Event event
Inflow = 0.61 cfs @ 12.10 hrs, Volume= 0.045 af
Primary = 0.61 cfs @ 12.10 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot



Proposed

Type III 24-hr 10-Year Storm Event Rainfall=5.20"

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Summary for Pond P1: Infiltration System

Inflow Area = 0.031 ac, 100.00% Impervious, Inflow Depth > 4.83" for 10-Year Storm Event event
 Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
 Outflow = 0.02 cfs @ 11.45 hrs, Volume= 0.012 af, Atten= 90%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.45 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
 Peak Elev= 1.13' @ 12.82 hrs Surf.Area= 285 sf Storage= 183 cf

Plug-Flow detention time= 78.4 min calculated for 0.012 af (100% of inflow)
 Center-of-Mass det. time= 78.1 min (840.3 - 762.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	223 cf	8.50'W x 33.50'L x 2.54'H Field A 724 cf Overall - 167 cf Embedded = 557 cf x 40.0% Voids
#2A	0.50'	167 cf	Cultec R-150XLHD x 6 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 2 rows
		390 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.45 hrs HW=0.03' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Proposed

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Type III 24-hr 10-Year Storm Event Rainfall=5.20"

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Pond P1: Infiltration System - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger® 150XLHD)

Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf

Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap

Row Length Adjustment= +0.75' x 2.65 sf x 2 rows

33.0" Wide + 12.0" Spacing = 45.0" C-C Row Spacing

3 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 31.50' Row Length +12.0" End Stone x 2 = 33.50' Base Length

2 Rows x 33.0" Wide + 12.0" Spacing x 1 + 12.0" Side Stone x 2 = 8.50' Base Width

6.0" Base + 18.5" Chamber Height + 6.0" Cover = 2.54' Field Height

6 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 2 Rows = 166.9 cf Chamber Storage

723.7 cf Field - 166.9 cf Chambers = 556.9 cf Stone x 40.0% Voids = 222.7 cf Stone Storage

Chamber Storage + Stone Storage = 389.6 cf = 0.009 af

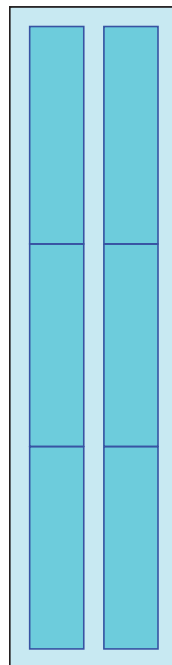
Overall Storage Efficiency = 53.8%

Overall System Size = 33.50' x 8.50' x 2.54'

6 Chambers

26.8 cy Field

20.6 cy Stone



Proposed

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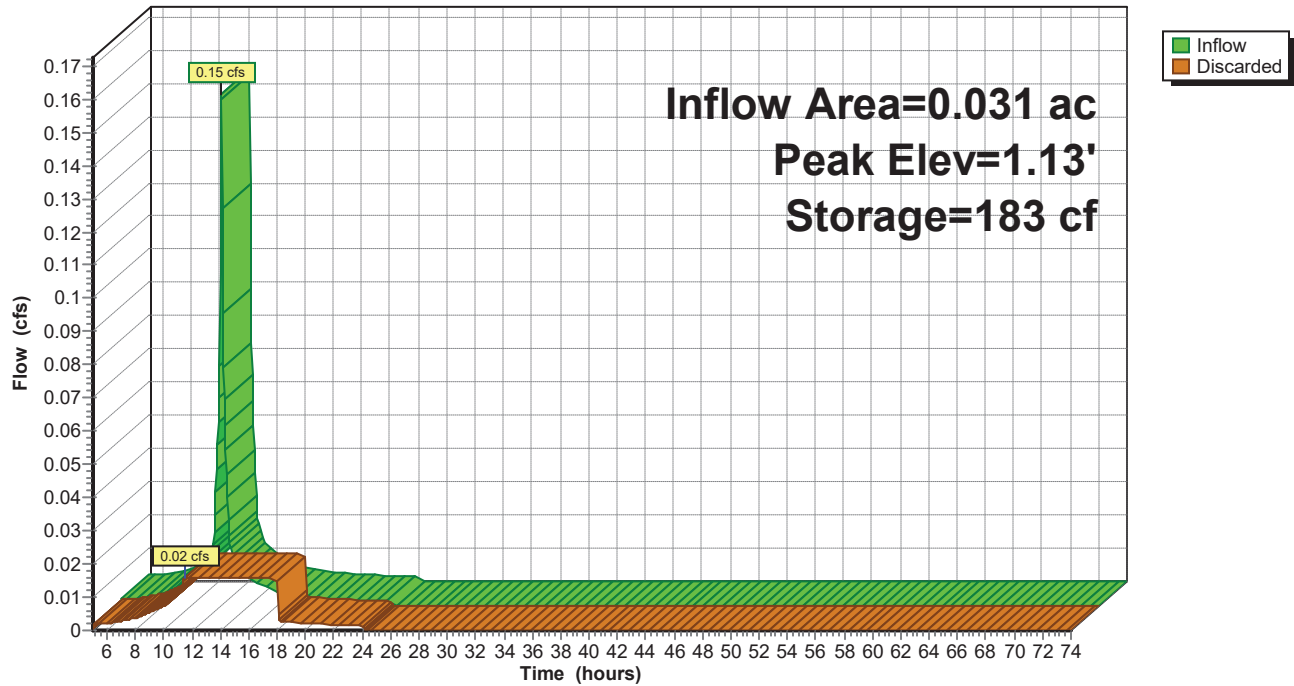
Type III 24-hr 10-Year Storm Event Rainfall=5.20"

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Pond P1: Infiltration System

Hydrograph



Proposed

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Type III 24-hr 25-Year Storm Event Rainfall=6.40"

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Summary for Subcatchment 1: Proposed Conditions

Runoff = 0.88 cfs @ 12.09 hrs, Volume= 0.064 af, Depth= 3.13"

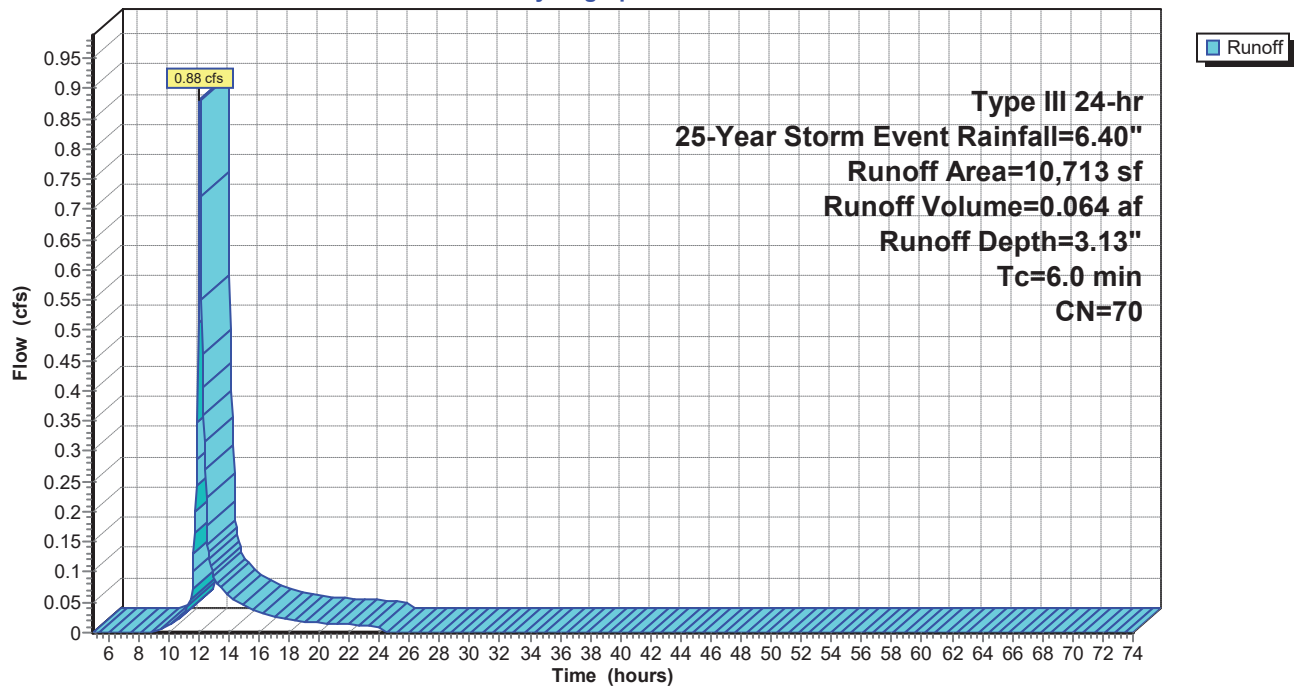
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Event Rainfall=6.40"

	Area (sf)	CN	Description
*	611	98	Driveway
*	71	98	Covered Stoops
*	954	98	Building Roof
*	796	98	Patio
	1,900	67	Brush, Poor, HSG B
	6,381	61	>75% Grass cover, Good, HSG B
	10,713	70	Weighted Average
	8,281		77.30% Pervious Area
	2,432		22.70% Impervious Area

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

Subcatchment 1: Proposed Conditions

Hydrograph



Proposed

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Type III 24-hr 25-Year Storm Event Rainfall=6.40"

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Summary for Subcatchment 2: Roof

Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 5.97"

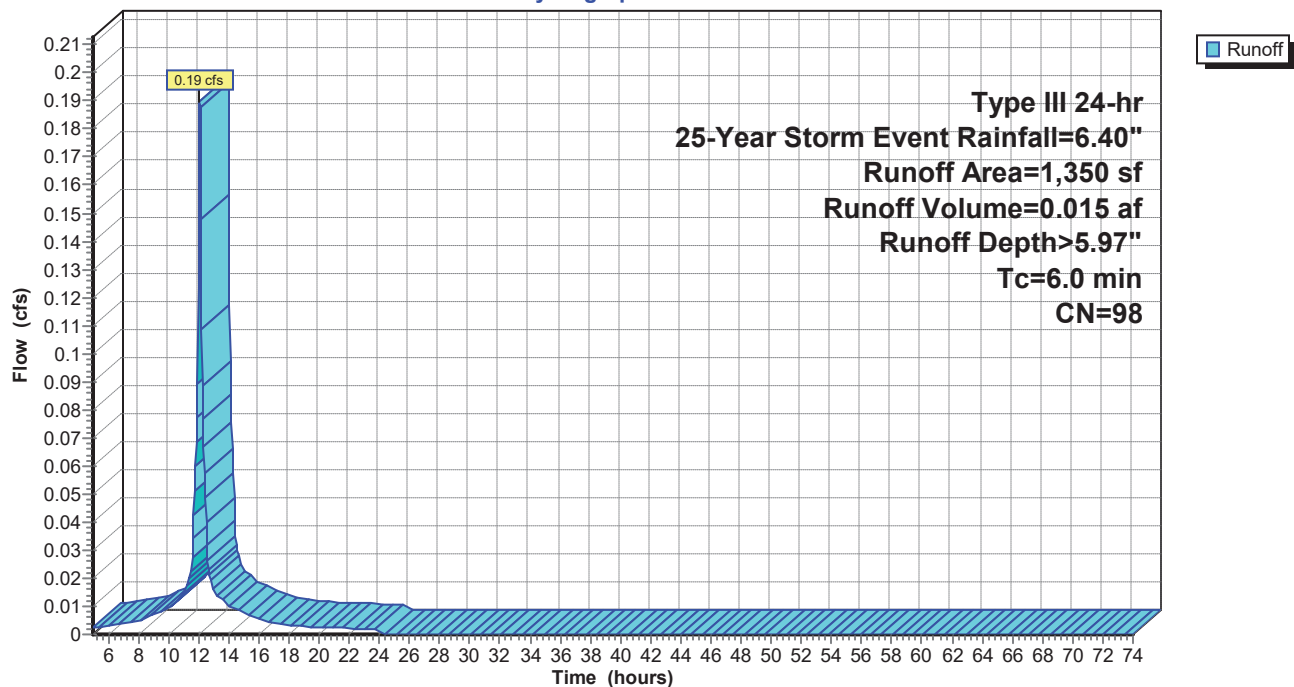
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Event Rainfall=6.40"

	Area (sf)	CN	Description
*	1,350	98	Roof
	1,350		100.00% Impervious Area

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

Subcatchment 2: Roof

Hydrograph



Proposed

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Type III 24-hr 25-Year Storm Event Rainfall=6.40"

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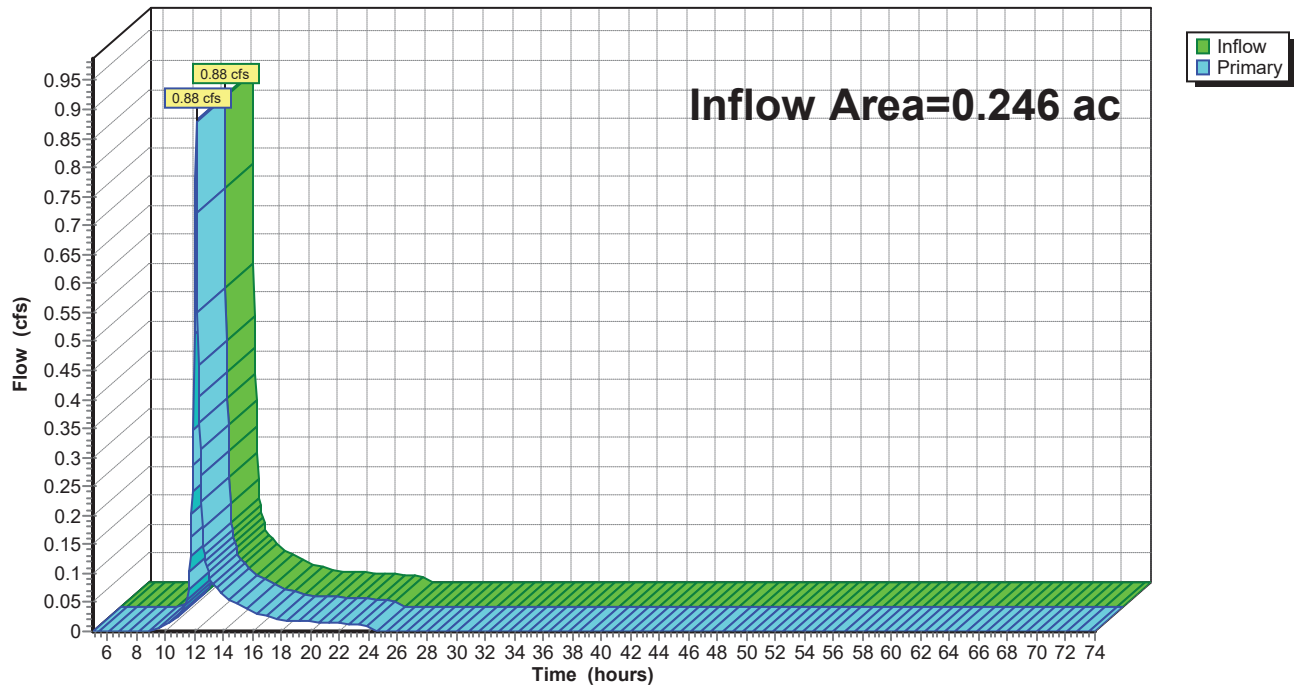
Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.246 ac, 22.70% Impervious, Inflow Depth = 3.13" for 25-Year Storm Event event
Inflow = 0.88 cfs @ 12.09 hrs, Volume= 0.064 af
Primary = 0.88 cfs @ 12.09 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot

Hydrograph



Proposed

Type III 24-hr 25-Year Storm Event Rainfall=6.40"

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Summary for Pond P1: Infiltration System

Inflow Area = 0.031 ac, 100.00% Impervious, Inflow Depth > 5.97" for 25-Year Storm Event event
 Inflow = 0.19 cfs @ 12.09 hrs, Volume= 0.015 af
 Outflow = 0.02 cfs @ 11.25 hrs, Volume= 0.015 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.25 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
 Peak Elev= 1.47' @ 13.02 hrs Surf.Area= 285 sf Storage= 247 cf

Plug-Flow detention time= 113.0 min calculated for 0.015 af (100% of inflow)
 Center-of-Mass det. time= 112.6 min (873.8 - 761.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	223 cf	8.50'W x 33.50'L x 2.54'H Field A 724 cf Overall - 167 cf Embedded = 557 cf x 40.0% Voids
#2A	0.50'	167 cf	Cultec R-150XLHD x 6 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 2 rows
		390 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.25 hrs HW=0.03' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Proposed

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Type III 24-hr 25-Year Storm Event Rainfall=6.40"

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Pond P1: Infiltration System - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger® 150XLHD)

Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf

Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap

Row Length Adjustment= +0.75' x 2.65 sf x 2 rows

33.0" Wide + 12.0" Spacing = 45.0" C-C Row Spacing

3 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 31.50' Row Length +12.0" End Stone x 2 = 33.50' Base Length

2 Rows x 33.0" Wide + 12.0" Spacing x 1 + 12.0" Side Stone x 2 = 8.50' Base Width

6.0" Base + 18.5" Chamber Height + 6.0" Cover = 2.54' Field Height

6 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 2 Rows = 166.9 cf Chamber Storage

723.7 cf Field - 166.9 cf Chambers = 556.9 cf Stone x 40.0% Voids = 222.7 cf Stone Storage

Chamber Storage + Stone Storage = 389.6 cf = 0.009 af

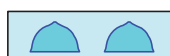
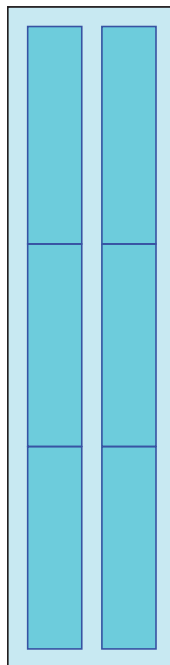
Overall Storage Efficiency = 53.8%

Overall System Size = 33.50' x 8.50' x 2.54'

6 Chambers

26.8 cy Field

20.6 cy Stone



Proposed

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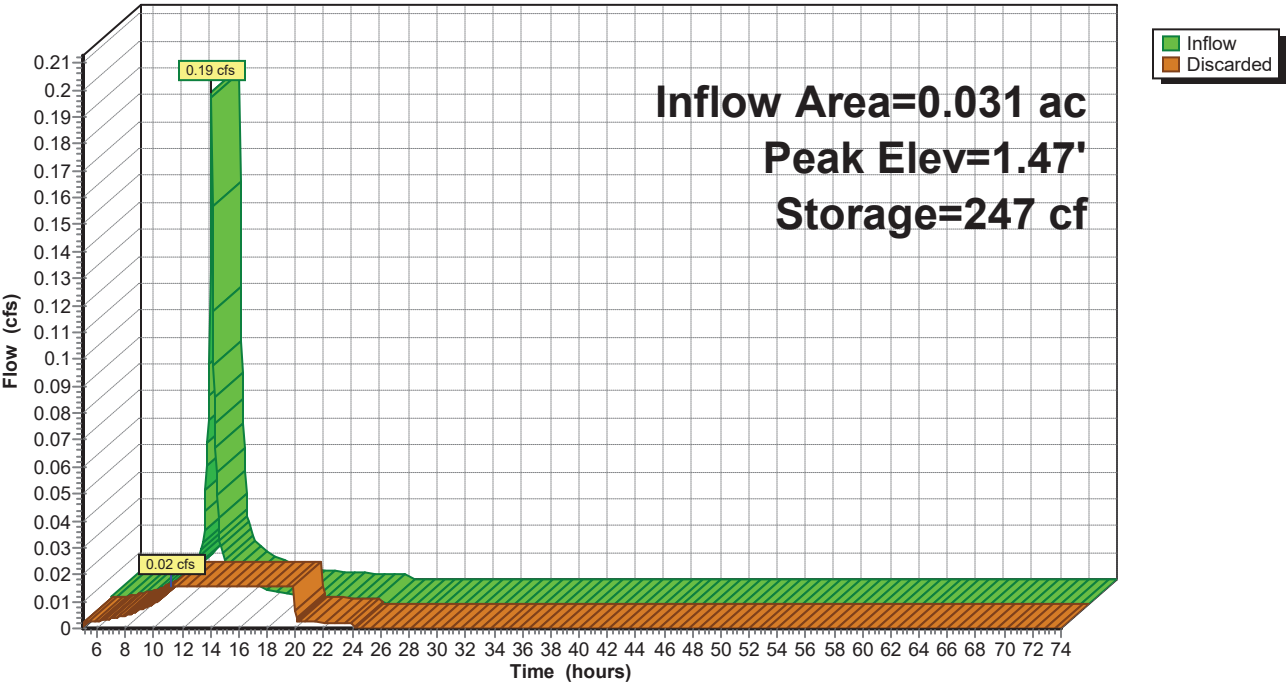
Type III 24-hr 25-Year Storm Event Rainfall=6.40"

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Pond P1: Infiltration System

Hydrograph



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Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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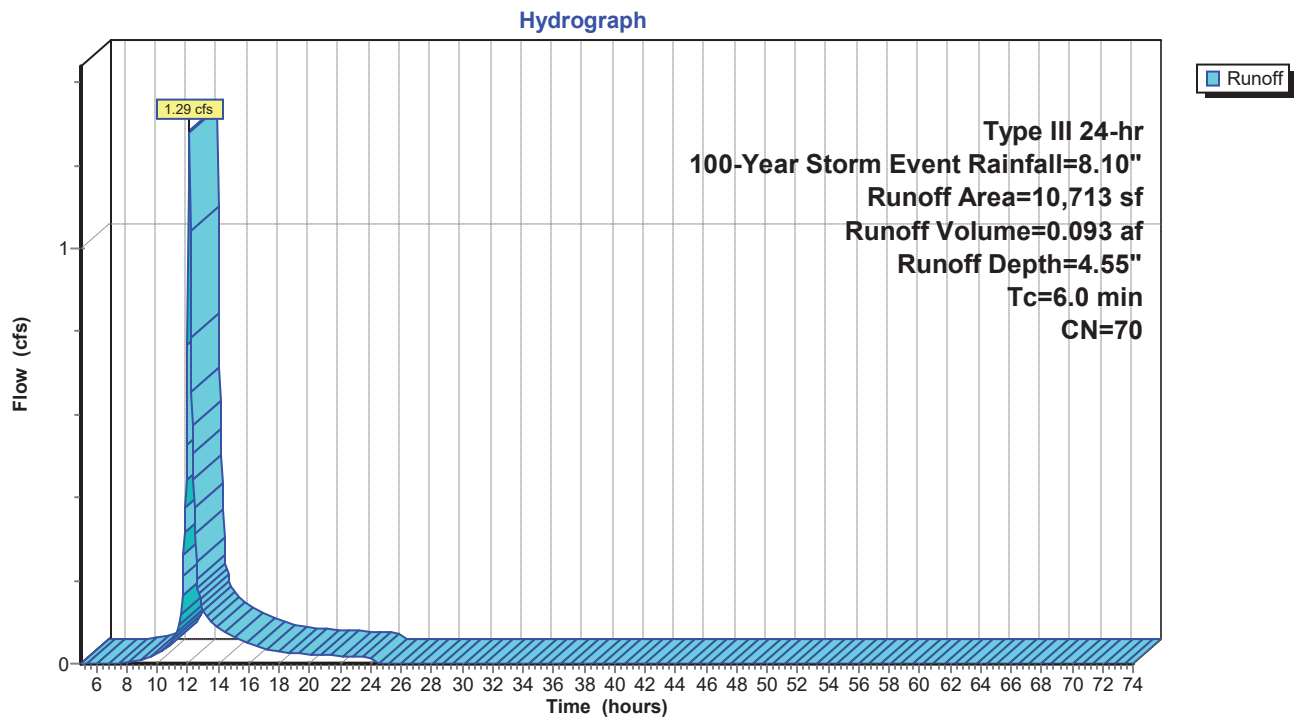
Summary for Subcatchment 1: Proposed Conditions

Runoff = 1.29 cfs @ 12.09 hrs, Volume= 0.093 af, Depth= 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Event Rainfall=8.10"

	Area (sf)	CN	Description
*	611	98	Driveway
*	71	98	Covered Stoops
*	954	98	Building Roof
*	796	98	Patio
	1,900	67	Brush, Poor, HSG B
	6,381	61	>75% Grass cover, Good, HSG B
	10,713	70	Weighted Average
	8,281		77.30% Pervious Area
	2,432		22.70% Impervious Area

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

Subcatchment 1: Proposed Conditions

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Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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Summary for Subcatchment 2: Roof

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 7.59"

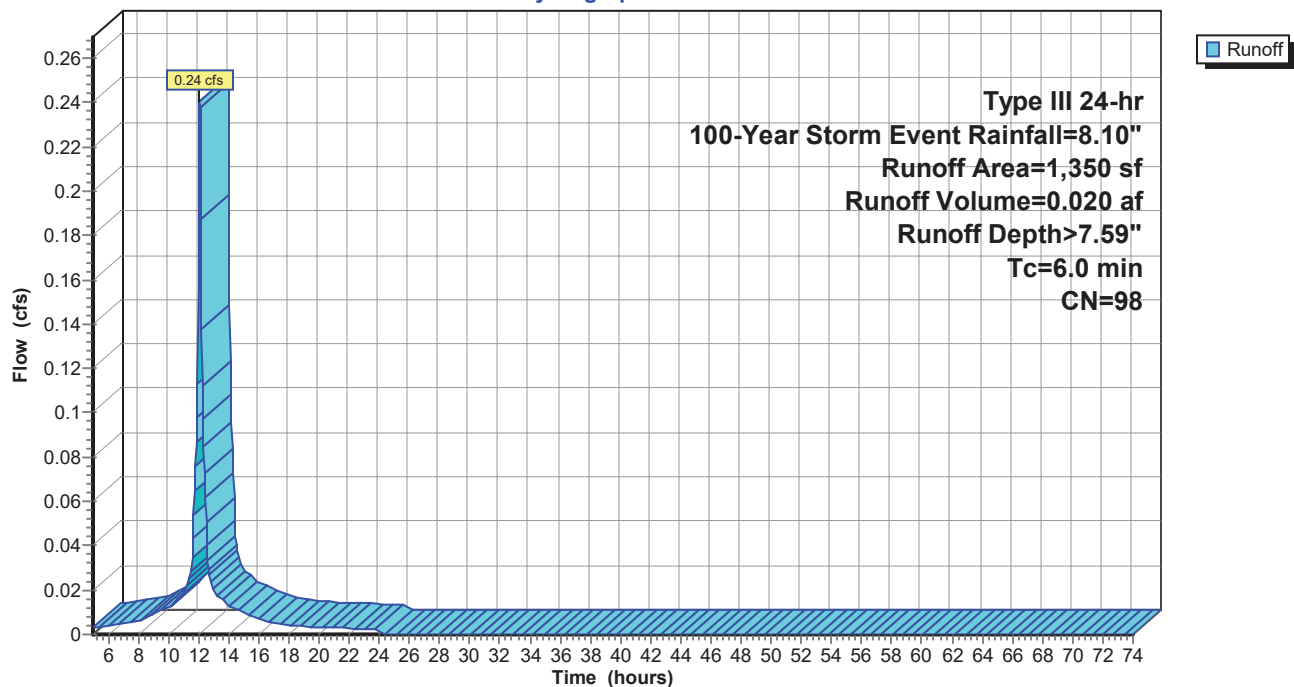
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Event Rainfall=8.10"

	Area (sf)	CN	Description
*	1,350	98	Roof
	1,350		100.00% Impervious Area

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

Subcatchment 2: Roof

Hydrograph



Proposed

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Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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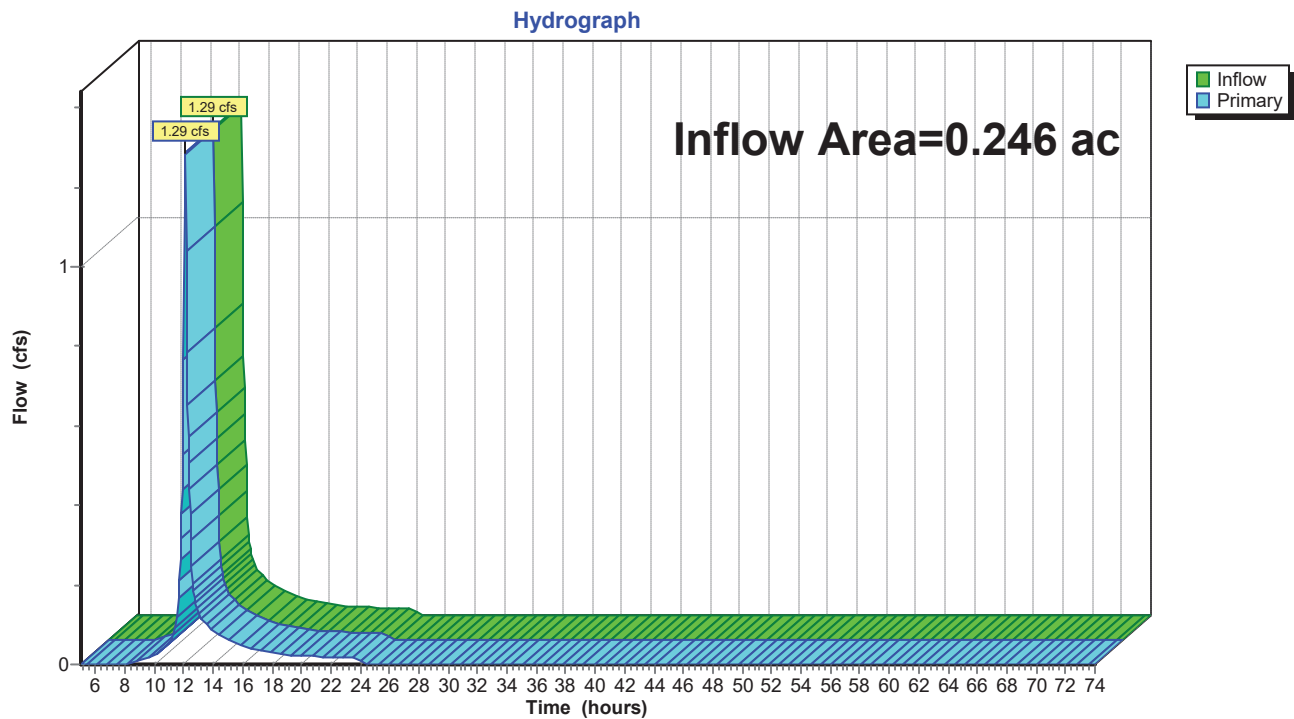
Page 22

Summary for Pond Low Area: Low Area on Lot

Inflow Area = 0.246 ac, 22.70% Impervious, Inflow Depth = 4.55" for 100-Year Storm Event event
Inflow = 1.29 cfs @ 12.09 hrs, Volume= 0.093 af
Primary = 1.29 cfs @ 12.09 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs

Pond Low Area: Low Area on Lot



Proposed

Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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Summary for Pond P1: Infiltration System

Inflow Area = 0.031 ac, 100.00% Impervious, Inflow Depth > 7.59" for 100-Year Storm Event event
 Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.020 af
 Outflow = 0.02 cfs @ 10.75 hrs, Volume= 0.020 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 10.75 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 5.00-74.00 hrs, dt= 0.05 hrs
 Peak Elev= 2.16' @ 13.52 hrs Surf.Area= 285 sf Storage= 346 cf

Plug-Flow detention time= 170.0 min calculated for 0.020 af (100% of inflow)
 Center-of-Mass det. time= 169.6 min (929.9 - 760.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	223 cf	8.50'W x 33.50'L x 2.54'H Field A 724 cf Overall - 167 cf Embedded = 557 cf x 40.0% Voids
#2A	0.50'	167 cf	Cultec R-150XLHD x 6 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 2 rows
		390 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 10.75 hrs HW=0.03' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Proposed

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Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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Pond P1: Infiltration System - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger® 150XLHD)

Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf

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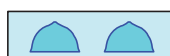
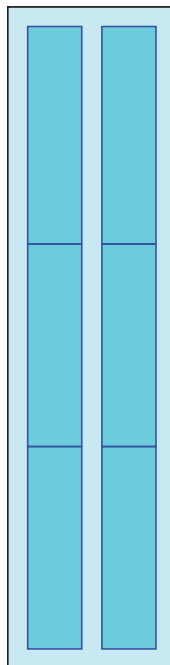
Overall Storage Efficiency = 53.8%

Overall System Size = 33.50' x 8.50' x 2.54'

6 Chambers

26.8 cy Field

20.6 cy Stone



Proposed

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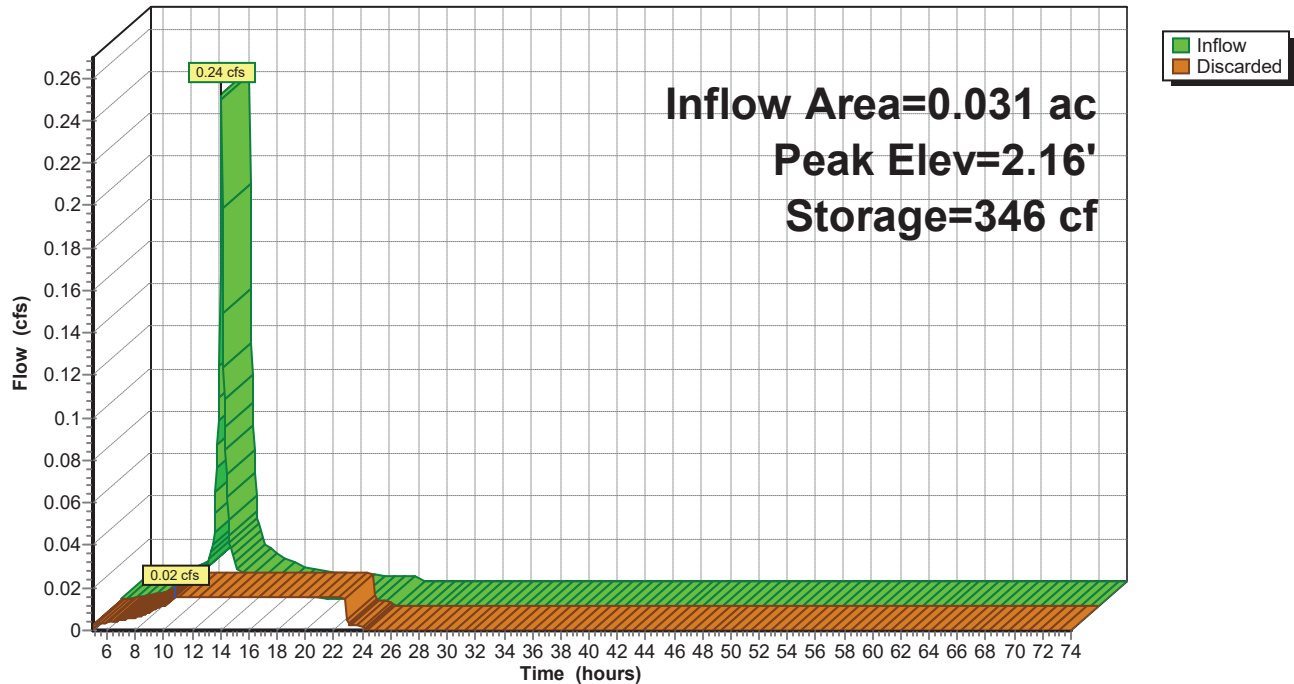
Type III 24-hr 100-Year Storm Event Rainfall=8.10"

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Pond P1: Infiltration System

Hydrograph



Proposed*Type III 24-hr 100-Year Storm Event Rainfall=8.10"*

Prepared by {enter your company name here}

Printed 7/17/2026

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Hydrograph for Pond P1: Infiltration System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
5.00	0.00	0	0.00	0.00
7.50	0.01	1	0.01	0.01
10.00	0.01	2	0.02	0.01
12.50	0.05	320	1.94	0.02
15.00	0.01	327	1.99	0.02
17.50	0.00	245	1.46	0.02
20.00	0.00	137	0.89	0.02
22.50	0.00	20	0.18	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

**ATTACHMENT 7 – STORMWATER MANAGEMENT SYSTEM OPERATION &
MAINTENANCE PLAN & LONG TERM POLLUTION PREVENTION PLAN**

**STORMWATER MANAGEMENT SYSTEM OPERATION &
MAINTENANCE PLAN & LONG TERM POLLUTION
PREVENTION PLAN**

July 2026

PROPOSED RESIDENTIAL RECONSTRUCTION PROJECT

*40A Hersey Street
Hingham, MA 02043*

Owner of Record: Four Sons LLC
643 Manley Street
West Bridgewater, MA 02379

Party Responsible for Plan:
Morgan Residential LLC
c/o Jake Morgan
15 Maryknoll Drive
Hingham, MA 02043

Source of Funding

Implementation of this Stormwater Management System Operation & Maintenance Plan & Long Term Pollution Prevention Plan will be the responsibility of the property owner to include its successor and/or assigns, as the same may appear on record with the Plymouth Country Registry of Deeds.

Post-Construction Inspection and Maintenance

The Stormwater Management System consists of a subsurface infiltration system that has been designed to infiltrate stormwater flows from tributary portions of the new single-family dwelling roof. Since runoff being routed into the infiltration system is from roof areas and is considered “clean”, significant sediment is not expected to be deposited within the system.

After construction, the system shall be inspected for proper function. Inspection and routine maintenance of gutters and roof drains is required to prevent sediment and debris from entering the system. Inspections of gutters and downspouts and system inspection port shall be done quarterly and cleaned as necessary.

Inspection and Monitoring Log
Stormwater Management System Operation & Maintenance Plan
40A Hersey Street, Hingham, MA

Date	Structure or Activity	Date Completed	Depth of Sediment (if applicable)	Action Taken	Maintenance Contractor

Date	Structure or Activity	Date Completed	Depth of Sediment (if applicable)	Action Taken	Maintenance Contractor

Comments:

ATTACHMENT 8 – CONSTRUCTION PERIOD POLLUTION PREVENTION PLAN

CONSTRUCTION PERIOD POLLUTION PREVENTION PLAN

July 2026

PROPOSED RESIDENTIAL RECONSTRUCTION PROJECT

*40A Hersey Street
Hingham, MA 02043*

Owner of Record: Four Sons LLC
643 Manley Street
West Bridgewater, MA 02379

Party Responsible for Plan:
Morgan Residential LLC
c/o Jake Morgan
15 Maryknoll Drive
Hingham, MA 02043

Source of Funding

Implementation of this Construction Period Pollution Prevention Plan will be the responsibility of the property owner to include its successor and/or assigns, as the same may appear on record with the Plymouth Country Registry of Deeds.

Plan

An important element of pollution prevention is the regular maintenance of the control components. Specifically, the effectiveness of the sediment control components is dependent upon their continued maintenance and repair. These components are particularly important in locations where upgradient areas are not fully stabilized and may be subject to erosion. As natural deterioration of these barriers occurs, replacement and/or repair efforts must be coordinated by removing the accumulated sediment and extending the barrier laterally, as required.

Extreme weather conditions can serve to highlight the need for a vigorous maintenance program as well as a need to fine-tune and improve upon the system's design. The following section outlines a recommended plan for long-term maintenance and immediate repair and improvement of the sediment controls.

Prior to construction, a siltation barrier consisting of a staked silt sock shall be installed along the perimeter of the project site as shown on the enclosed Erosion Control Plan.

All exposed soils not to be paved shall be stabilized as soon as possible. Seed mixes shall only be applied during appropriate periods as recommended by the seed supplier, typically May 1st to October 15th. Any exposed soils that cannot be stabilized by vegetation during these dates shall be stabilized with check dams, jute netting or other acceptable means.

During dry periods where dust is created by construction activities, the following control measures shall be implemented:

- Watering – The contractor shall water the ground along traffic areas until moist;
- Mulch – Mulching can be used as a quick and effective means of dust control in disturbed areas prior to re-vegetating areas;
- Vegetative Cover – Areas that are not expected to be disturbed regularly should be stabilized with loam and seed as soon as possible.

Inspections

The responsible party shall perform site inspections during periods of active construction within 24 hours of a storm event greater than ½". The responsible party shall perform inspections to ensure that the approved plan is being followed with particular attention to the Planning Board approval. Additionally, the responsible party shall inspect the Erosion Control Barrier, note any deficiencies observed and make any necessary repairs or upgrades.

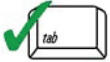
ATTACHMENT 9 – STORMWATER REPORT CHECKLIST



Checklist for Stormwater Report

A. Introduction

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



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

The Stormwater Report must include:

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

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

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

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

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

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



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

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

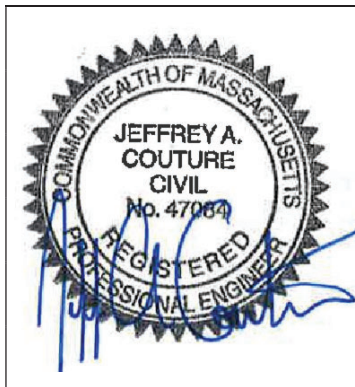
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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

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

Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



July 20, 2026

Signature and Date

Checklist

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

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



Checklist for Stormwater Report

Checklist (continued)

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

- ☒ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☐ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
 - ☐ Credit 1
 - ☐ Credit 2
 - ☐ Credit 3
- ☒ Use of “country drainage” versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- ☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- ☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- ☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- ☐ Soil Analysis provided.
- ☒ Required Recharge Volume calculation provided.
- ☐ Required Recharge volume reduced through use of the LID site Design Credits.
- ☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - ☒ Static
 - ☐ Simple Dynamic
 - ☐ Dynamic 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.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
 - ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
 - ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- ☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- ☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- ☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- ☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

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

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- ☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
- ☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
- ☐ is within the Zone II or Interim Wellhead Protection Area
 - ☐ is near or to other critical areas
 - ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - ☐ involves runoff from land uses with higher potential pollutant loads.
- ☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.
- ☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- ☐ The BMP is sized (and calculations provided) based on:
 - ☐ The ½" or 1" Water Quality Volume or
 - ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- ☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

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

Standard 6: Critical Areas

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



Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- ☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

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

Standard 9: Operation and Maintenance Plan

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

Standard 10: Prohibition of Illicit Discharges

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