



# Site Law of Development Act

RSU 71 Belfast Area High School

Belfast, ME, 04106

**Owner:**

RSU 71 Belfast Area High School  
637 Highland Avenue  
Belfast, ME 04106

**Submitted To:**

Maine DEP  
Central Maine Regional Office  
17 State House Station  
Augusta, ME 04333

**Civil Engineer/ Landscape Architect:**

Activitas, Inc.  
70 Milton Street  
Dedham, MA 02026  
(781) 355-7040

April 25, 2025

# Land Licensing Consolidated Application

version 1.9

Digitally signed by:  
MELS  
Date: 2025.05.05 14:45:50 -04:00  
Reason: Copy Of Record  
Location: State of Maine

(Submission #: HQB-WD4N-C1K95, version 1)

## Details

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**Site:** Belfast Area High School

**Submission ID** HQB-WD4N-C1K95

## Form Input

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### Stormwater Construction Activity Questions

**Will your project disturb one acre or more of area?**

Yes

**Will your project result in any of the following:**

◆ One acre or more of impervious area◆ or ◆ five acres or more of developed area◆ in any other watershed?

**Does your project require a modification to an existing Site Location of Development Act permit? OR Will your project result in ◆ three acres or more of impervious area◆ or ◆ 20 acres or more of developed area◆?**

Yes

**Is your project in the direct watershed of an urban impaired stream identified in Chapter 502?**

No

**Is your project in the direct watershed of a lake?**

No

The following Chapter 500 standards apply to your project:

- Basic Standards
- General Standards
- Flooding Standard

Other standards and/or additional controls may apply to your project:

- Easements and Deed Restrictions See Section 4(G)
- Redistribution of Stormwater Discharges See Section 4(H)
- Discharge to Wetlands See Section 4(I)
- Discharges to Public Storm Water Systems 4(J)
- Additional Controls See Section 5

[Chapter 500 Rules \(word document\)](#)

Projects with Developed area > 20 acres or Impervious area > 3 acres may also require a site law application.

## Project Scope

### Application Type

Site Location of Development

### Is this project funded by an awarded DEP grant?

No

If this is a project conducted by a federal agency or requiring a license or permit from a federal agency (i.e. EPA, USACE, USCG) and located in the coastal zone, please select "Yes" below. More information on applicable activities can be found [here](#). The Coastal Zone Map can be viewed [here](#).

### Are you a Federal applicant applying for a Federal Consistency determination?

No

### Is this an after-the-fact application?

Yes

### Has the project been completed?

No

### Have you received a written notice of violation?

No

## Applicant (1 of 1)

### Regional School Unit 71

### Who is the applicant?

Municipality

### Applicant

#### Organization or Municipality Name

Regional School Unit 71

Phone Type	Number	Extension
------------	--------	-----------

Business	2073381960	
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#### Mailing Address

PO Box 325

Belfast, ME 04195

United States

### Responsible Official

First Name	Last Name
------------	-----------

Bob	England
-----	---------

#### Title

Mr.

Phone Type	Number	Extension
------------	--------	-----------

Business	2073381960	
----------	------------	--

#### Email

bengland@rsu71.org

#### Mailing Address

PO Box 325

Belfast, ME 04195

United States

## Agent

## Agent Information

Agents are individuals or consultants that serve as a point of contact for the submission.

### Will an agent be representing you for this project?

Yes

## Agent

### First Name Last Name

Holly Ganser

### Organization Name

Activitas, Inc

### Phone Type Number Extension

Business 9783557041

### Email

hcg@activitas.com

### Mailing Address

70 Milton Street

Dedham, MA 02026

United States

### Does the agent have an ownership interest in the project?

No

## Agent Letter of Authorization

[24002-RSU71\\_BAHS-Owners\\_Authorization.pdf - 04/28/2025 01:19 PM](#)

### Comment

NONE PROVIDED

## Project Summary

### Project Name

Belfast Area High School

### Project Summary

After the fact filing for an existing high school campus on 26.062 acres. The proposed work includes full renovation of the existing track and field area, rebuilding and expansion of the track and conversion of the natural grass field to synthetic turf.

## Detailed Project Description

[24002-RSU71\\_BAHS-Section\\_1.pdf - 04/28/2025 11:58 AM](#)

### Comment

NONE PROVIDED

## Project Location

### Project Site Name

Belfast Area High School

### Project Address

25 Lions Way

Belfast, ME 04915

## Directions and Site Identifiers

NONE PROVIDED

### Tax Map #

013

### Tax Lot #

012

Place pin on map at the location of the project activity.

Click [here](#) to access permit data geographically referenced via Google Earth. Existing Land Bureau permits, natural resource habitat layers and other related spatial layers can be accessed from this site.

**Project Location**

44.42871406852712,-69.01647058014339

**Size of Lot or Parcel**

26.062

**Size of Lot or Parcel**

Acres

**Deed**

**Deed Reference - Book #**

3974

**Deed Reference - Page #**

341

**Proof of Ownership**

[RSU71-Deed-BK3974PG341.pdf](#) - 04/28/2025 12:02 PM

**Comment**

NONE PROVIDED

**Site Location of Development**

**Application Type**

Structure

**Structure**

school

**Type of Direct Watershed**

River, stream or brook

**Watershed Name**

Coastal Watershed

**Name of Waterbody(ies) Drained to**

Tributary to Passagassawakeag River

**Does the site drain to an Impaired Waterbody?**

No

**Project Area Information**

Area	Units	Existing	New	Total (Square Feet)
Impervious	Acres	3.456	6.444	431,244
Landscaped	Acres	20.609	0	897,728.04
Disturbed	Acres	0	6.444	280,700.64

**Existing Developed Area (Acres)**

24.07

**New Developed Area (Acres)**

6.44

**Total Developed Area (Acres)**

30.51

**Type of Stormwater Control**

Structural

**Exceptions and/or waivers requested.**

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Indicate whether an exception and/or waiver to an applicable standard are being requested as part of the application. Check all that apply.

**General Standards**

Redevelopment

**Urban Impaired Stream Standard**

NONE PROVIDED

**Flooding Standard**

NONE PROVIDED

**Are you working with a Soil and Water Conservation District?**

No

**Does your project involve storage of special or hazardous waste**

No

**Application Contributors**

Name	ID Number	Identification Type
Holly Ganser	ME17013	Engineer

**Section 1. Development description**

[24002-RSU71\\_BAHS-Section\\_1.pdf - 04/28/2025 12:47 PM](#)

[24002-RSU71-BAHS\\_Permitting\\_Drawings\\_2025\\_04\\_25.pdf - 04/28/2025 01:11 PM](#)

**Comment**

NONE PROVIDED

**Section 3. Financial capacity**

[24002-RSU71\\_BAHS-Section\\_3.pdf - 04/28/2025 12:47 PM](#)

**Comment**

NONE PROVIDED

**Section 4. Technical ability**

[24002-RSU71\\_BAHS-SECTION\\_4.pdf - 04/28/2025 01:11 PM](#)

**Comment**

NONE PROVIDED

**Section 5. Noise**

[24002-RSU71\\_BAHS-Section\\_5.pdf - 04/28/2025 01:11 PM](#)

**Comment**

NONE PROVIDED

**Section 6. Visual quality and scenic character**

[24002-RSU71\\_BAHS-SECTION\\_6.pdf - 04/28/2025 01:12 PM](#)

**Comment**

NONE PROVIDED

**Section 7. Wildlife and fisheries**

[24002-RSU71\\_BAHS-Section\\_7.pdf - 04/28/2025 01:13 PM](#)

**Comment**

NONE PROVIDED

**Section 8. Historic sites**

[24002-RSU71\\_BAHS-Section\\_8.pdf - 04/28/2025 01:13 PM](#)

**Comment**

NONE PROVIDED

**Section 9. Unusual natural areas**

[24002-RSU71\\_BAHS-SECTION\\_9.pdf - 04/28/2025 01:13 PM](#)

**Comment**

NONE PROVIDED

**Section 10. Buffers**

[24002-RSU71\\_BAHS-Section\\_10.pdf - 04/28/2025 01:13 PM](#)

**Comment**

NONE PROVIDED

**Section 11. Soils**

[24002-RSU71\\_BAHS-SECTION\\_11.pdf - 04/28/2025 01:14 PM](#)

**Comment**

NONE PROVIDED

**Section 12. Stormwater management**

[24002-RSU71\\_BAHS-Section\\_12.pdf - 04/28/2025 01:14 PM](#)

**Comment**

NONE PROVIDED

**Section 14. Basic Standards**

[24002-RSU71\\_BAHS-Section\\_14.pdf - 04/28/2025 01:15 PM](#)

**Comment**

NONE PROVIDED

**Section 15. Groundwater**

[24002-RSU71\\_BAHS-Section\\_15.pdf - 04/28/2025 01:15 PM](#)

**Comment**

NONE PROVIDED

**Section 16. Water supply**

[24002-RSU71\\_BAHS-Section\\_16.pdf - 04/28/2025 01:15 PM](#)

**Comment**

NONE PROVIDED

**Section 17. Wastewater disposal**

[24002-RSU71\\_BAHS-Section\\_17.pdf - 04/28/2025 01:15 PM](#)

**Comment**

NONE PROVIDED

**Section 18. Solid waste**

[24002-RSU71\\_BAHS-Section\\_18.pdf - 04/28/2025 01:16 PM](#)

**Comment**

NONE PROVIDED

**Section 19. Flooding**

[24002-RSU71\\_BAHS-Section\\_19.pdf - 04/28/2025 01:16 PM](#)

**Comment**

NONE PROVIDED

**Section 20. Blasting**

[24002-RSU71\\_BAHS-Section\\_20.pdf - 04/28/2025 01:16 PM](#)

**Comment**

NONE PROVIDED

**Section 21. Air emissions**

[24002-RSU71\\_BAHS-Section\\_21.pdf - 04/28/2025 01:16 PM](#)

**Comment**

NONE PROVIDED

**Section 22. Odors**

[24002-RSU71\\_BAHS-Section\\_22.pdf - 04/28/2025 01:16 PM](#)

**Comment**

NONE PROVIDED

**Section 23. Water vapor**

[24002-RSU71\\_BAHS-Section\\_23.pdf - 04/28/2025 01:17 PM](#)

**Comment**

NONE PROVIDED

**Section 24. Sunlight**

[24002-RSU71\\_BAHS-Section\\_24.pdf - 04/28/2025 01:17 PM](#)

**Comment**

NONE PROVIDED

**Section 25. Notices**

[24002-RSU71-BAHS-Section\\_25.pdf - 04/28/2025 01:17 PM](#)

**Comment**

NONE PROVIDED

**Certification**

I understand and agree with the terms listed below

**Applicant Statement:**

I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

With this Site Law application form and my signature, I am filing notice of my intent to carry out work that meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards. In addition, I will file a Notice of Termination (NOT) within 20 days of project completion.

**Section Processing Fee**

9048.00

**Section Licensing Fee**

4524.00

**Activity Type**

22

**Fee Total**

**Total Processing Fees**

9,048.00

**Total Licensing Fees**

4,524.00

**Service Fee (per transaction)**

2.00

**Processing Fee Details**

Site Location of Development: \$9048.00

**Licensing Fee Details**

Site Location of Development: \$4524.00

**Total Fees**

13,574.00

Online payment is required before submitting this application. Please pay online using the [DEP Payment Portal](#) for the list of products shown. Ensure that your total paid matches the total above. Enter your payment confirmation number below before submitting this application.

**Payment Portal Products**

Land-Site Location of Development Law- All Other:\$13572.00

Receipt ID
12260

**Payment Confirmations**

[24002-RSU71\\_BAHS-DEP\\_PAYMENT.pdf - 05/05/2025 02:39 PM](#)

**Comment**

NONE PROVIDED

**Payment Portal Amount Paid**

13574.00



## **SECTION 1: DEVELOPMENT DESCRIPTION**

## SECTION 1

### DEVELOPMENT DESCRIPTION

#### Existing Site Information

Belfast Regional Area High School was constructed in 1965, prior to the enactment of the Site Location of Development Act. Pursuant to 38 M.R.S. §§ 488, DEP may not consider development in existence on January 1, 1970, when determining if a project meets the definition of a development of state or regional significance that may substantially affect the environment. As such, a SLODA Certificate was not required to be issued for the development. At the time of the SLODA implementation, the school development consisted of the approximately 64,163 sf of buildings, a cinder running track, natural grass athletic fields, and parking areas and driveways (both paved and gravel).

While developments in existence prior to January 1, 1970, are exempt from the requirement of obtaining a SLODA certificate, if plans for a development are substantially changed after that date, the development is no longer exempt from review and the development requires approval by MaineDEP. Since 1970, improvements have been made to the Belfast Regional Area High School campus to include additions to the school building, new driveways and new parking areas. RSU71 is also currently proposing to renovate their existing track and field. The existing 6-lane track will be rebuilt to include a 6-lane oval and 8-lane straight away. The natural grass field within the track will be replaced with a synthetic turf field that will better support the school's athletic needs. These new proposed renovations combined with the campus improvements since 1970, are enough for the DEP to consider the development as substantially changed and therefore the entire campus development requires approval from the DEP. Figure 1-1 provides a USGS map of the subject property. Figure 1-2 shows a 1966 aerial of the property shortly after the it was developed into the high school campus. Figure 1-3 shows an aerial from 1971 showing the development shortly after Site Law was enacted. Figure 1-4 shows an aerial from 1996 which shows further development done to the campus.

#### Proposed Track and Field Overview

The proposed track and field renovations consist of reconfiguring the existing 6-lane asphalt track to a new 6-lane oval 8-lane straight asphalt track with a rubberized track surfacing. New areas will be defined for the jumping and throwing events for track outside of the track oval. The existing natural grass field within the track will be converted to synthetic turf. The project will also remove the existing bleacher system and replace it with a new bleacher system and press box. Additional site improvements include new storage buildings and other landscape and entrance improvements. The existing athletic lighting system will also be replaced with an upgraded lighting system.

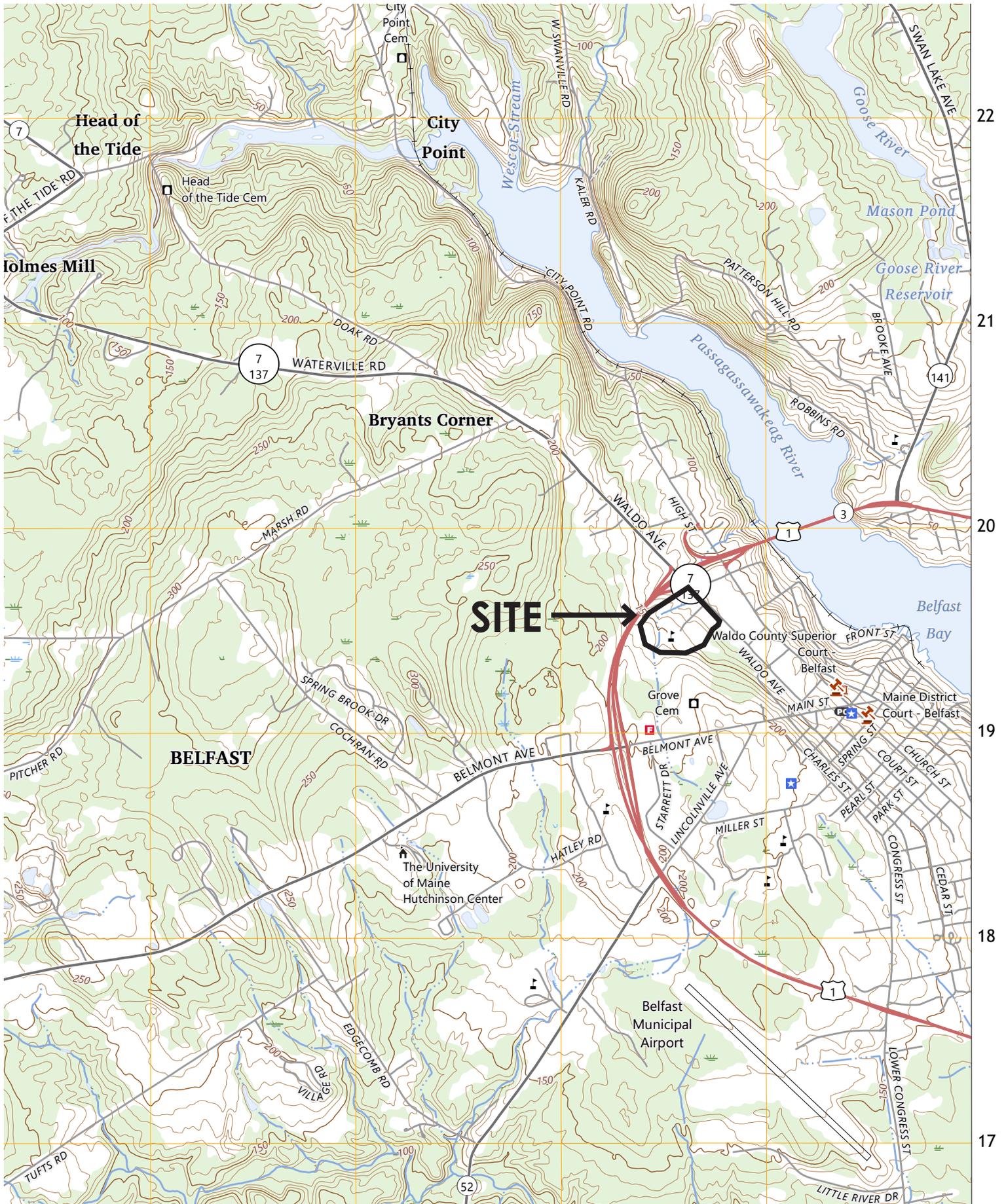
Proposed Additional Stormwater Management

In order to meet the MaineDEP stormwater standards, additional stormwater management infrastructure will be installed. The management system will be a subsurface chamber system and proprietary treatment system located under the existing gravel parking associated with the bus barn.

Anticipated Project Schedule

**CONSTRUCTION** (30 weeks – not including stoppage for winter conditions)

<b>Contractor Mobilization - Track and Field (weather and permitting allowed)</b>	<b>8/1/25</b>	
Erosion Control / Temp Fencing	8/4/25	- 8/6/25
Site Demo	8/7/25	- 8/15/25
Strip Topsoil / General Earthwork cut/fill operations	8/18/25	- 9/5/25
Storm Drainage	9/8/25	- 9/26/25
Installation of Concrete Turf Anchor	9/29/25	- 10/10/25
Site Electric	10/13/25	- 10/24/25
Athletic Light Installation	10/27/25	- 10/31/25
Fencing & Athletic Ball Netting	10/13/25	- 10/24/25
Synthetic Turf Field Base and Top Stone	10/27/25	- 11/7/25
Track Asphalt Base	11/10/25	- 11/21/25
Track Pavement	11/24/25	- 11/28/25
Site Pavement	12/1/25	- 12/12/25
<i>WINTER CONDITIONS – Assumed Work Stoppage</i>	<i>12/15/25</i>	<i>- 4/3/26</i>
Laser Grade Synthetic Turf Base	4/6/26	- 4/10/26
Synthetic Turf System Installation	4/13/26	- 5/8/26
Track Surfacing Installation	5/11/26	- 5/29/26
Bleacher and Press Box	6/1/26	- 6/19/26
Landscaping	6/8/26	- 6/12/26
<b>Substantial Construction Completion (Begin Field Use)</b>	<b>6/12/26</b>	
<b>Final Construction Completion</b>	<b>6/26/26</b>	
<b>For Additional Stormwater Management</b>	<b>Summer</b>	<b>- Fall 2027</b>
	<b>2027</b>	



Data Source: [www.store.usgs.gov](http://www.store.usgs.gov)

## FIGURE 1-1 Location Map

Belfast Regional High School - Belfast, ME

**ACTIVITAS**  
landscape architecture | civil engineering

70 Milton Street | Dedham, MA 02026-2915  
(781) 326-2600 | [activitas.com](http://activitas.com)

APRIL 25, 2025

5-14-66



Data Source: <https://www.maine.gov/dacf/mgs/explore/maps/airphotos/>

## FIGURE 1-2 1966 AERIAL

Belfast Regional High School - Belfast, ME

**ACTIVITAS**  
landscape architecture | civil engineering

70 Milton Street | Dedham, MA 02026-2915  
(781) 326-2600 | [activitas.com](http://activitas.com)

FEBRUARY 14, 2025

5-14-71



Data Source: <https://www.maine.gov/dacf/mgs/explore/maps/airphotos/>

## FIGURE 1-3 1971 AERIAL

Belfast Regional High School - Belfast, ME

**ACTIVITAS**  
landscape architecture | civil engineering

70 Milton Street | Dedham, MA 02026-2915  
(781) 326-2600 | [activitas.com](http://activitas.com)

FEBRUARY 14, 2025

05/1996



Data Source: Google Earth

## FIGURE 1-4 1996 AERIAL

Belfast Regional High School - Belfast, ME

**ACTIVITAS**  
landscape architecture | civil engineering

70 Milton Street | Dedham, MA 02026-2915  
(781) 326-2600 | [activitas.com](http://activitas.com)

FEBRUARY 14, 2025

**QUITCLAIM DEED  
With Covenant**

**Know All Persons by These Presents** that **REGIONAL SCHOOL UNIT NO. 20**, a quasi-municipal corporation, existing under the laws of the State of Maine and having its principal offices in the City of Belfast, County of Waldo, State of Maine,

in consideration of one dollar and other valuable considerations

paid by **REGIONAL SCHOOL UNIT NO. 71**, a quasi-municipal corporation existing under the laws of the State of Maine and having its principal offices in the City of Belfast, County of Waldo, State of Maine, and whose mailing address is P. O. Box 325, Belfast, Maine 04915,

the receipt whereof it does hereby acknowledge, does hereby **give, grant, bargain, sell and convey and forever quitclaim** unto the said Regional School Unit No. 71, its successors and assigns forever,

That certain lot or parcel of land, together with all buildings and improvements thereon, situated in the City of **BELFAST**, County of Waldo, State of Maine, more particularly bounded and described on Schedule A, attached hereto and made a part hereof.

This deed is granted in accordance with Title 20-A Maine Revised Statutes Annotated §1466(19), and is in furtherance of the Withdrawal Agreements between RSU 20 and the Municipalities of Belfast, Belmont, Morrill, Searsmont and Swanville, dated August 12, 2014, approved by said Municipalities and the Maine Department of Education.

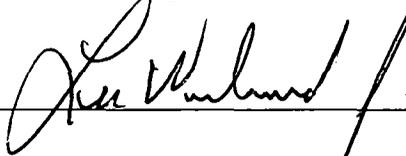
**To have and to hold** the aforementioned and bargained premises, with all the privileges and appurtenances thereof, to the said Regional School Unit No. 71, its successors and assigns, to its and their own use and behoof forever.

**And** the said Grantor quasi-municipal corporation does **covenant** with the said Grantee, its successors and assigns, that it and its successors shall and will **warrant and defend** the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons claiming by, through or under it.

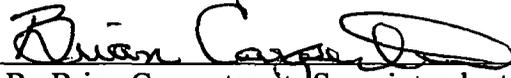
**In Witness Whereof**, the said Regional School Unit No. 20 has caused this instrument to be signed by its Superintendent, Brian Carpenter, thereunto duly authorized, this 30<sup>th</sup> day of June, 2015.

**NO TRANSFER TAX PAID**

Signed, Sealed and Delivered  
in presence of

  
\_\_\_\_\_

Regional School Unit No. 20

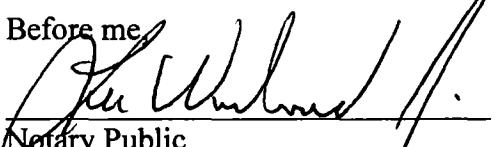
  
By Brian Carpenter, its Superintendent

State of Maine  
County of Waldo

June 30, 2015

Then personally appeared the above named Brian Carpenter, Superintendent of said Grantor quasi-municipal corporation, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said quasi-municipal corporation.

Before me

  
\_\_\_\_\_

Notary Public

Lee Woodward  
Printed Name

My Commission Expires 1-1-2016



## SCHEDULE A

All those certain lots or parcels of land, together with all buildings and improvements thereon, situated westerly of Waldo Avenue and southerly of the Route 1 bypass and off ramp, and which said premises contains the educational complex consisting of Belfast Area High School, RSU No. 20 bus garage and administrative offices, athletic fields and associated parking areas. The premises herein conveyed specifically includes all those premises conveyed to Maine School Administrative District No. 34 by the following deeds:

- a. Deed from the City of Belfast to Maine School Administrative District No. 34, dated April 15, 1965, recorded in Waldo County Registry of Deeds Book 634, Page 330.
- b. Deed from the City of Belfast to Maine School Administrative District No. 34, dated April 15, 1965, recorded in Waldo Registry Book 634, Page 333.
- c. Deed from Fred A. Johnson to Maine School Administrative District No. 34, dated May 22, 1968, recorded in Waldo Registry Book 667, Page 1183.
- d. Deed from Virgil E. Fowles, Sr. to Maine School Administrative District No. 34, dated April 10, 1977, recorded in Waldo Registry Book 687, Page 425.
- e. Deed from Donald E. Stephenson to Maine School Administrative District No. 34, dated July 1, 1986, recorded in Waldo Registry Book 905, page 266.
- f. Deed from Douglas F. Riner and Helen Riner to Maine School Administrative District No. 34, dated February 23, 1996, recorded in Waldo Registry Book 1593, Page 113.

Excepting from the premises above described so much of the same as was conveyed by deed of Maine School Administrative District No. 34 to the City of Belfast, dated April 10, 1970, recorded in Waldo Registry Book 687, Page 427.

It is meant and intended to describe and convey and does hereby convey all those premises owned by Regional School Unit No. 20 as is located westerly of Waldo Avenue and southerly of the Route 1 bypass and off ramp. There is specifically conveyed any and all land contiguous with those parcels above described and which may be owned by Regional School Unit No. 20 as of the date of this deed.

A portion of the premises herein conveyed is subject to an easement granted to Central Maine Power Company et al. in Book 2669, Page 284, and two (2) easements granted to the City of Belfast in Book 1750, Pages 186 and 188.

For title reference see deed from Maine School Administrative District No. 34 to Regional School Unit No. 20, dated June 30, 2009, recorded in Waldo Registry Book 3344, Page 313.

Also releasing all right, title and interest to any other parcels of land, together with improvements thereon, situated within the territorial bounds of the City of Belfast and owned by Regional School Unit No. 20 as of the date of this deed.

LW/ch  
RE-Schedule A-RSU 20 C

WALDO SS: RECEIVED

Jul 07, 2015  
at 08:19A  
ATTEST: Stacy L. Grant  
REGISTER OF DEEDS

**SECTION 3: FINANCIAL CAPABILITY**

SECTION 3

FINANCIAL CAPABILITY

The construction costs for the RSU71 Belfast Area High School project is \$4,342,568.79.

Cost breakdown as follows:

1. Mobilization and Site Preparation	\$104,807.05
2. Earthwork	\$92,228.01
3. 400 Meter Running Track	\$557,643.41
4. Synthetic Turf Field	\$771,631.79
5. Spectator Seating & Press Box	\$820,726.00
6. Fencing & Protective Ball Netting	\$149,265.00
7. General Electrical Improvements	\$25,000.00
8. Sports Lighting	\$440,000.00
9. Stormwater Utility Improvements	\$161,726.00
10. Prefabricated Storage Building	\$30,000.00
11. Site & Landscape Improvements	\$266,840.21
12. Moveable Athletic Equipment	\$99,350.00
<u>13. Additional Parking Lot Storm Water</u>	<u>\$130,000.00</u>
<b>Subtotal</b>	<b>\$3,649,217.47</b>
4% General Conditions	\$145,968.70
10% Contractor Overhead & Profit	\$364,921.75
<u>5% Construction Contingency</u>	<u>\$182,460.87</u>
<b>Construction Total</b>	<b>\$4,342,568.79</b>

Please refer to the letter dated April 24, 2025 for explanation of the financial capacity of Regional School Unit 71 to fund the project.

# REGIONAL SCHOOL UNIT 71

Belfast · Belmont · Morrill · Searsmont · Swanville

**Interim Superintendent  
Robert England  
Office of the Superintendent  
PO Box 325  
Belfast, ME 04915**

**Telephone: 207/338-1960**

**Fax: 207/338-4597**

April 24, 2025

To whom it may concern,

Regional School Unit #71 School Board is responsible for developing and approving budgets for the school district's annual operation and capital projects.

Funding for the proposed capital improvement projects is anticipated to be approved at a future School Board meeting. The project will only move to construction if and when the School Board votes to appropriate funding for it. Once available, minutes of the Board Meeting indicating the approval of the budget funds can be provided to MaineDEP.

Sincerely,



Bob England  
Superintendent of Schools, RSU71

CC:

Chandra Hodgdon

**SECTION 4: TECHNICAL ABILITY**

SECTION 4  
TECHNICAL ABILITY

Please see enclosed firm overview for Activitas and attached resumes of the personnel involved with the design and preparation of this application.

# FIRM OVERVIEW

## PROFESSIONAL SERVICES

- | Landscape Architecture
- | Civil Engineering
- | Master Planning & Feasibility Studies
- | Conceptual / Schematic Design
- | Design Development
- | Fundraising/Marketing 2D & 3D Graphics
- | Planting Design
- | Regulatory Permitting
- | Construction Documentation
- | Project Bidding
- | Construction Administration
- | Post Construction Services
- | Maintenance & Life Cycling Planning
- | Outdoor Athletic Surface Consulting
- | Indoor Athletic Surface Consulting

Activitas continually collaborates with public and private educational institutions throughout New England and across the country in developing plans and strategies for their athletic and recreation venues.

Working hand-in-hand with our clients we are dedicated to creating exceptional landscape and athletic spaces that are well programmed, planned to fit seamlessly within their greater campus context, and can be maintained within the client's annual operational budget. The contemplation of ongoing maintenance and life-cycle planning is an integral part of our design process. We are committed to smartly detailed and diligently constructed designs that will stand the test of time and the scrutiny of our clients and their discerning athletes, coaches, officials and spectators.

Activitas is grounded in a philosophy of steady, incremental, and organic growth with our exceptional and committed team. Our firm is comprised of a multi-disciplinary staff of 14 people: 9 landscape architects, 3 civil engineers, 1 marketing associate and 1 office administrator. Our collective experience is unprecedented in the industry and it provides our clients with the strongest team to meet their developing needs.

The principals and designers at Activitas have completed well over 500 athletic and recreational projects worldwide at the highest levels of sport. Our understanding of the layout of athletic venues and the construction materials and techniques required for long term durability and playability is not book learned or from hearsay. It is from nothing short of years of actual design, construction and personal athletic experience. Our collective experience is unprecedented in the outdoor athletic design industry and provides our clients with the proper skills and expertise to help them achieve their programmatic needs and aspirational goals. We maintain an active presence in organizations like Maine Athletic Administration Association (MIAAA), American Sports Builders Association (ASBA) and the Sports Field Management Association (SFMA). Activitas is one of North America's most awarded outdoor athletic facility design firms.

We have successfully completed field renovations for colleges, municipalities and secondary schools throughout New England and across North America. This includes delivery of the award-winning track & field renovation project at Yarmouth High School, the holistic renovation and expansion of Colby College's entire outdoor athletic campus, and recent plans for the expansion and renovation of multiple facilities at Gray-New Gloucester High School. The successful implementation of these Maine-based projects is proof that Activitas can provide critical contributions to make sound financial and programmatic decisions for the development of this new athletic facility.



**HOLLY GANSER, PE**

PROJECT CIVIL ENGINEER

Holly is a registered civil engineer with a focus on earthwork and grading, stormwater design, and permitting. Holly develops earthwork and utility designs that are thoughtful and meet the needs of the project site, budget, design requirements, and maintenance considerations in the future. Holly is experienced in permitting with various boards and agencies such as Maine DEP.

**EDUCATION**

**Worcester Polytechnic Institute**

*Worcester, Massachusetts*

Bachelor of Science: Civil Engineering

**REGISTRATION**

**Registered Professional Engineer:**

Massachusetts, New Hampshire, **Maine (PE 17013)**, New York

**ASSOCIATIONS**

American Sports Builders Association

Sports Field Managers Association

Massachusetts Park and Recreation Association

ACE Mentor Program

| Greater Boston Affiliate - Mentor,  
Board Member, Student Coordinator

**University of Maine** | Athletic Complex *Orono, ME*

The 2022 University of Maine's Athletics Facilities Master Plan builds upon the conceptual Master Plan efforts spearheaded by the University in early 2021. Created through a collaboration between WBRC, Crawford Architects, and Activitas, this plan outlines the path forward for significant facility transformations across the northern end of UMaine's Orono campus and touches all 17 of its Division 1 sports programs. The \$110,000 million project includes \$90 million in support from the Harold Alfond Foundation.

New construction and renovation projects on the historic University of Maine campus are always a challenge, given the confines of its existing footprint. For this sweeping, multi-phased project, the team weighed hundreds of factors to help the University determine the best project sequence in light of its goals, budget, labor and supply chain constraints, academic year and summer schedules, and, above all, Maine's challenging terrain and climate.

The top priority of the Master Plan is to provide immediate and tangible improvements to the gender equity gap in women's athletic facilities. To achieve this, new fields and complexes for softball, field hockey, and soccer are now under construction.

Future phased projects include a new track and field complex, Shawn Walsh Center and Alfond Arena expansion and upgrades, new track and field throwing events area, new Morse Multipurpose Arena, parking lot expansions, Alfond Stadium improvements, new Indoor Practice Facility, Mahaney Diamond improvements, Memorial Gym addition, and new auxiliary team facilities.

**Colby College** | Outdoor Competition Center *Waterville, ME*

Colby College invited Activitas to join a comprehensive consultant team in the planning for one of the largest capital improvements projects in the State of Maine: Colby's new Athletic Center. Activitas was charged to lead Phase 1 of this project in the programming, collaborative campus planning, community consensus, design, permitting, and construction administration for the installation of three new athletic fields. The fields were relocated from another part of campus to allow for the construction of new athletic center. The new fields include two high-end sand capped natural grass fields and an infilled synthetic turf field to support Colby College's soccer, lacrosse, and field hockey programs.

The Outdoor Competition Center was recently awarded with the State of Maine's very first **SITES** (Sustainable Sites Initiative) Certification, reaffirming the College's commitment to sustainability.

**Additional Experience** *(not with Activitas)*

**Gouldsboro Solar** | *Gouldsboro, ME*

Holly assisted in obtaining the various environmental permits for a solar project in Gouldsboro. The project required a stormwater management permit which required creative design of the stormwater management structures to meet the requirements of MDEP.

**Bucksport Solar** | *Bucksport, ME*

Holly prepared the Maine Department of Environmental Protection and local permit applications for a solar array located in Bucksport. The project required approval of a contract zone and Site Plan Review approval from the local Planning Board and Town Council. The project also required an NRPA Wetland Impact Tier 1 permit as well as various NRPA and Stormwater Permit By Rules and a Solar Decommissioning Permit. Holly oversaw the preparation of these permit applications and approvals. The project also required a permit from U.S. Army Corps of Engineers for a stream crossing over a stream within Atlantic Salmon habitat. Holly acted as project manager for the preparation and submission of the programmatic stream crossing permit.



**BENJAMIN GLEASON, RLA**

ASSOCIATE PRINCIPAL / PROJECT MANAGER

Ben is a registered landscape architect who specializes in the design of public parks and municipal athletic facilities. Working with a range of public and private clients, Ben guides each project team through all phases, from conceptual design to final construction and facility maintenance. Ben has recently served as project manager for several award winning projects for Colby College.

**EDUCATION**

**University of Rhode Island**

*Kingston, Rhode Island*

Bachelor of Landscape Architecture

**REGISTRATION**

Registered Landscape Architect:  
Maine (LAR 3965) & Massachusetts

**ASSOCIATIONS**

American Society of Landscape Architects

Boston Society of Landscape Architects

American Sports Builders Association

Sports Field Managers Association

New England Sports Field Managers Association

Massachusetts Park and Recreation Association

**City of South Portland/South Portland High School**

- | Wainwright Farm Master Plan
- | High School Track and Field Study

**Colby College**

- | Alford Track & Field Renovation
- | Bill Alford Field Renovation
- | New Soccer Game & Practice Facility
- | Coombs Baseball Field
- | Crafts Softball Field

**Town of Yarmouth**

- | High School Track & Field Renovation

**MSAD 15**

- | Gray New Gloucester High School Fields Master Plan Update 2024

**Fryeburg Academy**

- | Athletics Complex
- | Fryeburg Baseball Infield

**RSU 64 School District**

- | Synthetic Turf Study

**RSU 71 School District**

- | Belfast High School Track & Field Renovation

**University of Maine, Orono**

- | Athletic Complex Master Plan
- | NCAA Softball Field
- | NCAA Field Hockey Field
- | New Track and Field Complex
- | New Track and Field Throwing Events Area
- | Morse Field Renovation
- | Mahaney Diamond Improvements

**University of Maine, Presque Isle**

- | Turf Study

**Nobles and Greenough**

- | Throwing Events
- | McLeod Parking & Play Space
- | Track & Field

**City of Marlborough**

- | Middle School Track & Field
- | Middle School Baseball Field Renovation

**Town of Weymouth**

- | Beals Park
- | High School Track & Field Renovation
- | Legion Field Renovation
- | Lovell Fields at Pingree School
- | Legion Tennis Courts Renovation
- | Libby Baseball Field Renovation
- | Herring Brook Riverfront Restoration
- | Weston Field Renovation

**Appoquinimink School District**

- | Summit Campus

**City of Woonsocket**

- | Cass Park Track & Field

**Town of Pembroke**

- | Bezanson Fields Study

**Town of Cohasset**

- | Phase 1 Athletic & Recreation Facility Design Services

**Sussex Technical High School**

- | Athletic Fields Complex

**City of Peabody**

- | Farnham and Lt Ross Parks

**City Park Conservancy**

- | New Orleans City Park Master Plan

**Town of Hanover**

- | Track & Field Renovation

**New Sussex Central High School**

- | Campus Landscape
- | Athletic Field Facility

**Cape Henlopen Middle School**

- | Campus Landscape Plan

**Cotting School**

- | Campus Entrance | Preliminary Design

**Greenwich Country Day School**

- | Athletic Center Renovation

**Town of Carver**

- | High School Track & Field Renovation

**Salesianum School**

- | Multi-campus Athletic Master Plan
- | Abessinio Stadium & Track
- | Domenic Monteiro Entrance Plaza



**STEPHEN CRISAFULLI, RLA**

ATHLETIC FACILITY DESIGNER

Steve is a CLARB registered landscape architect who specializes in site planning and athletic programming. Steve provides best-in-class client service. Steve has provided significant design support on numerous projects, including the design of the New England Revolution's new training facility and ward winning projects at Colby College and Dexter Southfield School. Most recently he has spearheaded projects with the Towns of Dedham (MA), Reading (MA) and Belfast (ME) as well as the track and field facility at Fryeburg Academy.

**EDUCATION**

**University of Rhode Island**

*Kingston, Rhode Island*

Bachelor of Landscape Architecture

*Minor in Community Planning*

**REGISTRATIONS**

**Registered Landscape Architect:**

**Maine (LAR 5059)** Massachusetts, Rhode Island

**ASSOCIATIONS**

American Society of Landscape Architects

American Sports Builders Association

Boston Society of Landscape Architects

Rhode Island Chapter of the ASLA

Massachusetts Park and Recreation Association

**City of South Portland/South Portland High School**

- | Wainwright Fields Master Plan
- | High School Track & Field Study

**Colby College**

- | Alfond Track & Field Renovation
- | Bill Alfond Field Renovation
- | New Soccer Game & Practice Facility
- | Coombs Baseball Field
- | Crafts Softball Field

**Town of Yarmouth**

- | High School Track & Field Renovation

**MSAD 15**

- | Gray New Gloucester High School Fields Master Plan Update 2024

**RSU 64 School District**

- | Athletic and Recreational Synthetic Turf Field Study

**Fryeburg Academy**

- | Fryeburg Baseball Infield

**RSU 71 School District**

- | Belfast High School Track & Field Renovation

**City of Woonsocket**

- | Cass Park Athletic Master Plan
- | High School Field #1 Renovation
- | High School Field #5 Renovation
- | Cass Park Track & Field

**Town of Belmont**

- | Harris Field & Track Renovation
- | Grove Street Master Plan
- | Grove Street Streetscape
- | Grove Street Walkway & ADA Improvements
- | Grove Street Tennis & Pickleball
- | Pequossette Tennis Renovation
- | Winn Brook Tennis Renovation

**Town of Dedham**

- | Gonzalez Field Renovation
- | Avery Field Renovation
- | Capone Field Infield Renovation
- | Davis Field Infield Renovation
- | Manor Park

**Town of Weston**

- | High School Track & Field Feasibility
- | Pastor Park Renovation
- | Burchard Park Tennis & Pickleball
- | High School Field #1 Renovation

**Town of Reading**

- | Reading CAL Pickleball Courts
- | Barrows Elementary School Preliminary Design
- | Birch Meadow Phase 2
- | Reading Public Library
- | Birch Meadow Phase 1
- | High School Track & Field Study
- | High School Turf Replacement

**Town of Weymouth**

- | Legion Field Renovation
- | Lovell Fields at Pingree School
- | Pingree Fields Renovation
- | Pingree School Playground
- | Libby Baseball Field Renovation

**Cities of Malden and Melrose**

- | Pine Banks Park Track & Field
- | Pine Banks Park Baseball Field
- | Pine Banks Park Rugby Field
- | Pine Banks Park Softball Field

**City of Lynn**

- | Frasier Field Infield Renovation

**City of Marlborough**

- | City-wide Synthetic Turf Study
- | Middle School Track & Field
- | Middle School Baseball Field
- | High School Tennis Facility
- | High School Baseball/Soccer Facility
- | High School Softball Facility

**Harvard University**

- | Harvard Stadium Resurfacing
- | Harvard Baseball & Softball Renovation
- | Athletic Campus Master Plan

**Town of Scituate**

- | High School Athletic Fields Renovation
- | Scituate High School Tennis Renovation



## **BENJAMIN MCDONOUGH, EIT**

CIVIL DESIGNER

Ben's proficiency in AutoCAD and HydroCAD has made him an invaluable asset to the design team. His technical expertise allows him to create precise and efficient designs, contributing significantly to the success of various projects.

In addition to his technical skills, Ben has gained substantial experience in the permitting process for stormwater reports. His responsibilities include preparing notices of intent, notifications to abutters, and other essential documentation. His thorough understanding of regulatory requirements ensures compliance and smooth progression of projects.

### **EDUCATION**

#### **University of Massachusetts**

*Amherst, Massachusetts*

Bachelor of Engineering - Civil Engineering

### **REGISTRATIONS**

#### **Civil Engineer in Training:**

Massachusetts

### **ASSOCIATIONS**

American Sports Builders Association

Massachusetts Park and Recreation Association

#### **Town of Agawam**

| Agawam High School

#### **Town of Arlington**

| Court Needs Assessment

#### **Town of Belmont**

| Grove Street Park Design & Construction

| Payson Park Design

#### **Town of Cohasset**

| Athletic Fields Needs Assessment

#### **Town of Dedham**

| William B. Gould Memorial Park

#### **Town of Duxbury**

| Recreation Needs Assessment

#### **Town of Grafton**

| Recreation Strategic Plan

#### **Town of Hanover**

| Track & Field Renovation

#### **Town of Harvard**

| Track and Field Study

#### **Town of Haverhill**

| Pickleball Facility

#### **Town of Needham**

| High School Tennis Courts

#### **Town of Lexington**

| Gallagher & Farias Courts

| Lincoln Field #1 Renovation

| Lincoln Park Master Plan

| Muzzey Field Renovation

| OSRP Update

#### **Town of Northbridge**

| Linwood Playground Basketball Court Renovation

#### **Town of Scituate**

| New Junior Varsity Baseball Field

#### **Town of Webster**

| Webster High School Athletics

#### **Town of Weston**

| Burchard Park Tennis & Pickleball

| Memorial Pool

#### **Town of Weymouth**

| Beals Park

| Nash Elementary Turf Field

#### **City of Lynn**

| McManus Field

| OSRP Update

#### **University of Maine, Orono**

| Track & Field

#### **Babson College**

| Govoni Field Renovation Study

| MacDowell Field Resurfacing

#### **Boston College High School**

| Grandstand Renovation

| O'Connor Stadium Field Renovation

#### **Bryant University**

| Athletic Fields Improvements

#### **Corinthian Yacht Club**

| Tennis Courts Renovation

#### **Dartmouth College**

| Red Rolfe Baseball Renovation

#### **Dexter Southfield School**

| Campus Landscape Assessment

| Cornish Field Renovation

| Field House

#### **Frederick Gunn School**

| New Athletic Complex



## AJ ANDERSON

LANDSCAPE DESIGNER

AJ's educational journey at the University of Rhode Island (URI) was inspired his interest into community planning and urban-scale projects. His academic focus was shaped by a profound interest in how design can bring communities together and create more sustainable environments. Through his time at URI, AJ passionately studied the intricate dynamics that make cities and regions thrive, especially in the face of environmental challenges.

His coursework and projects often centered around the concept of community planning, examining how urban spaces could be optimized to meet the needs of diverse populations.

### EDUCATION

**University of Rhode Island**

*Kingston, Rhode Island*

Bachelor of Landscape Architecture

### ASSOCIATIONS

American Society of Landscape Architects

American Sports Builders Association

Boston Society of Landscape Architects

Massachusetts Park and Recreation Association

### University of Maine -Orono

| Track & Soccer Fields

### City of Lynn

| McManus - Design & Construction Phase

### Catholic Memorial

| O'Connor Stadium Field Renovation

### Town of Arlington

| Court Needs Assessment

### Town of Belmont

| Grove Street Park Design & Construction

### Town of Hudson

| Morgan Bowl Grandstand Renovation

### Town of Lexington

| Gallagher & Farias Courts Renovations  
| Valley Tennis Court Renovation

### Town of Little Compton

| Tennis Renovation

### Town of Needham

| High School Tennis Courts

### Town of Scituate

| JV Baseball

### Town of Webster

| Webster High School Athletic Fields

### Town of Weston

| Burchard Park Tennis & Pickleball

### Town of Weymouth

| Nash Elementary Turf Field

### City Park Conservancy

| New Orleans City Park Master Plan

### Babson College

| Govoni Field Replacement  
| MacDowell Turf Renovation

### Bryant University

| Athletic Fields Improvements

### Corinthian Yacht Club

| Tennis Courts Renovation

### Dartmouth College

| Red Rolfe Baseball Renovation

### Dexter Southfield School

| Cornish Field Renovation

### Frederick Gunn School

| New Athletic Complex

### Harvard University

| Baseball & Softball Renovation  
| Cumnock Fields Renovation  
| Field Hockey - Boston Calling Repairs

### Holy Cross High School

| Track & Field Study

### Milton Academy

| Stoking Track & Field Renovation

### New Sussex Central High School

| Campus and Athletic Landscape

### Phillips Academy

| Phelps Field Renovation  
| Outdoor Athletic Master Plan Update 2024

### Sussex Country Vocational School

| New natural grass practice softball field  
| New natural grass practice baseball field  
| 2 new natural grass multi-purpose practice fields  
| Running Track Field Conversion to Existing Synthetic Turf  
| Main Stadium field conversion

### Swarthmore College

| Faulkner & College Avenue Tennis

### University of Massachusetts Boston

| Softball Field

### Department of Conservation & Recreation

| Crow Hill Pond Beach Improvements

### Town of Reading

| Barrows Elementary School Preliminary Design  
| Birch Meadow Phase 2

### Simsbury Soccer Club

| Renovation Study

### Middlesex School

| East Fields

### Montrose School

| Athletic Field

**SECTION 5: NOISE**

## SECTION 5

### NOISE

The City of Belfast has a noise ordinance which states; "noise may be equal to but not exceed, during any consecutive eight-hour period, an average of 75 db(A) measured at any boundary line. During the peak activity of 60 minutes in a twenty-four-hour period a noise may not exceed 115 db(A) when measured at the source. Noises associated with this school development are consistent with typical noises heard at schools, the loudest of which are typically associated with traffic noise during drop off and pick up times and noise associated with outdoor athletic events.

75 decibels is equivalent to the noise generated by a vacuum cleaner. While the noise levels of the loudest consistent activities on campus may exceed 75 db(A), the average over any consecutive eight-hour period will not exceed this allowable level as they are only associated with the short time of those events.

115 decibels is equivalent to the noise generated from a chainsaw or leaf blower. Leaf blowers and other similar equipment is occasionally used on site, however generators of noise higher than 115 db(A) are not typical to school developments.

The proposed renovations to the track and field will not be changing the way in which that space will be used and will not be generating any new or louder noise sources as a result of the project.

**SECTION 6: VISUAL QUALITY AND SCENIC CHARACTER**

## SECTION 6

### VISUAL QUALITY AND SCENIC CHARACTER

In 1962, Route 1 was rerouted around Belfast to the location of where it is now currently abutting the school development. Prior to the construction of the school campus in 1965, the site operated as a farm and the high school building and associated athletic fields were across the street. The farm area consisted of open fields and farm buildings. The original development of the property to the high school campus was in keeping with the scenic character of the surrounding areas by utilizing the open fields of the farm and placing the large school building away from the road.

The proposed track and field renovation is renovating those spaces in place and will not be moving them from their original location on the site; thus, not changing the scenic character of surrounding area that has been come to be known as a high school campus over the last 50+ years.

As part of the proposed track and field renovation, new athletic lighting is being proposed to replace the existing metal halide athletic lighting at the track and field. The new lighting will utilize two (2) 70' tall poles and two (2) 80' tall poles at the field of play - two on each side of the track just outside of the fence.

The proposed system is designed and manufactured by Musco Sports Lighting and will utilize the latest LED technology from Musco and their Control Link System, which simplifies the programming and scheduling of the lighting.

The system will provide an average light level of 50 foot-candles at the playing surface. Each pole will utilize LED fixtures with nine (9) fixtures each on poles F1-F4 at elevations ranging from 70'-80'. The heights described allow for the best light control at the field which considers the foot-candle levels on the field, uniformity of that lighting within the field, and spill of the light outside the playing area. Better lighting control onto the immediate surface greatly reduces spill of light to surrounding areas. The images attached to the end of this narrative demonstrate the extremely limited amount of spill that occurs when using the LED fixtures. The new lighting system allows for better glare and spill control which will improve on the existing track and field lighting system.

# Belfast High School Multipurpose

Belfast, ME

## Lighting System

Pole/Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F2	70'	70'	9	TLC-LED-1200	10.53 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
F3-F4	80'	80'	9	TLC-LED-1200	10.53 kW	A
		70'	1	TLC-LED-550	0.54 kW	B
		16'	2	TLC-BT-575	1.15 kW	A
<b>4</b>			<b>46</b>		<b>47.80 kW</b>	

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Football	46.72 kW	44
B	Bleacher	1.08 kW	2

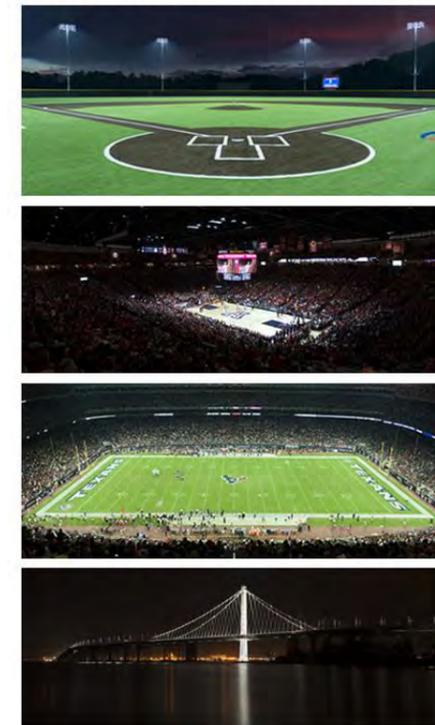
Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-LED-1200	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	36
TLC-LED-550	LED 5700K - 75 CRI	540W	67,000	>120,000	>120,000	>120,000	2

Single Luminaire Amperage Draw Chart							
Driver Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.8	1.4

## Light Level Summary

Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Bleacher	Horizontal	6.05	2	11	5.61	2.99	B	2
Football	Horizontal Illuminance	51.34	38	65	1.73	1.36	A	44
Soccer	Horizontal Illuminance	51.02	38	66	1.72	1.33	A	44
Spill at 150'	Horizontal Illuminance	0.1042	0.01	0.32	22.967	7.533	A	44
Spill at 150'	Max Vertical Illuminance Metric	0.2931	0.06	0.73	12.002	4.845	A	44
Spill at 150' (Cd)	Max Candela (by Fixture)	7006.3979	1197.50	13333.60	11.135	5.851	A	44

## From Hometown to Professional



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Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	70'	-3'	67'	TLC-LED-1200	9	9	0
				12.5'	TLC-BT-575	2	2	0
2	F3-F4	80'	10'	90'	TLC-LED-1200	9	9	0
				80'	TLC-LED-550	1	0	1
				25.5'	TLC-BT-575	2	2	0
4	Totals					46	44	2

\*Above Grade level relative to the field

## Belfast High School Multipurpose

Belfast, ME

Grid Summary	
<b>Name</b>	Football
<b>Size</b>	360' x 160'
<b>Spacing</b>	30.0' x 30.0'
<b>Height</b>	3.0' above grade

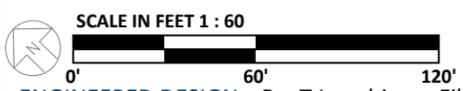
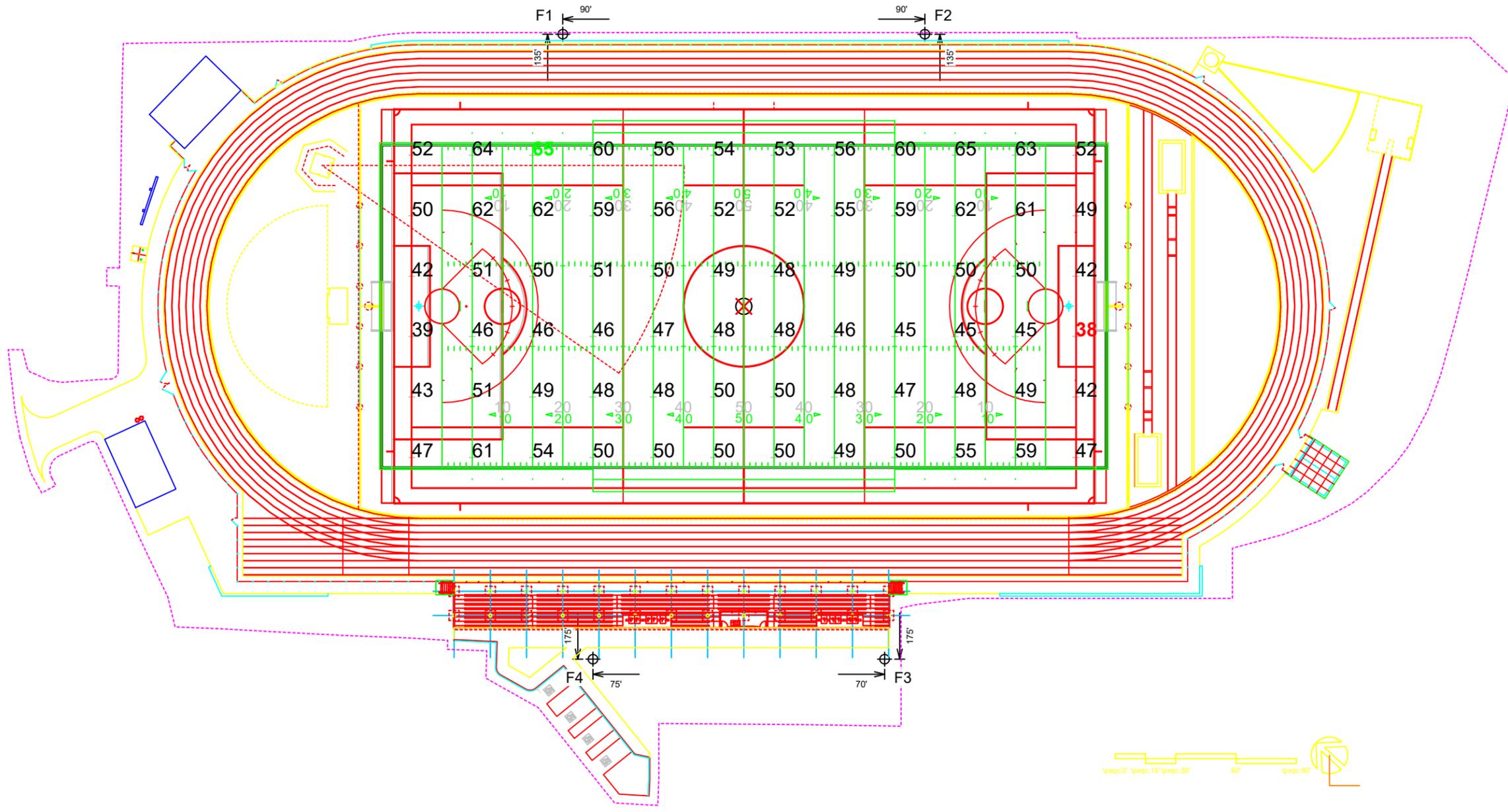
Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
<b>Guaranteed Average</b>	Entire Grid: 50
Scan Average	51.34
Maximum	65
Minimum	38
Avg/Min	1.36
<b>Guaranteed Max/Min</b>	2
Max/Min	1.73
UG (adjacent pts)	1.28
CU	0.57
No. of Points	72
LUMINAIRE INFORMATION	
Applied Circuits	A
<b>No. of Luminaires</b>	44
Total Load	46.72 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	70'	-3'	67'	TLC-LED-1200	9	9	0
				12.5'	TLC-BT-575	2	2	0
2	F3-F4	80'	10'	90'	TLC-LED-1200	9	9	0
				80'	TLC-LED-550	1	0	1
				25.5'	TLC-BT-575	2	2	0
4	Totals					46	44	2

\*Above Grade level relative to the field

## Belfast High School Multipurpose

Belfast, ME

Grid Summary	
<b>Name</b>	Soccer
<b>Size</b>	350' x 195'
<b>Spacing</b>	30.0' x 30.0'
<b>Height</b>	3.0' above grade

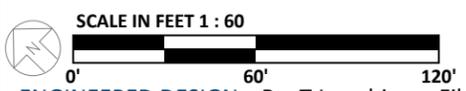
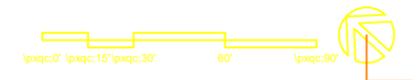
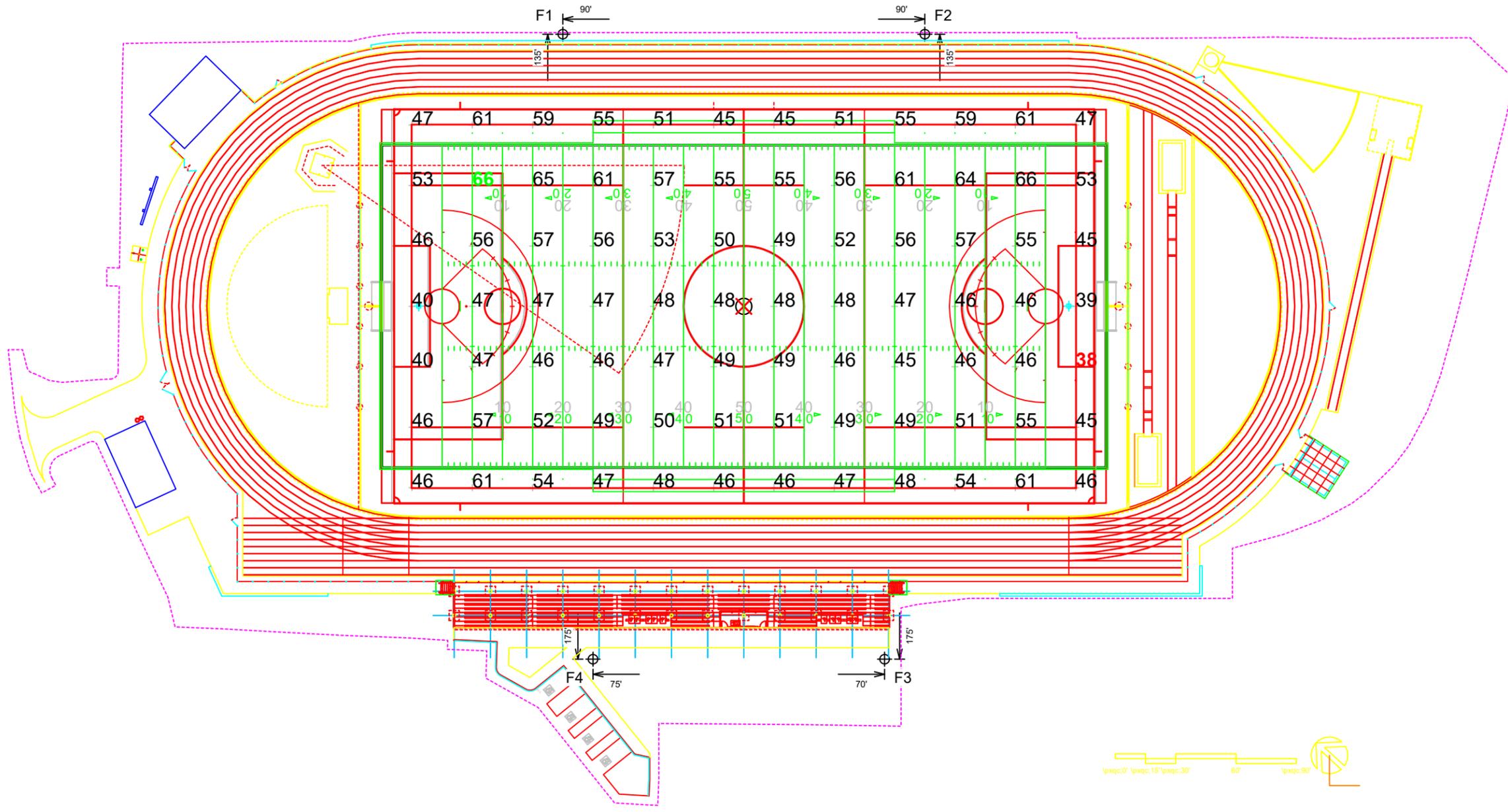
Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
<b>Guaranteed Average</b>	Entire Grid <b>50</b>
Scan Average	51.02
Maximum	66
Minimum	38
Avg/Min	1.33
<b>Guaranteed Max/Min</b>	<b>2</b>
Max/Min	1.72
UG (adjacent pts)	1.34
CU	0.66
No. of Points	84
LUMINAIRE INFORMATION	
Applied Circuits	A
<b>No. of Luminaires</b>	<b>44</b>
Total Load	46.72 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



ENGINEERED DESIGN By: T.Lanphier • File #239021B • 12-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

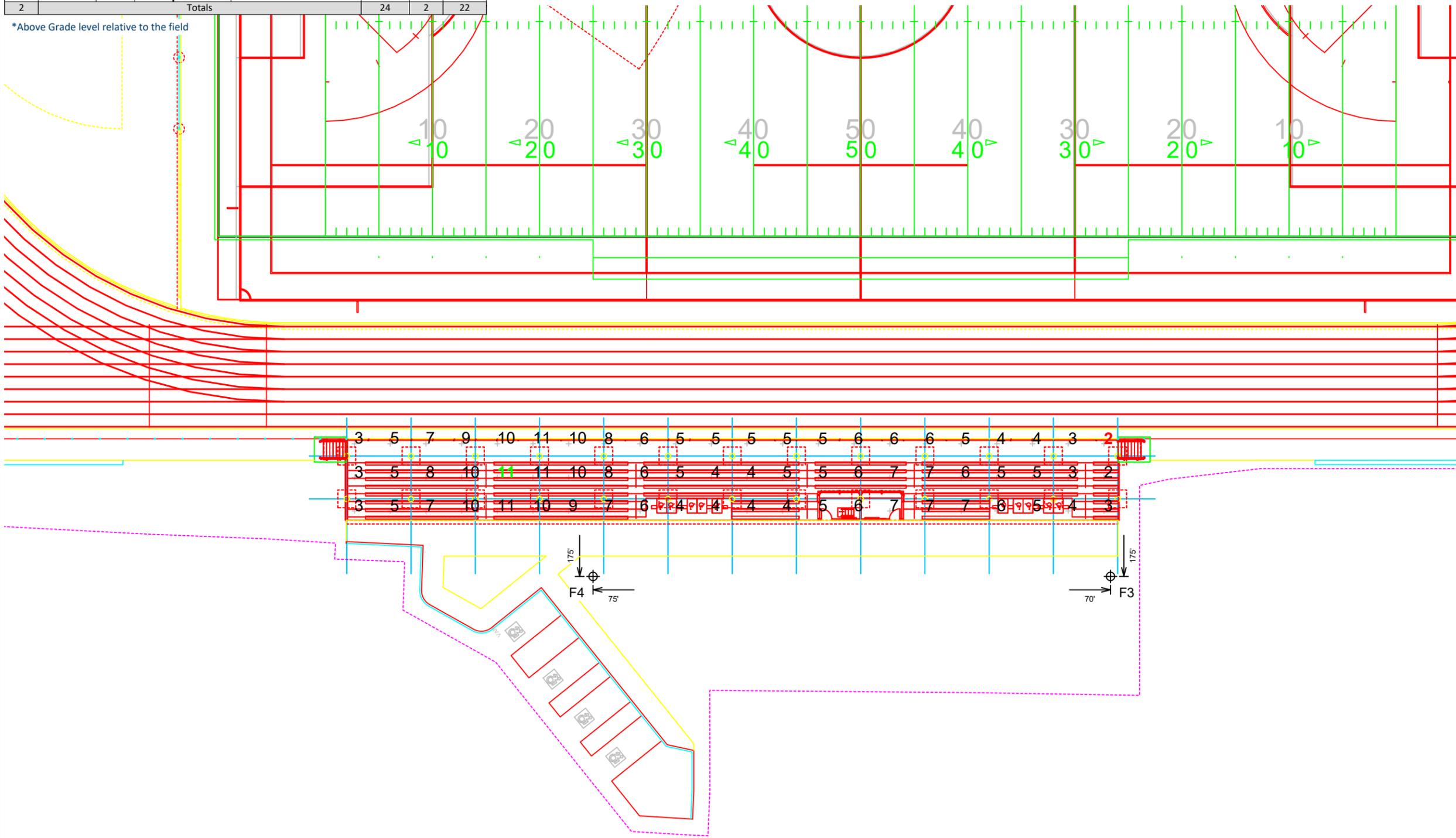


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## ILLUMINATION SUMMARY

Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F3-F4	80'	10'	90'	TLC-LED-1200	9	0	9
				80'	TLC-LED-550	1	1	0
				25.5'	TLC-BT-575	2	0	2
2	Totals					24	2	22

\*Above Grade level relative to the field



### Belfast High School Multipurpose

Belfast, ME

Grid Summary	
Name	Bleacher
Size	350' x 195'
Spacing	10.0' x 10.0'

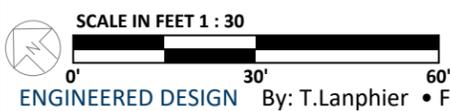
Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Scan Average	6.05
Maximum	11
Minimum	2
Avg/Min	2.99
Max/Min	5.61
UG (adjacent pts)	1.77
CU	0.26
No. of Points	66
LUMINAIRE INFORMATION	
Applied Circuits	B
No. of Luminaires	2
Total Load	1.08 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



ENGINEERED DESIGN By: T.Lanphier • File #239021B • 12-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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### ILLUMINATION SUMMARY

**Belfast High School Multipurpose**

Belfast, ME

Grid Summary	
Name	Spill at 150'
Spacing	30.0' x 30.0'
Height	3.0' above grade

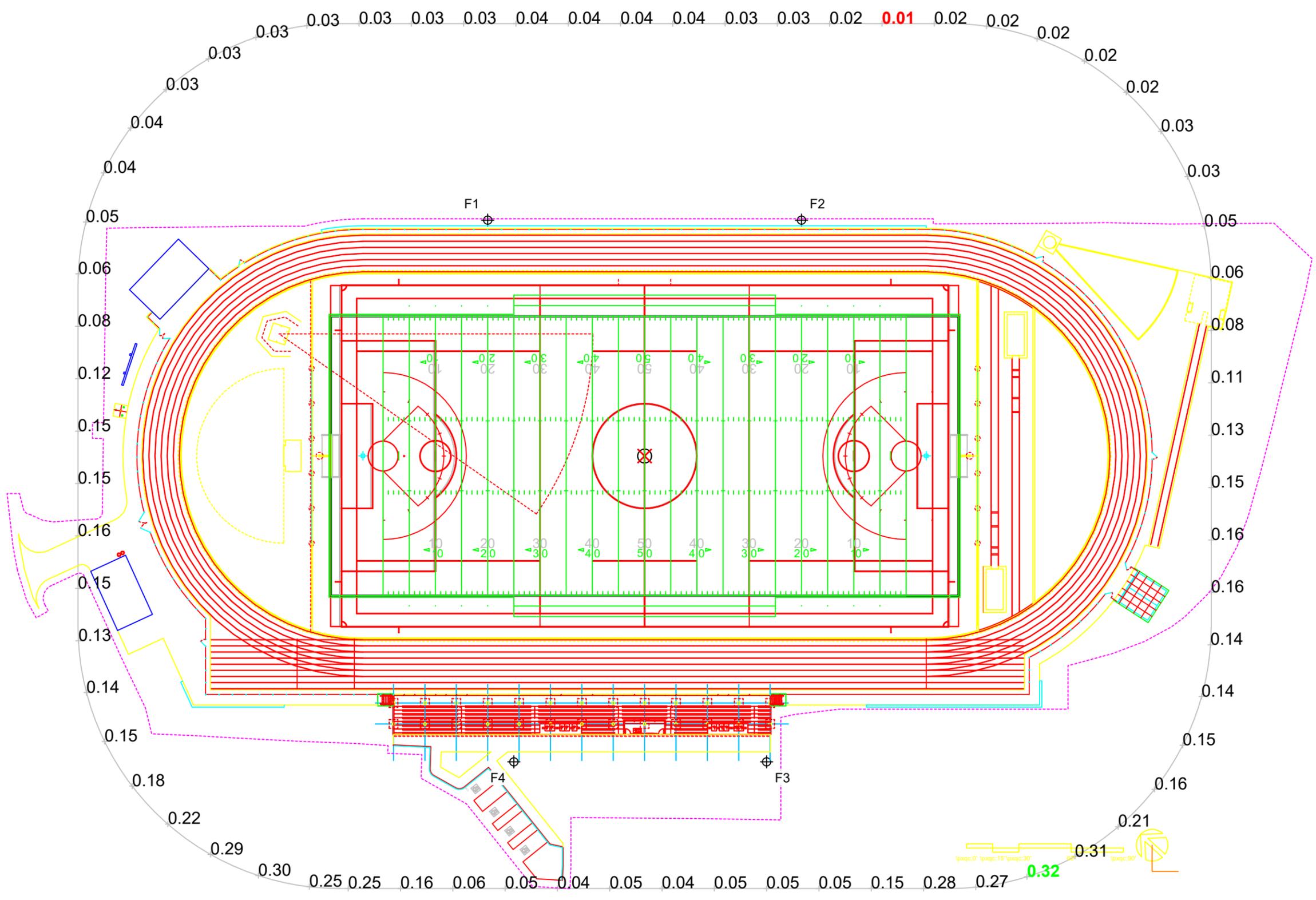
Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
Scan Average	0.1042
Maximum	0.32
Minimum	0.01
CU	0.00
No. of Points	68
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	44
Total Load	46.72 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 60  
 0' 60' 120'  
 ENGINEERED DESIGN By: T.Lanphier • File #239021B • 12-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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**ILLUMINATION SUMMARY**

**Belfast High School Multipurpose**

Belfast, ME

Grid Summary	
Name	Spill at 150'
Spacing	30.0' x 30.0'
Height	3.0' above grade

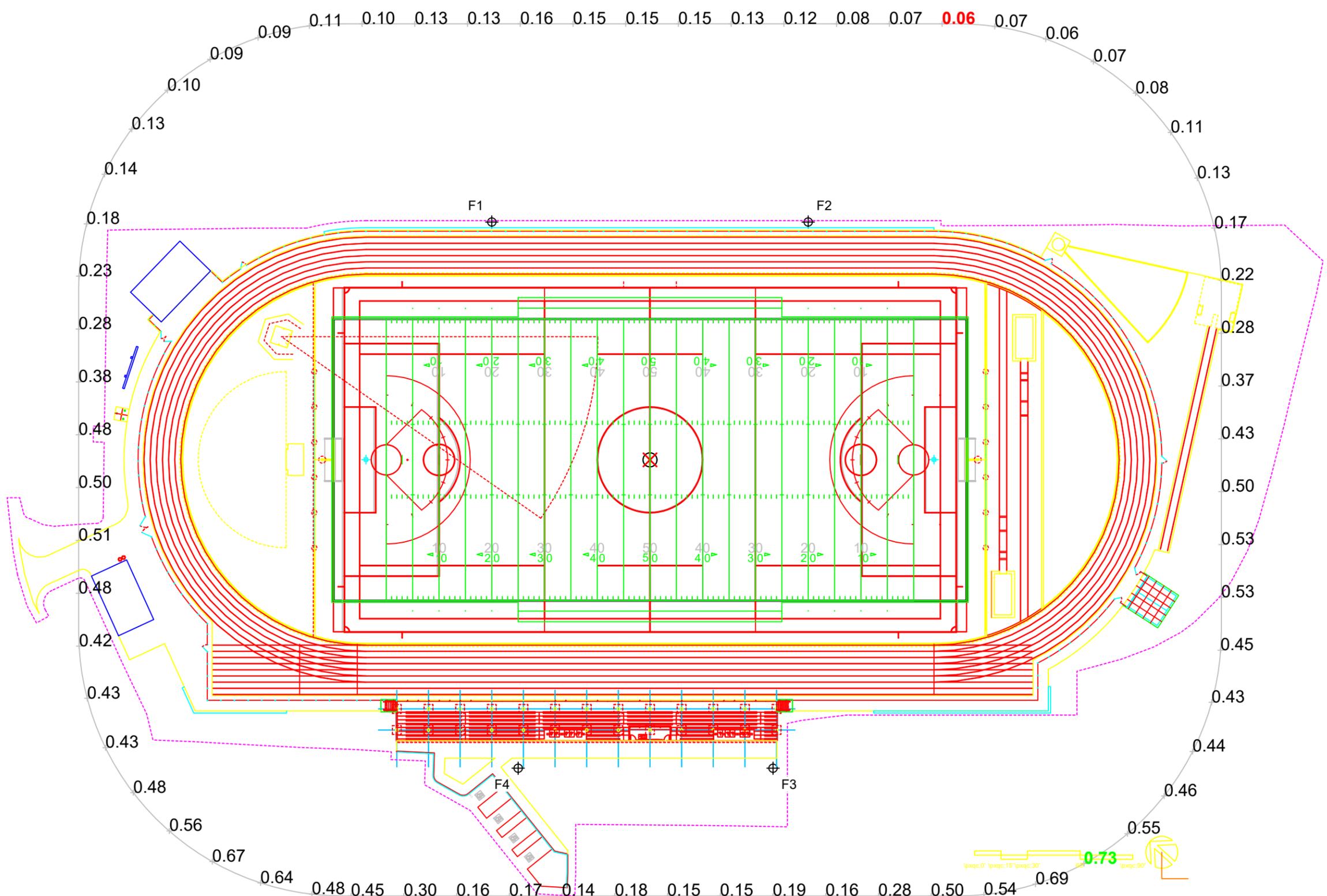
Illumination Summary	
MAINTAINED MAX VERTICAL FOOTCANDLES	
Scan Average	0.2931
Maximum	0.73
Minimum	0.06
CU	0.00
No. of Points	68
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	44
Total Load	46.72 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 60  
 0' 60' 120'  
 ENGINEERED DESIGN By: T.Lanphier • File #239021B • 12-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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**ILLUMINATION SUMMARY**

**Belfast High School Multipurpose**

Belfast, ME

Grid Summary	
Name	Spill at 150' (Cd)
Spacing	30.0' x 30.0'
Height	5.0' above grade

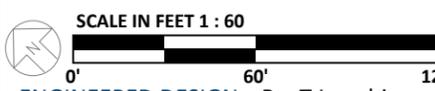
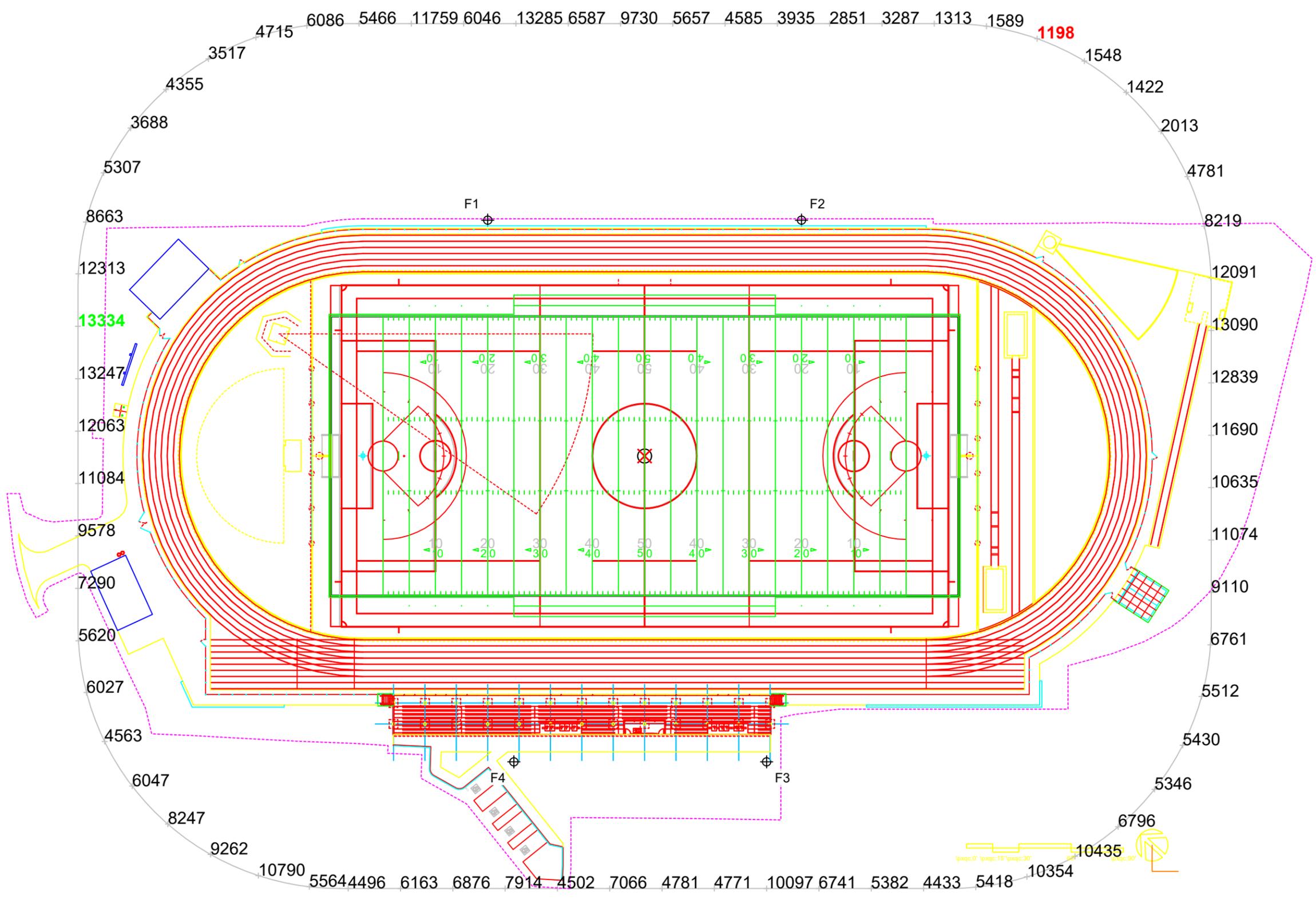
Illumination Summary	
MAINTAINED CANDELA (PER LIGHTBANK)	
Entire Grid	7006.3979
Scan Average	7006.3979
Maximum	13333.60
Minimum	1197.50
CU	0.00
No. of Points	68
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	44
Total Load	46.72 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



ENGINEERED DESIGN By: T.Lanphier • File #239021B • 12-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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**ILLUMINATION SUMMARY**

**Belfast High School Multipurpose**

Belfast, ME

**Equipment Layout**

**INCLUDES:**  
 · Football  
 · Soccer

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

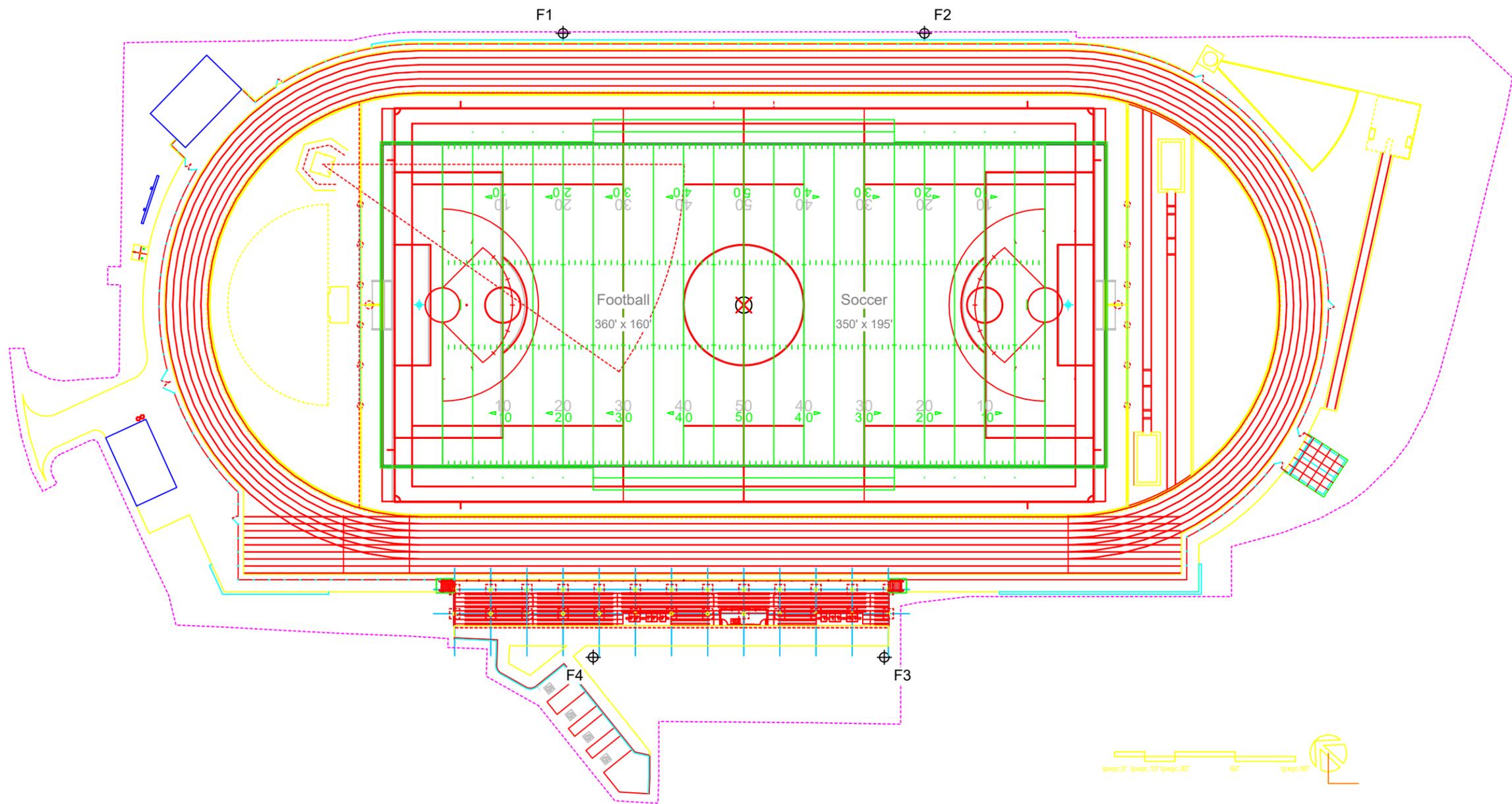
**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

**Equipment List For Areas Shown**

QTY	LOCATION	Pole		Luminaires			
		SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	
2	F1-F2	70'	-3'	67'	TLC-LED-1200	9	
				12.5'	TLC-BT-575	2	
2	F3-F4	80'	10'	90'	TLC-LED-1200	9	
				80'	TLC-LED-550	1	
				25.5'	TLC-BT-575	2	
4	Totals						46

**Single Luminaire Amperage Draw Chart**

Driver Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	480 (60)
Single Phase Voltage						
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.4



SCALE IN FEET 1 : 60  
 0' 60' 120'

ENGINEERED DESIGN By: T.Lanphier • File #239021B • 12-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



**We Make It Happen.**

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**EQUIPMENT LAYOUT**

**SECTION 7: WILDLIFE AND FISHERIES**

## SECTION 7

### WILDLIFE AND FISHERIES

Activitas, Inc. made a request to the Maine Inland Fisheries and Wildlife (MDIF&W) to review the site and its surroundings to verify the proposed project will have no impacts to significant wildlife or fisheries habitat. Please see the attached response.



JANET T. MILLS  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
353 WATER STREET  
41 STATE HOUSE STATION  
AUGUSTA ME 04333-0041



JUDITH CAMUSO  
COMMISSIONER

January 6, 2025

Ben McDonough  
Activitas  
70 Milton Street  
Dedham, MA 02026

**RE: Information Request - 25 Lions Way, Belfast Area High School, Belfast Project ID 8614-9962**

Dear Ben:

Per your request received on October 25, 2024, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information sources for known locations of Endangered, Threatened, and Special Concern (Rare) species; designated Essential and Significant Wildlife Habitats; inland fisheries and aquatic habitats; and other protected natural resource concerns within the vicinity of the **25 Lions Way, Belfast Area High School, Belfast** project, pursuant to MDIFW's authority. MDIFW understands the project proposes renovation of an existing track and field facility.

Our Department has not mapped any Essential Habitats, Endangered, Threatened, and Special Concern Species, Significant Wildlife Habitats, or inland fisheries resources that would be affected by this project.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance, we recommend additional consultation with the municipality, and other state resource and regulatory agencies including the Maine Natural Areas Program and the Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance. For information on federally listed species, contact the U.S. Fish and Wildlife Service's Maine Field Office (207-469-7300, [mainefieldoffice@fws.gov](mailto:mainefieldoffice@fws.gov)).

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

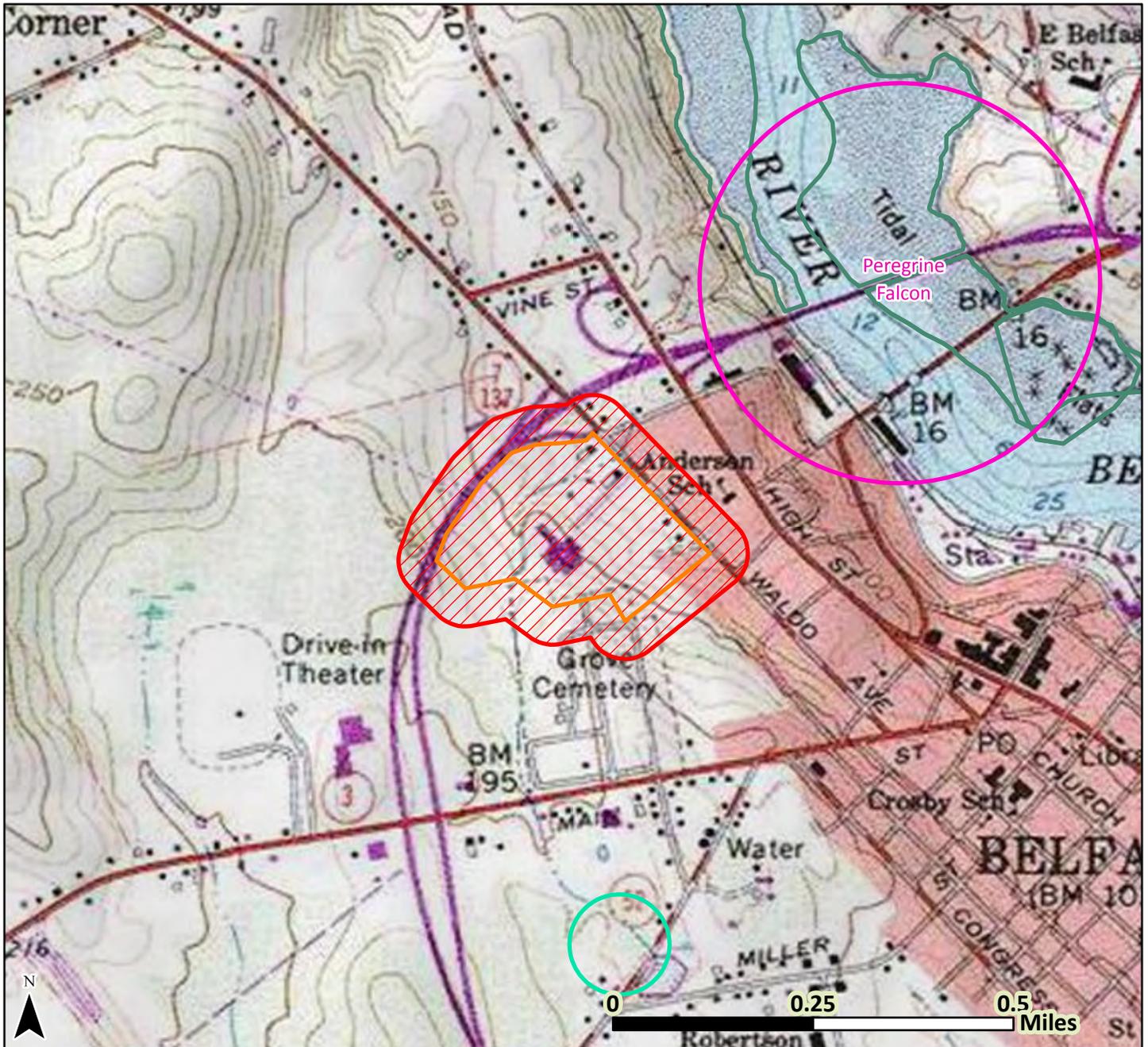
Andrew J. Wood  
Environmental Review Coordinator



Maine Department of Inland Fisheries and Wildlife  
Project Area Review of Fish and Wildlife Observations and Priority Habitats

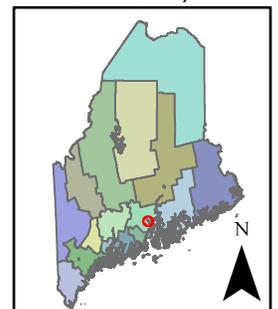
25 Lions Way, Belfast Area Highschool, Belfast

Project ID 8614, Version ID 9962



- County Boundary
- Township Boundary
- Project Footprint
- Search Area
- E, T, & SC Species
- Significant Vernal Pool
- Tidal Waterfowl/Wading Bird

Date: 11/1/2024  
Projection:  
UTM Zone 19N, NAD83



Legend only lists resources visible in the map; see response letter for all resources that were evaluated.

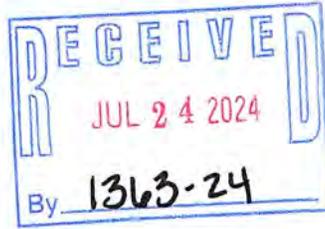
**SECTION 8: HISTORIC SITES**

## SECTION 8

### HISTORIC SITES

Prior to the development of the high school campus, the property was operating as a working farm. If any historic properties existed on site, it is likely they would have been found during the construction of the original project, during which none were found.

Activitas, Inc. has made a request to the Maine Historic Commission to review the proposed track and field renovation site and its surroundings to verify that there are no impacts to historically or archaeologically significant areas. Please see the attached response from the Commission.



**MEMORANDUM**

**Subject:** Request for Review of Proposed Project

**Project:** **RSU 71 Belfast Area High School Track and Field Renovations**  
**Project No.** 24002.00

**Date:** 24 July 2024

**To:** Maine Historic Preservation Commission  
55 Capitol Street  
Augusta, ME 04333

**By:** Alexander Anderson  
Landscape Designer

**Delivery:** via email (*MHPCprojectreview@maine.gov*)

**Distribution:** Holly Ganser, Civil Engineer                      Steve Crisafulli, Associate  
(via email)

---

Activitas, Inc respectfully requests a project review by Maine Historic Preservation Commission for a proposed athletic facility renovation located at Belfast Area High School. The proposed project described below is in the initial design phase; however it is anticipated that a NRPA Permit Application will be submitted to Maine D.E.P for impacts to wetlands.

The project is located on the Belfast Area High School campus at their existing track and field located to the northeast of the school building. The existing conditions of the proposed project site are comprised of an asphalt 6 lane running track and a natural grass playing field within the track oval. Various support buildings and an area for spectator seating are located outside the track oval.

The proposed project consists of completely renovating the existing track and field. The 6-lane track will be reconfigured to include an 8-lane straight. The project will also include the conversion of the natural grass field to a synthetic turf field. A new area will be defined for jump and throw events for track. Additional site improvements include new support buildings, new bleachers and other landscape and entrance improvements. Various utility upgrades will be included in the project as the project requires.

If you have any questions or comments on the enclosed information, please do not hesitate to contact me directly at (207) 323-4846 or by email at [aja@activitas.com](mailto:aja@activitas.com).

Memorandum  
24 July 2024

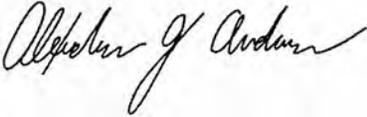
RSU 71 Belfast Area High School Track and Field Renovations  
Request for Review of Proposed Project

Page 2 of 2

# ACTIVITAS

Respectfully,

**ACTIVITAS**



**Alexander Anderson**  
Landscape Designer  
aja@activitas.com

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.



**Kirk F. Mohney,**  
State Historic Preservation Officer  
Maine Historic Preservation Commission

8/15/24  
Date

MHPC # 1363-24

**SECTION 9: UNUSUAL NATURAL AREAS**

## SECTION 9

### UNUSUAL NATURAL AREAS

Prior to the development of the high school campus, the property was operating as a working farm. It is unlikely that any unusual natural areas were present on the site at the time of the original development or additional site improvements after January 1, 1970.

Activitas, Inc. has made a request to the Natural Areas Program to review the proposed track and field renovation site and surrounding areas. Biological Conservation Data System files were searched for the presence of rare or unique botanical features documented near the project area. Please see the attached Natural Areas Program's response.



**STATE OF MAINE**  
**DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY**

177 STATE HOUSE STATION  
AUGUSTA, MAINE 04333

**JANET T. MILLS**  
GOVERNOR

**AMANDA E. BEAL**  
COMMISSIONER

November 8, 2024

Benjamin McDonough  
Activitas  
70 Milton Street  
Dedham, MA 02026

Via email: [bjm@activitas.com](mailto:bjm@activitas.com)

Re: Rare and exemplary botanical features in proximity to: #24002.00, RSU 71 Belfast Area High School Track and Field Renovations, Belfast, Maine

Dear Benjamin McDonough:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received October 25, 2024 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Belfast, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. Based on the information in our files and the landscape context of this project, there is a low probability that rare or significant botanical features occur at this project location.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

**MOLLY DOCHERTY, DIRECTOR**  
MAINE NATURAL AREAS PROGRAM  
90 BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-8044  
[WWW.MAINE.GOV/DACF/MNAP](http://WWW.MAINE.GOV/DACF/MNAP)

Letter to Activitas  
Comments RE: RSU 17 Track, Belfast  
November 8, 2024  
Page 2 of 2

The Maine Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

*Lisa St. Hilaire*

Lisa St. Hilaire | Information Manager | Maine Natural Areas Program  
207-287-8044 | [lisa.st.hilaire@maine.gov](mailto:lisa.st.hilaire@maine.gov)

**SECTION 10: BUFFERS**

## SECTION 10

### BUFFERS

The original high school campus development did not construct any formalized natural buffers in its development.

There are also no buffer strips proposed as part of the track and field renovation or as part of the treatment for the additional improvements the campus has made since January 1, 1970.

**SECTION 11: SOILS**

## SECTION 11

### SOILS

Please refer to the NRCS Soil Survey included in this section for the soil distribution across the development. The original development was built on soil types suitable for the school buildings, driveways and parking lots as the development currently is not experiencing any settlement or major erosion.

Geotechnical explorations were performed in the area of the proposed renovated track and field and included with this section as well. The geotechnical explorations found soils that are suitable for the type of proposed construction.

3 July 2024  
File No. 209731-000

Activitas Inc.  
70 Milton Street  
Dedham, MA 02026

Attention: Stephen Crisafulli

Subject: Belfast Area High School Track and Field Renovation  
25 Lions Way  
Belfast, Maine

Mr. Crisafulli:

This letter report summarizes the results of recent subsurface explorations, provides recommendations for geotechnical design, and comments on geotechnical-related construction considerations for renovations to the Belfast Area High School track and field facilities located in Belfast, Maine.

Our understanding of the proposed renovation to the existing athletic field and facilities is based on discussions with Activitas Inc. (Activitas) and a review of schematic design level renderings prepared by Activitas and dated 3 October 2023.

Currently, the Belfast Area High School planned athletic facilities upgrades consist of:

- A six (6) lane synthetic track (400 M), including pole vault, long/triple jump, high jump, discus and shotput areas
- Conversion of existing grass athletic field to a multi-sport synthetic turf field
- Installation of 4 Pole LED Sports Lighting System
- Construction of new facilities including home bleachers, press box, and prefabricated storage buildings
- Various site improvements including installation of a scoreboard and landscape improvements



Image 1: Belfast Area High School Preferred Option Plan provided by Activitas

## EXISTING CONDITIONS

Based on aerial photographs of the area, the project site currently consists of an athletic field and a rubberized track. The track and field area grades are relatively flat and range between Elevation (El.) 134 to 136 (NAVD88)<sup>1</sup>. Site grades slope up to about El. 145.0 towards the Belfast Area High School and slope down towards the Waldo Avenue residences at about El. 120.0. The site is bounded to the north by Waldo Avenue residences, by undeveloped land to the east, the Belfast Area High School building to the south, and Lions Way to the west.

The site is in an area of minimal flood hazard, as defined by the FEMA Flood Hazard Map shown in Image 2.



Image 2: FEMA National Flood Hazard Map for the Site.

## SUBSURFACE EXPLORATIONS

Between 21 and 24 May 2024, Haley & Aldrich, Inc (Haley & Aldrich) implemented a subsurface exploration program consisting of geoprobe and test boring explorations to observe soil and groundwater conditions. Approximate ground surface elevations at each exploration location were obtained from survey elevations on Drawing “Underground Utilities” dated 15 February 2024 and provided by Activitas on 18 April 2024. The subsurface explorations are shown on Figure 1 and were located and monitored in the field by a Haley & Aldrich geologist. Following completion of each test boring and geoprobe, the explorations were backfilled with cuttings and sand.

### Test Boring Explorations

Test borings were completed at the site to observe subsurface conditions within the general limits of the proposed sport lighting system. A total of four (4) test borings, designated TB-01 through TB-04, were performed by New England Boring Contractors of Hermon, Maine between 21 and 22 May 2024. Test borings were drilled to 21 to 32 feet (ft) below ground surface (bgs). Detailed descriptions of conditions encountered at the test borings are provided on logs included in Appendix A.

Generalized Subsurface Stratum	Depth Top of Stratum (ft)	Stratum Thickness (ft)
Fill	0.0	1.5 to 13.0
Glaciomarine Deposits	2.0 to 13.0	NE to 13.0
Glacial Till	1.5 to 19.0	10.0 to 17.3
Bedrock	18.8 to 25.0	Not Determined

NE: Not Encountered

<sup>1</sup> Elevations in this report are in feet and reference the North American Vertical Datum of 1988 (NAVD88).

## Geoprobe Explorations

Geoprobe explorations were completed at the site to observe subsurface conditions within the general limits of the proposed athletic field and track. A total of twenty-one (21) geoprobe explorations were completed by Environmental Projects, Inc. of Auburn, Maine between 23 and 24 May 2024. The geoprobe explorations were advanced between 7 and 15 ft bgs. Detailed descriptions of conditions encountered at the geoprobes are provided on logs included in Appendix B.

Generalized Subsurface Stratum	Depth Top of Stratum (ft)	Stratum Thickness (ft)
Fill	0.0	3.3 to 14.0
Glaciomarine Deposits	3.3 to 13.0	NE to 5.3
Glacial Till	4.2 to 14.8	Not Determined

NE: Not Encountered

## Area Surficial Geology

Overburden natural soils at the site were primarily a result of the most recent Pleistocene ice advance and retreat, depositing an irregular and heterogeneous blanket of Glacial Till, that consists of varying proportions of silt-to-gravel size fractions. Overlying the Glacial Till in some areas were fill, topsoil, and Glaciomarine Deposits (not shown at surface in Image 2) containing silt, clay, and sand that were deposited on the late-glacial sea floor.

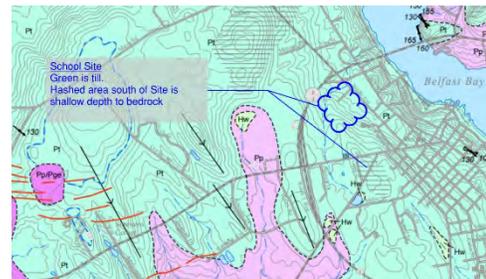


Image 3 From "Belfast Quadrangle, Maine" Maine Geologic Survey, Open-File No. 14-13, dated 2014.

## Subsurface Soil Conditions

Based on review of the subsurface data, the near-surface soil profile can be generally described as consisting of existing topsoil overlying man-placed Fill over naturally-deposited inorganic Glacial Deposits. The Glacial Deposits encountered include Glaciomarine Deposits and Glacial Till. In explorations where the Glacial Till layer was fully penetrated, bedrock was encountered. The following is a summary description of each subsurface unit in descending order of occurrence bgs.

- **Fill** – The variable Fill layer consisted of a loose brown silty SAND and a soft to medium stiff sandy SILT with varying amounts of sand, silt, clay, cobbles, and asphalt. Where topsoil was encountered at the top of the Fill layer, the topsoil thickness ranged between 0.2 to 0.8 ft.
- **Glaciomarine Deposits** – At eleven (11) geoprobe and three (3) test boring locations, a Glaciomarine Deposits layer was encountered underlying the Fill layer. Where encountered, the Glaciomarine Deposits consisted of soft gray-brown sandy SILT with trace roots and organic fibers, medium stiff to hard brown-gray CLAY with trace sand, and a medium brown silty SAND.
- **Glacial Till** – Glacial Till was encountered in most explorations, either underlying the Fill or Glaciomarine Deposits. The Glacial Till was not encountered in six (6) geoprobe locations where the Glaciomarine Deposit layer was not fully penetrated. The Glacial Till consisted of stiff brown SILT

with varying amounts of sand and medium dense to dense gray silty SAND. Cobbles and boulders were encountered in some explorations between depths of 6 to 25 ft bgs. In geoprobe GP-05, decomposed wood and an approximately 2-inch (in.) thick layer of Peat was encountered at 7 ft bgs. Weathered phyllite was encountered in the Glacial Till in test boring TB-03.

- **Bedrock** – Two test borings, TB-03 and TB-04, encountered top of bedrock between 18.8 and 25.0 ft bgs. The presence of weathered phyllite below the Glacial Till and refusal with the split spoon sampler indicated the probable top of Bedrock. In both test borings, the roller bit was advanced between 2.2 and 2.4 ft into the bedrock and was characterized by hard drilling.

### Groundwater Conditions

Groundwater observation wells were not installed as part of the recently completed subsurface exploration program. Depth to groundwater varied in the recent test boring explorations and ranged from 8 to 13 ft. Groundwater was not observed in the geoprobe explorations. Groundwater measurements obtained in this manner are not considered to be stabilized measurements of depth to groundwater.

In general, groundwater levels should be anticipated to fluctuate with season, precipitation, temperature, nearby construction activities, surface runoff, leakage into or out of below-grade structures and utilities, and other factors. As a result, groundwater levels observed during construction may differ from those observed during the explorations.

## GEOTECHNICAL DESIGN RECOMMENDATIONS

### General

Foundation design recommendations provided herein are based on the above referenced subsurface investigations, information provided by the project team, and our engineering evaluations. As a general recommendation, foundation design and construction should be performed in accordance with the Maine Uniform Building and Energy Code (IBC 2015 with applicable Amendments).

### Site Development

Construction will require management of existing on-site materials during excavation of the Fill layer. In order to minimize the cost of transporting and disposing of material off-site, every effort should be made by the designers and contractor to process, and reuse excavated material on-site, whether in landscaped areas around the site or for material meeting specific geotechnical criteria as backfill.

Existing utilities to be abandoned will require cut-and-capping beyond the plan limits of the work and/or complete removal. Existing, active utilities to remain and new utilities to be installed will require coordination with new work to avoid potential design conflicts, and construction activities will need to be coordinated to not impact operation of active utilities to remain or new utilities to be constructed. Additionally, construction activities will need to be coordinated to not interrupt/impact underground utilities.

## Synthetic Track

A subsurface exploration program was not conducted by Haley & Aldrich within the limits of the existing track or part of the proposed field throwing areas as part of our scope of work in order to minimize disruption to the school's sports activities. Geoprobe explorations were completed adjacent to the existing track.

The following provides general recommendations for design and construction of a new rubberized track, field throwing areas, and pole vault and long/triple jump area. The following assumes the existing track is currently supported on a typical minimum 12-in. thick layer of aggregate for subbase Type D per MaineDOT Supplemental Specification Section 703.06 "Aggregate for Base and Subbase." The thickness of asphalt for the existing track and existing subgrade soil type and thickness should be confirmed/quantified during design and construction pricing for the project.

- Following removal of the rubberized surface, reclaim the existing asphalt track by scarifying and pulverizing the in-place asphalt and underlying material. We recommend the reclaimed asphalt and underlying material be mixed to a minimum depth of 12-in. and result in a homogenous material with a maximum particle size of 3-in. and not more than 25% of material passing the No. 200 sieve.
- Following reclaiming of asphalt, subgrade preparation should include re-grading and compaction of the reclaimed material to a dry density of at least 95% of the maximum dry density as determined in accordance with ASTM Test Designation D1557. As a minimum, the fill should receive four complete coverages with suitable compaction equipment.
- For backfill material placed to raise site grades to design subgrade elevation, we recommend soil lifts with a maximum 8-in. thick layer of aggregate subbase Type D material (per MaineDOT Supplemental Specification Section 703.06 "Aggregate for Base and Subbase"). Backfill placed to raise site grades to design elevation shall be compacted to 95% of the material's maximum dry unit weight (determined in accordance with ASTM D1557). As a minimum, each layer of fill should receive four complete coverages with suitable compaction equipment.
- Per MaineDOT Supplemental Specification Section 703.06 "Aggregate for Base and Subbase," aggregate for subbase Type D shall be sand or gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3-in. sieve shall meet the grading requirements of the following table:

Sieve Size	Percent Passing By Weight
1/2 in.	35 - 80
1/4 in.	26 - 65
No. 40	0 - 30
No. 200	0 - 7

- 
- If portions of the proposed track extend beyond the existing plan limits of the track, we recommend complete removal of the existing topsoil prior to compacting the subgrade and placement and compaction of a minimum 12-in. thick lift of aggregate subbase Type D per MaineDOT Supplemental Specification Section 703.06 "Aggregate for Base and Subbase" to design subgrade elevation.

### Synthetic Turf Athletic Field

Given our understanding of the athletic field upgrade from grass to a synthetic turf system, the following geotechnical recommendations for design of the synthetic turf fields are provided.

- Preparation of the subgrade immediately below the synthetic turf system and shot put area will require excavation/stripping and removing of Topsoil within the limits of the field's footprint. Based on conditions encountered in the recently completed explorations, the soil materials anticipated to be removed by the excavation to achieve design subgrade for the synthetic turf system are likely to be comprised of the Topsoil and/or Fill units.
- In some areas, controlled placement and compaction of an approved backfill material up to design subgrade elevation will be required. Backfill materials for subbase may include previously excavated granular non-organic Fill soils encountered during the stripping/removal of the near-surface soils or imported Granular Borrow. At a minimum, on-site granular Fill used as backfill shall consist of well-graded granular materials containing less than 25% fines.
- Reuse of any excavated soils will be dependent upon visual characterization of the materials and results of grain size analyses and laboratory compaction tests. Accordingly, we recommend to the extent possible that an on-site location be established for segregating, processing, and stockpiling excavated soils.
- Following completion of excavation to strip/remove the near-surface soils down to design subgrade elevation for the new turf system, prepare the subgrade using a large compaction roller to prepare a firm, dry, and stable subgrade. If during static rolling of the subgrades, pumping or weaving conditions are observed, alternative compaction techniques may be required and/or additional subgrade preparation may be recommended (e.g., removal and replacement of soft, compressible soils).
- Where encountered at proposed design subgrade elevation, over-excavate and remove boulders or obstructions (greater than 1 ft in diameter) to construct a suitable subgrade surface.
- After placement of a nonwoven geotextile fabric (Mirafi 160N or similar) on suitable subgrade, place and compact Granular Borrow to raise site grades to design elevation for the synthetic field drainage system. Granular Borrow backfill shall be graded to divert collected stormwater to the synthetic turf field drainage system prior to being compacted to 95% of the material's maximum dry unit weight (determined in accordance with ASTM D1557). As a minimum, each layer of Granular Borrow should receive four complete coverages with suitable compaction equipment.
- Granular Borrow shall be obtained from off-site sources and shall consist of naturally occurring or processed, inert material that is hard, durable natural stone and coarse sand, free from contamination, loam, clay, surface coatings, and deleterious materials.

Sieve Size	Percent Passing By Weight
3 in.	100
No. 40	0 – 70
No. 200	0 – 20

Granular Borrow shall contain no particles or fragments with a maximum dimension in excess of the compacted thickness of the layer being placed.

- At all times prior to placement of the turf system, we recommend maintaining a dry and undisturbed design subgrade to ensure a stable working surface to receive the turf system. Temporary re-grading outside the limits of the new field will be required to divert surface runoff away from the work areas. Construction dewatering is not anticipated; however, if it becomes necessary, efforts should be taken by the contractor to discharge dewatering effluent to an on-site recharge system at distances away from the work areas so as not to disturb subgrade preparation.
- For the permanent condition, the maintenance, protection and long-term performance of the synthetic turf field will require an effective stormwater runoff collection and management system. Anticipated subsurface soils at and/or within shallow depths of the anticipated design subgrade level for the new synthetic turf fields are likely to consist of fine-grained sandy silts/silty sands that have poor drainage characteristics – vertically and laterally. Design of any sub-turf drainage systems must consider the effect these impermeable subgrade soils can have on the field’s drainage capacity. At a minimum, the sub-turf drainage systems must be designed such that the system is entirely and at all times above groundwater level.

### Prefabricated Storage Buildings

We understand that construction of various prefabricated storage buildings are included in the athletic facilities renovations. The storage building are currently envisioned to bear on shallow, reinforced concrete slab foundations. The thickness of the reinforced concrete slabs is unknown at the time of this letter report.

The Topsoil is unsuitable for support of these above-grade structures and the near surface Fill is a frost-susceptible material. There is some risk that reinforced concrete slab could experience small amounts of frost heaving and vertical misalignment where they are directly underlain by the Fill soils within the regional depth of frost penetration (5 ft) as determined by the Maine DOT Bridge Design Guide dated August 2003 with June 2018 updates. To limit risk of any frost-induced heaving and the associated premium costs for short-term performance of the reinforced concrete slabs, full-depth (5 ft frost depth potential) non-frost susceptible soil backfill would be required; however, this is not common construction practice in this locale and is typically determined to be cost prohibitive.

We recommend the following.

- Strip and remove the top 18-in. of topsoil and Fill at each structure location.
- Following topsoil and Fill removal, subgrade preparation should include re-grading and compaction of the existing material to a dry density of at least 95% of the maximum dry density as determined in accordance with ASTM Test Designation D1557. As a minimum, each layer of fill should receive four complete coverages with suitable compaction equipment.
- For backfill material placed to raise site grades to design subgrade elevation, we recommend lifts with a maximum 18-in. thick layer of Granular Borrow material placed on top of a woven geotextile fabric (Mirafi 600X or similar). Backfill placed to raise site grades to design elevation shall be compacted to 95% of the material’s maximum dry unit weight and each layer of fill

should receive four complete coverages with suitable compaction equipment. Backfill material for grade raises to design subgrade elevations should extend laterally a minimum of 2 ft beyond the limits of the proposed structures.

- Given the embedment of the slab below ground surface (slab thickness and Granular Borrow) is less than the regional 5 ft frost depth, we recommend placing 2-in. of rigid insulation between the top of the Granular Borrow and bottom of the reinforced concrete slab. The rigid insulation and Granular Borrow should extend a lateral distance beyond the limits of the reinforced slab. Lateral distance for placement of rigid insulation and Granular Borrow should be determined by drawing an imaginary 1H:1V line from the bottom of excavation for the slab up to ground surface.

### Sport Lighting, Bleacher System, and Press Box

As a general recommendation, foundation design and construction should be performed in accordance with applicable provisions of the Maine Uniform Building and Energy Code which is based on the 2015 International Building Code with applicable amendments.

Typically, the 4 pole lighting system includes a pre-cast concrete “base” encased in concrete and designed to bear on natural inorganic soils. The diameter and design depth of the foundation element (drilled shaft) into the Glacial Till will depend on the anticipated combined foundation loadings (vertical, lateral and moment loads) calculated by the designer of the foundations based on the criteria in the below table.

#### ***Sport Lighting Foundation Design Criteria***

	Fill	Glaciomarine Deposits	Glacial Till
Total Unit Weight (lb/ft <sup>3</sup> )	120	115	130
Buoyant Unit Weight (lb/ft <sup>3</sup> )	57.6	52.6	67.6
Effective Friction Angle (deg)	25	--	32
Undrained Cohesion, c (psf)	--	100	--
Active Earth Pressure Coefficient (K <sub>a</sub> )	0.4	1	0.3
Passive Earth Pressure Coefficient (K <sub>p</sub> )	1.6 <sup>(1)</sup>	0.7	2.1 <sup>(1)</sup>

Note:

- indicates property not used for analysis.
- Passive Earth Pressure Coefficient (K<sub>p</sub>) includes a factor of safety of 1.5.

Footings foundations for the bleacher system should be preliminarily designed based on an allowable bearing pressure of 3.0 kips per square foot (ksf) in the Glacial Till or Glaciomarine Deposit. The footing should bear at least 5 ft below the lowest ground surface exposed to freezing. Footings should be designed to provide resistance to sliding, overturning, and uplift. We recommend a minimum factor of safety of 1.5 for sliding, and 2.0 for overturning.

At the time this letter report was prepared, structural loads for the bleacher system and press box were not available. As design progresses, and structural loads are developed, our preliminary recommendation for a footing bearing pressure of 3.0 ksf should be re-evaluated.

## CONSTRUCTION CONSIDERATIONS

The primary purpose of this section of the report is to comment on items related to excavation, earthwork, and related geotechnical engineering aspects of the proposed construction.

### Subgrade Preparation

The Fill soils on-site generally contain moderate quantities of fine-grained materials and will be susceptible to weaving during rain events and may require changes in compaction techniques. As such, management of soils during subgrade preparation for the proposed athletic field and track will require surface water and erosion control.

The Fill soils are frost-susceptible and susceptible to disturbance due to freezing. If construction is performed during freezing weather, soil bearing surfaces must be protected against freezing before and after fill placement. Alternatively, insulating blankets, heated enclosures, or other means may be used for protection against freezing.

### Drilled Shafts

Drilled shafts will need to be inspected in the field for overall depth and size, bottom condition, and alignment prior to placement of concrete. It is anticipated that shafts will be drilled inside a steel casing installed to the bottom of shaft excavation within the Glacial Till to retain the ground and cutoff stormwater from entering the shaft.

Concrete should be placed in the dry using a chute or by tremie methods if water is present in the shaft. The actual details of shaft excavation and concrete placement should be proposed by contractor and be submitted to the Engineer for review in the form of shop drawings.

### Construction Dewatering

Control of surface water runoff into excavations will be necessary to retain the integrity of the subgrade soils. The contractor should control the flow of surface water into excavations at all times. Careful water control will be necessary to retain the integrity of the subgrade soils. Dewatering of excavations during construction can likely be performed using collection trenches and shallow sump wells. Every effort should be made to collect and recharge collected water on-site. If off-site discharge of collected water is required, dewatering will need to be performed with all applicable Federal, State and Local Regulations.

It should be anticipated that groundwater will be encountered at the drilled shaft locations. It is anticipated that dewatering can be performed using conventional pumps and sumps during drilling operations. It is also anticipated that dewatering effluent likely can be recharged on site into temporary drywells created and maintained for this purpose. Alternatively, drilled shafts in existing fill or natural soil may also be controlled using drilling fluid during the installation process.

If off-site discharge of collected water is required to manage surface water or groundwater encountered at drilled shaft locations, dewatering will need to be performed with all applicable Federal, State and Local Regulations.

### Handling and Disposal of Excavated Soil

In order to minimize the cost of transporting and disposing of material off-site, every effort should be made by the designers and contractor to reuse excavated material on-site, whether in landscaped areas around the site, or for material meeting specific geotechnical criteria as backfill.

The excavation work will most likely generate quantities of excavated soils, a portion of which will require special handling during off-site disposal. The management of these excavated soils must be performed in compliance with all applicable Federal, State, and Local Regulations.

### LIMITATIONS

This report was prepared in accordance with our authorized Agreement with Activitas and our proposal dated 27 October 2023. This report has been prepared for the specific application to the Belfast Area High School Track and Field Renovation.

The nature and extent of variations in the subsurface conditions between explorations may not become evident until construction, and the project design may change from our current understanding. Any additional information pertaining to the project that becomes available should be provided to Haley & Aldrich, so that our conclusions and recommendations can be reviewed and modified, as necessary.

We appreciate the opportunity to provide engineering services on this project. Please do not hesitate to call if you have any questions or comments.

### CLOSURE

We appreciate the opportunity to work with Activitas Inc. and look forward to continuing our association with you on this project.

Sincerely yours,  
**HALEY & ALDRICH, INC.**



Erin A. Force, P.E. (ME)  
Senior Geotechnical Engineer

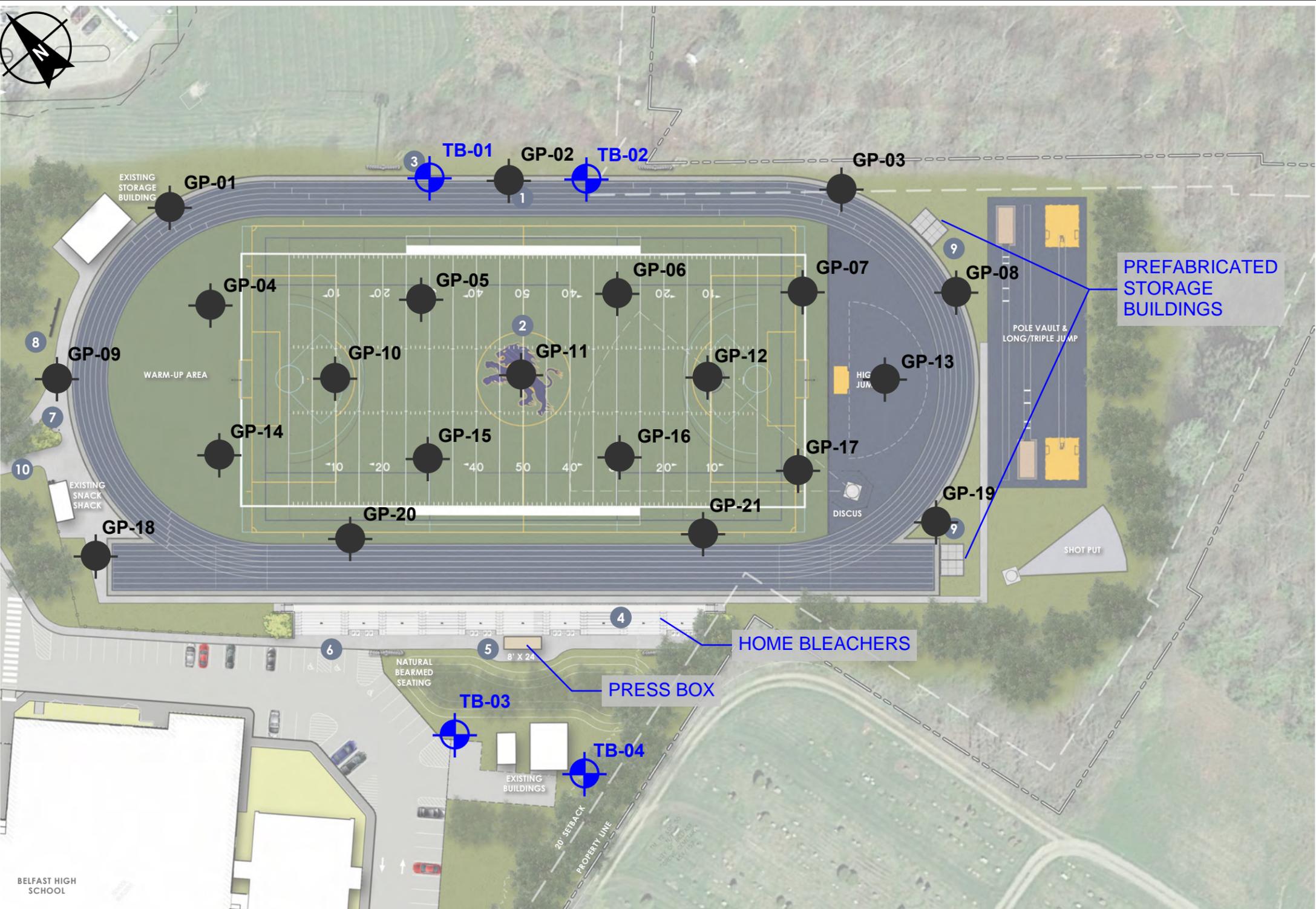


R. Scott Goldkamp, P.E. (MA/NH)  
Principal



### Attachments:

- Figure 1 – Site and Subsurface Exploration Location Plan
- Appendix A – Test Boring Logs
- Appendix B – Geoprobe Exploration Logs



**LEGEND**

- 
**TB-01**  
 DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BETWEEN 21 AND 22 MAY 2024 BY NEW HAMPSHIRE BORING, INC. AND OBSERVED BY HALEY & ALDRICH, INC.
  
- 
**GP-01**  
 DESIGNATION AND APPROXIMATE LOCATION OF GEOPROBE DRILLED BETWEEN 23 AND 24 MAY 2024 BY ENVIRONMENTAL PROJECTS, INC. AND OBSERVED BY HALEY & ALDRICH, INC.

**NOTES**

1. BASE PLAN TAKEN FROM "BELFAST HIGH SCHOOL PREFERRED OPTION" DRAWING DATED 3 OCTOBER 2023 AND PROVIDED BY ACTIVITAS, INC.

BELFAST AREA HIGH SCHOOL  
 TRACK AND FIELD RENOVATIONS  
 BELFAST, MAINE



**SITE AND SUBSURFACE  
 EXPLORATION LOCATION PLAN**



SCALE: AS SHOWN  
 JUNE 2024

**APPENDIX A**  
**Test Boring Logs**

# IDENTIFICATION AND DESCRIPTION OF SUBSURFACE MATERIALS

## SOIL

Soil description on logs of subsurface explorations are based on Standard Penetration Test results, visual-manual examination of exposed soil and soil samples, and the results of laboratory tests on selected samples. The criteria, descriptive terms and definitions are as follows:

### DENSITY OR CONSISTENCY

Density of Cohesionless Soils	Penetration Resistance (Blows per ft.)	Consistency of Cohesive Soils	Penetration Resistance (Blows per ft.)
Very Loose	0-4	Very Soft	0-2
Loose	5-10	Soft	3-4
Medium	11-30	Medium	5-8
Dense	31-50	Stiff	9-15
Very Dense	over 50	Very Stiff	16-30
		Hard	over 30

### PENETRATION RESISTANCE

Standard Penetration Test (ASTM D-1586) - Number of blows required to drive a standard 2 in. O.D. split spoon sampler 1 ft. with a 140 lb. weight falling freely through 30 in.

**COLOR:** Basic colors and combinations: black, brown, gray, yellow-brown, etc.

### SUPPLEMENTAL SOIL TERMINOLOGY:

Laminae	- 0 to 1/16 in. thick (cohesive)
Parting	- 0 to 1/16 in. thick (granular)
Seam	- 1/16 to 1/2 in. thick
Layer	- 1/2 to 12 in. thick
Stratum	- > 12 in. thick
Pocket	- Small, erratic deposit less than 12 in. size
Lens	- Lenticular deposit larger than a pocket
Occasional	- One or less per 12 in. of thickness
Frequent	- More than one per 12 in. of thickness
Interbedded	- Alternating soil layers of differing composition
Varved	- Alternating thin seams of silt and clay
Mottled	- Variation of color

### GEOLOGIC INTERPRETATION

Deposit type - GLACIAL TILL, ALLUVIUM, FILL.....

The natural soils are identified by criteria of Unified Soil Classification System (USCS), with appropriate group symbol in parenthesis for each soil description. Fill materials may not be classified by USCS criteria.

## ROCK

Rock descriptions noted on logs of subsurface explorations are based on visual-manual examination of exposed rock outcrops and core samples. The criteria, descriptive terms and definitions used are as follows:

**FIELD HARDNESS:** A measure of resistance to scratching.

Very Hard	Cannot be scratched with a knife point or sharp pick.
Hard	Can be scratched with a knife point or sharp pick, only with difficulty.
Moderately Hard	Can be readily scratched with a knife point or pick.
Medium Hard	Can be grooved or gouged 1/16 in. deep with firm pressure on a knife point or sharp pick.
Soft	Can be grooved or gouged easily with a knife point or pick.
Very Soft	Can be carved with a knife and excavated with a pick point.

### DISCONTINUITIES:

Type	Definition
Joint	A natural fracture along which no displacement has occurred. May occur in parallel groups called sets.
Shear	A natural fracture along which displacement has occurred. Surface may be slickensided or striated.
Fault	A natural fracture along which displacement has occurred. Usually lined with gouge and slickensides.
Shear or Fault Zone	Zone of fractured rock and gouge bordering the displacement plane.

### ORIENTATION/ATTITUDE:

Term	Angle (degrees)
Horizontal	0-5
Low Angle	6-35
Moderately Dipping	36-55
High Angle	56-85
Vertical	86-100

### SPACING:

Discontinuity Term	Bedding Term	Inches
Extremely Close	Extremely Thin	< 3/4
Very Close	Very Thin	3/4 - 2.5
Close	Thin	2.5 - 8
Moderate	Medium	8 - 24
Wide	Thick	24 - 80
Very Wide	Very Thick	80 - 240
Extremely Wide	Extremely Thick	> 240

### PERSISTENCE/CONTINUITY:

Term	Feet	Term	Distance
Very Low	0-3	Very Tight	< 0.1mm
Low	3-10	Tight	0.1mm-0.25mm
Medium	10-35	Partly Open	0.25mm-0.5mm
High	35-65	Open	0.5mm-2.5mm
Very High	> 65	Moderately Wide	2.5mm-1cm
		Wide	> 1cm
		Very Wide	1cm-10cm
		Extremely Wide	10cm-1m
		Cavernous	> 1m

### POROSITY:

**Type**  
 Primary:  
 Pre-depositional and depositional inter- and intra- granular, particle, or crystalline pores.  
 Secondary:  
 Solution features including pits, vugs, caverns, molds, and channels.  
 Fracture features including joints, shears, faults, shrinkage and breccia fabrics.

Term	Size
Micro	< 0.0625 mm
Meso	0.0625-4.0 mm
Mega	4.0-256 mm



SUBSURFACE EXPLORATION KEY

U.S. Standard Series Sieve				Clear Square Sieve Openings			
12"	3"	3/4"	4	10	40	200	
Boulders	Cobbles	Gravel		Sand			Silts and Clays
		Coarse	Fine	Coarse	Medium	Fine	
305 mm	76 mm	19 mm	4.75 mm	2.00 mm	0.43 mm	0.074 mm	

## UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		Group Symbol	Graphic Symbol	TYPICAL NAMES	
Coarse grained soils: more than half is larger than number 200 sieve	Gravels More than half of coarse fraction is larger than number 4 sieve	GW		Well graded gravels, gravel-sand mixtures	
		GP		Poorly graded gravels, gravel-sand mixtures	
		GM		Silty gravels, poorly graded gravel-sand-silt mixtures	
		GC		Clayey gravels, poorly graded gravel-sand-clay mixtures	
	Sands More than half of coarse fraction is smaller than number 4 sieve	Sands with little or no fines	SW		Well graded sands, gravelly sands
			SP		Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM		Silty sands, poorly graded sand-silt mixtures
			SC		Clayey sands, poorly graded sand-clay mixtures
Fined-grained soils: more than half smaller than number 200 sieve	Silts and Clays Liquid limit 50% or less	ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
		OL		Organic clays and organic silty clays of low plasticity	
	Silts and Clays Liquid limit greater than 50%	MH		Inorganic silty, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		CH		Inorganic clays of high plasticity, fat clays	
		OH		Organic clays of medium to high plasticity, organic silts	
Highly organic soils		PT		Peat and other highly organic soils	

### GENERAL NOTES

- Logs of subsurface explorations depict soil, rock and groundwater conditions only at the locations specified on the dates indicated. Subsurface conditions may vary at other locations and at other times.
- Water levels noted on the logs were measured at the times and under the conditions indicated. During test borings, these water levels could have been affected by the introduction of water into the borehole, extraction of tools on other procedures and thus may not reflect actual groundwater level at the test boring location. Groundwater level fluctuations may also occur as a result of variations in precipitation, temperature, season, tides, adjacent construction activities and pumping of water supply wells and construction dewatering systems.

**WEATHERING:** The action of organic and inorganic and chemical and physical processes resulting in alteration of color, texture and composition.

Fresh-FR	No visible sign of alteration, except perhaps slight discoloration on major discontinuity surfaces.
Slight-SL	Discoloration of rock material and discontinuity surfaces. All rock may be discolored and/or somewhat weaker than in its fresh condition.
Moderate-MOD	Less than half the rock material is decomposed and/or disintegrated to a soil. Some fresh or discolored rock is present as either a continuous framework or as corestones.
High-HIGH	More than half the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present as either a discontinuous framework or as corestones.
Complete-COMP	All rock material is decomposed and/or disintegrated to soil. The original mass structure is largely intact.
Residual Soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There has been a large change of volume, but the material has not been significantly transported.

**COLOR:** Basic colors and combinations: gray, light gray, brown, red-brown.

**TEXTURE:** Size, shape and arrangements of constituents.

Term	Size	
	Igneous	Sedimentary
Coarse-grained	> 5 mm	> 2 mm
Medium-grained	1 - 5 mm	0.625 - 2 mm
Fine-grained	< 1 mm	< 0.625 mm
Aphanitic	Individual grains invisible to the unaided eye.	

**LITHOLOGY:** Rock classification and modifiers; accepted formation names.





# TEST BORING REPORT

**Boring No.** TB-01

File No. 0209731-000  
 Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	USCS Symbol	Stratum Change Elev/Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION <small>(Density/consistency, color, GROUP NAME, max. particle size<sup>†</sup>, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)</small>	Gravel		Sand			Field Test			
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity
20	5 8 7 9	S8 12	20.0 22.0	ML		Stiff medium gray sandy SILT (ML), mps= 1 in., no structure, no odor, moist, bonded  Note: Cobble layer from 24.3 ft to 24.8 ft.  -GLACIAL TILL-	5	5	5	15	70				
25	5 14 11 9	S9 10	25.0 27.0	Sn		Medium dense medium gray silty SAND (SM), mps= 1 in., no structure, no odor, moist, bonded	5	5	5	5	30	50			
30	9 8 13 16	S10 4	30.0 32.0		103.0 32.0	Similar to above, except dense	5	5	5	5	30	50			
						BOTTOM OF EXPLORATION 32.0 FT Note: Exploration backfilled upon completion.									

**NOTE:** Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

**Boring No.** TB-01

<b>TEST BORING REPORT</b>										<b>Boring No. TB-02</b>						
<b>Project</b> BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME <b>Client</b> ACTIVITAS, INC. <b>Contractor</b> NEW ENGLAND BORING CONTRACTORS							<b>File No.</b> 0209731-000 <b>Sheet No.</b> 1 of 2 <b>Start</b> 21 May 2024 <b>Finish</b> 21 May 2024 <b>Driller</b> T. Schaeffer <b>H&amp;A Rep.</b> H. Hollauer									
		<b>Casing</b>	<b>Sampler</b>	<b>Barrel</b>	<b>Drilling Equipment and Procedures</b>											
<b>Type</b>		HW	S	--	Rig Make & Model: Mobile Drill B-53 Bit Type: Roller Bit Drill Mud: None Casing: HW Driven to 25 ft Hoist/Hammer: Automatic Hammer PID Make & Model: Not used					<b>Elevation</b> 135.0 (est.) <b>Datum</b> NAVD88						
<b>Inside Diameter (in.)</b>		4	1 3/8	--						<b>Location</b> See Plan						
<b>Hammer Weight (lb)</b>		140	140	-												
<b>Hammer Fall (in.)</b>		30	30	-												
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	USCS Symbol	Stratum Change Elev/Depth (ft)	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Density/consistency, color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	1 2 2 5	S1 5	0.0 2.0	SM		Loose medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry	5	5	10	15	45	20				
	28 10 7 8	S2 8	2.0 4.0	SM		Similar to S1, except trace cobble  -FILL-										
	2 2 2 2	S3 2	4.0 6.0	ML	131.0 4.0	Soft medium brown sandy SILT (ML), mps= 1 in., no structure, no odor, slightly moist, low recovery possibly due to pushing a cobble	5	5	5	5	10	70				
	WOH/ 24"	S4 3	6.0 8.0	ML		Similar to S3			5	5	15	75				
	1 1 WOH/ 24"	S5 0	8.0 10.0	ML	127.0 8.0	Very soft medium gray sandy SILT (ML), description based on residue in spoon  -FILL-  Note: No recovery from 10 to 12 ft. Split spoon pushed to 12.5 to get recovery.					25	75				
	WOH/ 24"	S6 2	10.0 12.0	ML		Very soft medium to dark gray SILT(ML), mps= 0.425mm, slight structure, no odor, very moist, description based on 0.5 ft recovery					10	90				
	4 2 2 3	S7 8	13.0 15.0	ML	122.0 13.0	Soft gray-brown clayey SILT (ML), mps= 1mm, depositional structure, no odor, wet, organic fibers, bonded  -GLACIOMARINE DEPOSITS-				5	5	90				
					116.0 19.0	Note: Boulder from 19.0 to 20.5 ft. Roller bit advanced through it; black and white granite per cuttings.										
<b>Water Level Data</b>						<b>Sample ID</b>		<b>Well Diagram</b>				<b>Summary</b>				
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod T - Thin Wall Tube U - Undisturbed Sample S - Split Spoon Sample		Overburden (ft)		32.0		Rock Cored (ft)		0.0		
			Bottom of Casing	Bottom of Hole	Water			Samples		S9		<b>Boring No. TB-02</b>				
5/21/24	1430	0	10	15	13											
<b>Field Tests:</b>						<b>Dilatancy:</b> R - Rapid S - Slow N - None <b>Toughness:</b> L - Low M - Medium H - High <b>Plasticity:</b> N - Nonplastic L - Low M - Medium H - High <b>Dry Strength:</b> N - None L - Low M - Medium H - High V - Very High										
<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size. Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.																



# TEST BORING REPORT

**Boring No. TB-02**

File No. 0209731-000  
 Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	USCS Symbol	Stratum Change Elev/Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION <small>(Density/consistency, color, GROUP NAME, max. particle size<sup>†</sup>, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)</small>	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
20	7 6 7 12	S8 14	20.5 22.5	SM	114.5 20.5	Medium dense medium gray silty SAND (SM), mps= 1 in., no structure, no odor, wet, bonded  -GLACIAL TILL-	5	5	5	10	50	25				
25	18 32 42 42	S9 14	25.0 27.0	SM	110.4 24.6 110.0 25.0	Cobble layer per drilling action Very dense medium gray silty SAND (SM), mps= 1 in., no structure, no odor, wet, bonded	5	5	5	10	50	25				
					108.0 27.0	BOTTOM OF EXPLORATION 27.0 FT Note: Exploration backfilled upon completion.										

**NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.**

**Boring No. TB-02**

<b>TEST BORING REPORT</b>										<b>Boring No. TB-03</b>						
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor NEW ENGLAND BORING CONTRACTORS							File No. 0209731-000 Sheet No. 1 of 2 Start 22 May 2024 Finish 22 May 2024 Driller T. Schaeffer H&A Rep. H. Hollauer									
		Casing	Sampler	Barrel	Drilling Equipment and Procedures											
Type	HW	S	--	Rig Make & Model: Mobile Drill B-53					Elevation 145.0 (est.)							
Inside Diameter (in.)	4	1 3/8	--	Bit Type: Roller Bit					Datum NAVD88							
Hammer Weight (lb)	140	140	-	Drill Mud: None					Location See Plan							
Hammer Fall (in.)	30	30	-	Casing: HW Driven to 20 ft												
				Hoist/Hammer: Automatic Hammer												
				PID Make & Model: Not used												
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	USCS Symbol	Stratum Change Elev/Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION <small>(Density/consistency, color, GROUP NAME, max. particle size<sup>†</sup>, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)</small>	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	3 4 6 7	S1 18	0.0 2.0	SM	143.0 2.0	Medium dense medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry  -FILL-	5	5	10	15	45	20				
	3 4 4 4	S2 20	2.0 4.0	CL		Medium stiff brown-gray CLAY (CL), mps= 0.075mm, depositional structure, no odor, moist, mottled, bonded							100			
5	7 7 9 7	S3 24	5.0 7.0	ML		Very stiff brown-gray SILT (ML) grading to SILT with sand, mps= 0.5 in., no structure, no odor, moist, bonded, coarse sand layer at approximately 5.5 to 5.6 ft  -GLACIOMARINE DEPOSITS-		5	5	10	10	70	100			
10	15 18 23 29	S4 3	10.0 12.0	CL		Hard gray-brown sandy CLAY (CL), mps= 1.5 in., no structure, no odor, bonded, wet, cobble in spoon tip	5	5	5	5	10	70				
15	22 30 36 43	S5 20	15.0 17.0	ML	130.0 15.0	Hard medium gray sandy SILT (ML), mps= 0.5 in., no structure, no odor, bonded, moist  -GLACIAL TILL-	5	5	5	10	75					
20																

Water Level Data						Sample ID		Well Diagram		Summary	
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod T - Thin Wall Tube U - Undisturbed Sample S - Split Spoon Sample	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal			Overburden (ft) 27.4 Rock Cored (ft) 0.0 Samples S7	
			Bottom of Casing	Bottom of Hole	Water						
5/22/24	1100	0	20	25	~8						

<b>Field Tests:</b>		Dilatancy: R - Rapid S - Slow N - None Toughness: L - Low M - Medium H - High				Plasticity: N - Nonplastic L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High					
<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.											
Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.											



# TEST BORING REPORT

**Boring No. TB-03**

File No. 0209731-000  
 Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	USCS Symbol	Stratum Change Elev/Depth (ft)	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Density/consistency, color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
20	6 7 10 9	S6 16	20.0 22.0	ML		Medium dense brown-gray sandy SILT and weathered phyllite (ML), mps= 1 in., no structure, no odor, bonded, moist		5	5	5	10	75				
25	50/1"	S7 1	25.0 25.1		120.0 25.0	TOP OF PROBABLE BEDROCK 25.0 FT  Note: Possible top of rock. Rollerbit advance to 27.4 ft; rock appeared to become denser with depth based on drill action.  -PROBABLE BEDROCK-										
					117.6 27.4	BOTTOM OF EXPLORATION 27.4 FT  Note: Exploration backfilled upon completion.										

**NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.**

**Boring No. TB-03**

<b>TEST BORING REPORT</b>										<b>Boring No. TB-04</b>													
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor NEW ENGLAND BORING CONTRACTORS							File No. 0209731-000 Sheet No. 1 of 2 Start 22 May 2024 Finish 22 May 2024 Driller T. Schaeffer H&A Rep. H. Hollauer																
		Casing	Sampler	Barrel	Drilling Equipment and Procedures					Rig Make & Model: Mobile Drill B-53 Bit Type: Roller Bit Drill Mud: None Casing: HW Driven to 15 ft Hoist/Hammer: Automatic Hammer PID Make & Model: Not used													
Type	HW	S	--						Elevation 147.0 (est.)														
Inside Diameter (in.)	4	1 3/8	--						Datum NAVD88														
Hammer Weight (lb)	140	140	-						Location See Plan														
Hammer Fall (in.)	30	30	-																				
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	USCS Symbol	Stratum Change Elev/Depth (ft)	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Density/consistency, color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)										Gravel		Sand			Field Test		
						% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength								
0					146.7	-TOPSOIL-																	
3	WOH	S1	0.0	SP	0.3	Medium dense brown poorly-graded SAND (SP), mps= 1 in., no structure, no odor, dry	5	5	15	30	40	5											
4			2.0		145.5		-FILL-																
5		S2	2.0	ML	1.5	Medium stiff brown-gray SILT with sand (ML), mps= 2mm, no structure, no odor, slightly moist, bonded				10	20	70											
8			4.0																				
10		S3	5.0	ML		Medium stiff brown-gray SILT with sand (ML), mps= 1 in., no structure, no odor, slightly moist, bonded  Note: Auger refusal at 6.2 ft. Boring moved 1 ft south; boulders and cobbles from approximately 6 to 8 ft.	5	5	5	5	20	60											
15			6.2																				
18		S4	10.0	ML		Hard gray-brown SILT with sand (ML), mps= 1.5 in., no structure, no odor, bonded, moist  Note: Cobbles from 11.3 to 11.6 ft.	5	5	5	5	20	60											
22			11.3																				
25		S5	15.0			Similar to S4	5	5	5	5	20	60											
30			17.0																				
					128.2	PROBABLE TOP OF BEDROCK 18.8 FT																	
					18.8	Note: Top of possible rock, roller bit advanced to 21 ft.																	
						-PROBABLE BEDROCK-																	
					126.0	BOTTOM OF EXPLORATION 21.0 FT																	
					21.0	Note: Exploration backfilled upon completion.																	

Water Level Data					Sample ID		Well Diagram		Summary		
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Split Spoon Sample	Overburden (ft)	Rock Cored (ft)
			Bottom of Casing	Bottom of Hole	Water						
										21.0	0.0

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup>Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

**APPENDIX B**  
**Geoprobe Exploration Logs**

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-01</b>										
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer										
		Casing	Sampler	Barrel	Drilling Equipment and Procedures															
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)											
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88											
Hammer Weight (lb)	-	AUTO	-	Casing: -					Location See Plan											
Hammer Fall (in.)	-	-	-	Hoist/Hammer: - Automatic Hammer																
				PID Make & Model: -																
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test			
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity
0			0.0	135.7		-TOPSOIL-														
	PUSH	G1 36	5.0	0.3	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 0.5 in., no structure, no odor, dry, trace asphalt aggregate		5	20	35	30	10								
						-FILL-														
						-FILL-														
5			5.0	132.2		-FILL-														
	PUSH	G2 18	10.0	3.8	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 4.75mm, no structure, no odor, dry to slightly moist, slightly bonded			5	5	80	10								
						-FILL-														
10			10.0	127.0		-FILL-														
	PUSH	G3 24	15.0	9.0	ML	Relatively softer than above medium brown SILT with sand (ML), mottled, no odor, wet				5	15	80								
						-FILL-														
						-FILL-														
15				122.5		-FILL-														
				13.5	SM	Medium gray-brown silty SAND (SM), mps= 1 in., no structure no odor, moist, bonded		5	5	5	5	35	45							
						-GLACIAL TILL-														
				121.0		-GLACIAL TILL-														
				15.0		-GLACIAL TILL-														
						BOTTOM OF EXPLORATION 15.0 FT  Note: All borings backfilled with cuttings and/or sand.														

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												15.0	0.0	G3
											<b>Boring No. GP-01</b>			

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-02</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward											
		Casing	Sampler	Barrel	Drilling Equipment and Procedures					H&A Rep. H. Hollauer											
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan												
Hammer Fall (in.)	-	-	-	Casing: -																	
				Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test									
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand				Field Test			
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	PUSH	G1 16	0.0 5.0	135.7 0.3	SP-SM	-TOPSOIL-  Medium brown poorly-graded SAND with silt (SP-SM), mps= 4.75mm, no structure, no odor, wet, slightly bonded  -FILL-															
5	PUSH	G2 12	5.0 10.0																		
10	PUSH	G3 18	10.0 15.0	126.5 9.5	ML	Gray and brown changing to dark brown SILT (ML), mps= 0.425mm, depositional structure, no odor, wet, slightly bonded, trace roots  -GLACIOMARINE DEPOSITS-										10	90				
15				121.2 14.8 121.0 15.0	SM	Red gray-brown silty SAND (SM), mps= 1 in., no structure, no odor, dry -GLACIAL TILL-  BOTTOM OF EXPLORATION 15.0 FT  Note: All borings backfilled with cuttings and/or sand.						5	5	5	5	35	45				

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												15.0	0.0	G3

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-03</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					H&A Rep. H. Hollauer												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Elevation 136.0 (est.)												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Datum NAVD88												
Hammer Fall (in.)	-	-	-	Casing: -					Location See Plan												
				Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Gravel		Sand			Field Test				
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	PUSH	G1 26	0.0 5.0	135.8 0.2	SP-SM	-TOPSOIL- Medium brown poorly-graded SAND with silt (SP-SM), mps= 4.75mm, no structure, no odor, dry -FILL-								10	20	50	20				
5	PUSH	G2 20	5.0 10.0	131.8 4.2	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 4.75mm, no structure, no odor, moist, mottled, slightly bonded -FILL-								5	5	80	10				
10	PUSH	G3 6	10.0 15.0	126.1 9.9	SM	Medium gray silty SAND (SM), mps= 1 in., no structure, no odor, wet, pushed a cobble for low recovery -GLACIAL TILL-  Note: Wet at 11 ft.						5	5	15	10	35	30				
15				121.0 15.0		BOTTOM OF EXPLORATION 15.0 FT  Note: All borings backfilled with cuttings and/or sand.															

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												15.0	0.0	G3
											<b>Boring No. GP-03</b>			

<b>Field Tests:</b>	<b>Dilatancy:</b> R - Rapid S - Slow N - None	<b>Plasticity:</b> N - Nonplastic L - Low M - Medium H - High
	<b>Toughness:</b> L - Low M - Medium H - High	<b>Dry Strength:</b> N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-04</b>										
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer													
		Casing	Sampler	Barrel	Drilling Equipment and Procedures															
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)											
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88											
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan											
Hammer Fall (in.)	-	-	-	Casing: -																
				Hoist/Hammer: - Automatic Hammer																
				PID Make & Model: -																
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test			
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity
0			0.0	135.7		-TOPSOIL-														
	PUSH	G1 28	5.0	0.3	SM	Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry	5	5	15	20	40	15								
						-FILL-														
					SM	Medium brown silty SAND (SM), mps= 2mm, no structure, no odor, dry to moist, slightly mottled, slightly bonded				5	80	15								
5	PUSH	G2 45	5.0	131.0	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 1 in., no structure, no odor, dry to slightly moist, bonded, color grades to gray-brown at approximately 7 ft	5	5	10	10	50	20								
			10.0	5.0		Possible odor at 8 and 8.5 ft with darker color change														
						Note: Sample collected from 4 to 10 ft														
						-FILL-														
10	PUSH	G3 49	10.0	122.0	SP-SM	Medium gray poorly-graded SAND with silt (SP-SM), mps= 2mm, no structure, no odor, wet				5	85	10								
			15.0	14.0		-GLACIAL TILL-														
				121.0		BOTTOM OF EXPLORATION 15.0 FT														
				15.0		Note: All borings backfilled with cuttings and/or sand.														

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-05</b>													
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer																
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																		
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)														
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88														
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan														
Hammer Fall (in.)	-	-	-	Hoist/Hammer: - Automatic Hammer																			
				PID Make & Model: -																			
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test						
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
0			0.0	135.5		-TOPSOIL-																	
	PUSH	G1 32	5.0	0.5	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 0.75 in., no structure, no odor, dry						5	10	10	60	15							
						-FILL-																	
					SM	Medium brown silty SAND (SM), mps= 0.75 in., no structure, no odor, moist						5	5	5	70	15							
						-FILL-																	
5	PUSH	G2 40	5.0	10.0	ML	Medium gray sandy SILT (ML), mps= 4.75mm, no structure, no odor, moist								5	10	85							
					PT	Wood and black decomposed wood with 2-in. PEAT layer at approximately 8 to 8.2 ft								5	5	20	70						
						-GLACIOMARINE DEPOSITS-																	
					SM	Dark gray silty SAND (SM), mps= 2mm, no structure, decomposing marsh odor, wet								5	65	30							
10				10.0		BOTTOM OF EXPLORATION 10.0 FT																	
Note: All borings backfilled with cuttings and/or sand.																							

Water Level Data					Sample ID		Well Diagram			Summary			
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)
			Bottom of Casing	Bottom of Hole	Water							Samples	
												10.0	0.0
												G2	
											<b>Boring No. GP-05</b>		

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-06</b>												
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer															
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																	
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)													
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88													
Hammer Weight (lb)	-	AUTO	-	Casing: -					Location See Plan													
Hammer Fall (in.)	-	-	-	Hoist/Hammer: - Automatic Hammer																		
				PID Make & Model: -																		
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test										
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Dilatancy		Toughness		Plasticity	
-TOPSOIL-																						
0	PUSH	G1 43	0.0	135.5 0.5	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 0.5 in., no structure, no odor, dry						5	5	5	75	10						
			5.0			Medium brown silty SAND (SM), mps= 0.75 in., no structure, no odor, slightly moist, slightly bonded						5	5	5	70	15						
-FILL-																						
5	PUSH	G2 16	5.0	131.0 5.0	ML	Dark brown grading to medium gray sandy SILT (ML), mps= 2mm, no structure, no odor, moist, trace cobble fragments						5	5	5	5	20	60					
			10.0			-GLACIAL TILL-																
BOTTOM OF EXPLORATION 7.0 FT																						
Note: Refusal with 2 attempts at 7.0 ft. Note: All borings backfilled with cuttings and/or sand.																						
Water Level Data			Sample ID			Well Diagram			Summary													
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (ft)		7.0		<b>Boring No. GP-06</b>						
			Bottom of Casing	Bottom of Hole	Water							Rock Cored (ft)		0.0								
												Samples		G2								

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-07</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					H&A Rep. H. Hollauer												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Elevation 136.0 (est.)												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Datum NAVD88												
Hammer Fall (in.)	-	-	-	Casing: -					Location See Plan												
				Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test									
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand				Field Test			
						% Coarse		% Sand				Dilatancy		Toughness		Plasticity		Strength			
						% Fine		% Coarse		% Medium		% Fine		% Fines							
0						-TOPSOIL-															
	PUSH	G1 28	0.0 5.0	135.5 0.5	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 0.5 in., no structure, no odor, slightly moist, slightly bonded						5		5		5		75		10	
						-FILL-															
				133.0 3.0	SM	Medium gray-brown silty SAND (SM), mps= 4.75mm, no structure, no odor, slightly moist, slightly bonded								5		75		20			
						-FILL-															
5	PUSH	G2 42	5.0 10.0																		
				126.3 9.7 126.0 10.0	ML	Medium brown SILT (ML), mps= 0.425mm, no structure, no odor, moist, trace roots										15		85			
						-GLACIOMARINE DEPOSITS-															
						BOTTOM OF EXPLORATION 10.0 FT															
Note: All borings backfilled with cuttings and/or sand.																					

Water Level Data					Sample ID		Well Diagram		Summary								
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)		Rock Cored (ft)		Samples	
			Bottom of Casing	Bottom of Hole	Water							10.0		0.0		G2	
												<b>Boring No. GP-07</b>					

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-08</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan												
Hammer Fall (in.)	-	-	-	Casing: -																	
				Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test									
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand				Field Test			
						% Coarse		% Coarse				Dilatancy		Toughness		Plasticity		Strength			
						% Fine		% Medium		% Fines											
0	P U S H	G1 26	0.0	135.8	SP- SM	-TOPSOIL-															
			5.0	0.2		Medium-brown poorly-graded SAND with silt (SP-SM), mps= 0.5 in., no structure, no odor, dry						5		5		75		10			
					SM	Medium gray-brown silty SAND (SM), mps= 4.75mm, no structure, no odor, slightly moist, slightly bonded						5		75		20					
					-FILL-																
5	P U S H	G2 45	5.0	131.2	ML	Medium gray sandy SILT (ML), mps= 1 in., no structure, no odor, slightly moist, bonded, very moist at 9.5 ft						5		5		25		55			
			10.0	4.8		-GLACIAL TILL-															
10					BOTTOM OF EXPLORATION 10.0 FT																
												Note: All borings backfilled with cuttings and/or sand.									

Water Level Data				Sample ID		Well Diagram		Summary					
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft) 10.0	
			Bottom of Casing	Bottom of Hole	Water							Rock Cored (ft) 0.0	
												Samples G2	
											<b>Boring No. GP-08</b>		

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-09</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan												
Hammer Fall (in.)	-	-	-	Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test									
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand				Field Test			
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0				135.8	SM	-TOPSOIL-															
	PUSH	G1 32	0.0 5.0	0.2	SM	Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry						5	5	30	25	15	20				
5	PUSH	G2 44	5.0 10.0		SM	Medium brown changing to medium gray-brown changing to gray silty SAND (SM), mps= 1 in., no structure, no odor, bonded						5	5	10	25	40	15				
						-FILL-															
10				127.0 9.0	SM	Medium gray-brown silty SAND (SM), mps= 1 in., no structure, no odor, mottled, bonded, trace roots at 9.8						5	5	5	5	65	15				
				126.0 10.0		-GLACIAL TILL-															
						BOTTOM OF EXPLORATION 10.0 FT															
Note: All borings backfilled with cuttings and/or sand.																					

Water Level Data					Sample ID		Well Diagram		Summary				
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft) 10.0	
			Bottom of Casing	Bottom of Hole	Water							Rock Cored (ft) 0.0	
												Samples G2	
											<b>Boring No. GP-09</b>		

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-10</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan												
Hammer Fall (in.)	-	-	-	Casing: -																	
				Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test									
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0			0.0	135.7		-TOPSOIL-															
	PUSH	G1 42	5.0	0.3	SM	Medium brown poorly-graded silty SAND (SM), mps= 1 in., no structure, no odor, dry						5	5	30	25	15	20				
					SM							Medium brown silty SAND (SM), mps= 4.75mm, no structure, no odor, slightly moist, bonded								5	5
						-FILL-															
					ML	Medium gray-brown SILT with sand (ML), mps= 1mm, no structure, no odor, slightly moist, slightly mottled									5	15	80				
5	PUSH	G2 32	5.0 10.0																		
				127.5	8.5	CL	Medium gray and brown lean CLAY (CL), mps= 0.425mm, no structure, no odor, slightly moist, mottled, bonded, trace fine sand seams														5
				126.0	10.0								-GLACIOMARINE DEPOSITS-								
10						BOTTOM OF EXPLORATION 10.0 FT															
										Note: All borings backfilled with cuttings and/or sand.											

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												10.0	0.0	G2

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-11</b>															
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer																		
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																				
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					H&A Rep. H. Hollauer																
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Elevation 136.0 (est.)																
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Datum NAVD88																
Hammer Fall (in.)	-	-	-	Casing: -					Location See Plan																
				Hoist/Hammer: - Automatic Hammer																					
				PID Make & Model: -																					
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test													
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand				Field Test							
						% Coarse		% Fine		% Coarse		% Medium		% Fine		% Fines		Dilatancy		Toughness		Plasticity		Strength	
0				135.7		-TOPSOIL-																			
	PUSH	G1 36	0.0 5.0	0.3	SP-SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 4.75mm, no structure, no odor, dry																			
				132.8		-FILL-																			
				3.2	SM	Medium brown changing to gray-brown silty SAND (SM), mps= 1 in., no structure, no odor, slightly moist, slightly bonded	5 5		10 30		35 15														
5	PUSH	G2 27	5.0 10.0			-FILL-																			
				126.3		-GLACIOMARINE DEPOSITS-																			
				9.7	ML	Medium gray to dark gray SILT (ML), mps= 2mm, no structure, no odor, slightly moist, bonded, trace roots							5 5		90										
10				126.0		-GLACIOMARINE DEPOSITS-																			
				10.0		BOTTOM OF EXPLORATION 10.0 FT																			
						Note: All borings backfilled with cuttings and/or sand.																			

Water Level Data					Sample ID		Well Diagram		Summary	
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube		Overburden (ft) 10.0 Rock Cored (ft) 0.0 Samples G2	<b>Boring No. GP-11</b>
			Bottom of Casing	Bottom of Hole	Water					

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-12</b>														
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer																	
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																			
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)															
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88															
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan															
Hammer Fall (in.)	-	-	-	Casing: -																				
				Hoist/Hammer: - Automatic Hammer																				
				PID Make & Model: -																				
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel				Sand				Field Test				
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
0	P U S H	G1 30	0.0	135.2 0.8		-TOPSOIL-																		
5.0			SP-SM			Medium brown poorly-graded SAND with silt (SP-SM), mps= 4.75mm, no structure, no odor, dry								5	5	80	10							
						-FILL-																		
						-FILL-																		
5	P U S H	G2 40	5.0	132.2 3.8		SM	Medium gray-brown and brown silty SAND (SM), mps= 1 in., no structure, no odor, slightly moist, slightly bonded						5	5	10	30	35	15						
10.0						-FILL-																		
						-FILL-																		
10						CL	Medium gray and brown lean CLAY (CL), mps= 0.425mm, no structure, no odor, slightly moist, mottled										5	95						
						-GLACIOMARINE DEPOSITS-																		
						BOTTOM OF EXPLORATION 10.0 FT																		
						Note: All borings backfilled with cuttings and/or sand.																		

Water Level Data					Sample ID		Well Diagram		Summary	
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube		Overburden (ft) 10.0 Rock Cored (ft) 0.0 Samples G2	<b>Boring No. GP-12</b>
			Bottom of Casing	Bottom of Hole	Water					

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-13</b>										
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 23 May 2024 Finish 23 May 2024 Driller Josh Ward H&A Rep. H. Hollauer										
		Casing	Sampler	Barrel	Drilling Equipment and Procedures					Rig Make & Model: Track Mounted Geoprobe										
Type		-	G	--	Bit Type: - Drill Mud: - Casing: - Hoist/Hammer: - Automatic Hammer PID Make & Model: -					Elevation 136.0 (est.) Datum NAVD88										
Inside Diameter (in.)		-	1.5	--						Location See Plan										
Hammer Weight (lb)		-	AUTO	-																
Hammer Fall (in.)		-	-	-																
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test			
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity
0	P U S H	G1 42	0.0	135.7	SP- SM	-TOPSOIL-	5	5	15	20	45	10								
5.0			0.3	Medium brown poorly-graded SAND with silt (SP-Sm), mps= 1 in.																
						-FILL-														
				132.8	SM	Medium brown silty SAND (SM), mps= 2mm, no structure, no odor, slightly moist at 5 ft			5	65	30									
5	P U S H	G2 28	5.0	127.9		SP	Medium brown poorly-graded SAND (SP), mps= 4.75mm, no structure, no odor, wet			5	5	85	5							
10.0			8.1	-GLACIAL TILL-																
10				126.0		BOTTOM OF EXPLORATION 10.0 FT														
				10.0		Note: All borings backfilled with cuttings and/or sand.														

Water Level Data					Sample ID		Well Diagram		Summary			
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe	Overburden (ft) 10.0	Rock Cored (ft) 0.0
			Bottom of Casing	Bottom of Hole	Water							
											<b>Boring No. GP-13</b>	

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.



<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-15</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 24 May 2024 Finish 24 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan												
Hammer Fall (in.)	-	-	-	Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test									
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand				Field Test			
						% Coarse		% Fine		% Coarse		% Medium		% Fine		% Fines		Dilatancy	Toughness	Plasticity	Strength
0			0.0	135.7		-TOPSOIL-															
	PUSH	G1 36	5.0	0.3	SM	Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry						5	5	10	15	45	20				
					SM	-FILL-															
					SM	Medium brown and gray-brown silty SAND (SM), mps= 0.5 in., no structure, slightly bonded, slightly moist						5	10	15	45	25					
					ML	Medium brown and gray sandy SILT (ML), mps= 1 in., no structure, slight color banding, no odor, slightly moist at 7.5 ft, bonded						5	5	5	10	10	65				
5	PUSH	G2 39	5.0 10.0	4.5																	
					ML	Dark gray with brown sandy SILT (ML), mps= 0.5 in., no structure, no odor, moist, bonded						5	10	15	10	60					
10				10.0		-GLACIAL TILL-															
						BOTTOM OF EXPLORATION 10.0 FT															
						Note: All borings backfilled with cuttings and/or sand.															

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												10.0	0.0	G2

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-16</b>												
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 24 May 2024 Finish 24 May 2024 Driller Josh Ward H&A Rep. H. Hollauer												
		Casing	Sampler	Barrel	Drilling Equipment and Procedures					Rig Make & Model: Track Mounted Geoprobe Bit Type: - Drill Mud: - Casing: - Hoist/Hammer: - Automatic Hammer PID Make & Model: -												
Type	-		G	--						Elevation 136.0 (est.)												
Inside Diameter (in.)	-		1.5	--						Datum NAVD88												
Hammer Weight (lb)	-		AUTO	-						Location See Plan												
Hammer Fall (in.)	-		-	-																		
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test					
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength	
0						-TOPSOIL-																
	PUSH	G1 42	0.0 5.0	135.5 0.5	SM	Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry to slightly moist  -FILL-						5	5	10	10	40	30					
				132.0 4.0	CL	Gray and brown silty CLAY (CL), mps= 0.425mm, banded color, no structure, no odor, bonded, slightly moist  -FILL-										5	95					
5	PUSH	G2 52	5.0 10.0		SM	Medium gray silty SAND (SM), mps= 2mm, no structure, no odor, wet, bonded										5	55	40				
				127.5 8.5	SM	Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, moist  -GLACIOMARINE DEPOSITS-						5	10	10	15	35	25					
10				126.0 10.0		BOTTOM OF EXPLORATION 10.0 FT  Note: All borings backfilled with cuttings and/or sand.																

Water Level Data					Sample ID		Well Diagram		Summary	
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube		Overburden (ft) 10.0 Rock Cored (ft) 0.0 Samples G2	<b>Boring No. GP-16</b>
			Bottom of Casing	Bottom of Hole	Water					

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-17</b>														
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 24 May 2024 Finish 24 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures					Rig Make & Model: Track Mounted Geoprobe														
Type			G	--	Bit Type: - Drill Mud: - Casing: - Hoist/Hammer: - Automatic Hammer PID Make & Model: -					Elevation 136.0 (est.) Datum NAVD88														
Inside Diameter (in.)			1.5	--						Location See Plan														
Hammer Weight (lb)			AUTO	-																				
Hammer Fall (in.)			-	-																				
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test							
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
0	P U S H	G1 41	0.0	135.5		-TOPSOIL-																		
5.0			0.5	SM	Medium brown silty SAND (SM), mps= 0.5 in., no structure, no odor, dry to moist, slightly bonded							5	5	10	50	30								
								-FILL-																
				132.8		ML	Medium brown and gray sandy SILT (ML), mps= 2mm, no structure, no odor, slight color banding, slightly moist									5	25	70						
				131.5		ML	Medium brown SILT (ML), no structure, no odor, wet, slight color banding												5	95				
5	P U S H	G2 48	5.0	130.8		-GLACIOMARINE DEPOSITS-																		
10.0			5.2	SM	Medium brown grading to medium gray silty SAND (SM), mps= 1 in., no structure, no odor, moist, bonded						5	5	5	5	65	15								
						-GLACIAL TILL-																		
10				126.0		BOTTOM OF EXPLORATION 10.0 FT																		
				10.0		Note: All borings backfilled with cuttings and/or sand.																		

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												10.0	0.0	G2

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-18</b>										
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 24 May 2024 Finish 24 May 2024 Driller Josh Ward H&A Rep. H. Hollauer										
		Casing	Sampler	Barrel	Drilling Equipment and Procedures															
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)											
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88											
Hammer Weight (lb)	-	AUTO	-	Casing: -					Location See Plan											
Hammer Fall (in.)	-	-	-	Hoist/Hammer: - Automatic Hammer																
				PID Make & Model: -																
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test			
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity
0				135.6		-TOPSOIL-														
	PUSH	G1 31	0.0 5.0	0.4	SM	Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry	5	5	5	15	55	15								
				132.0		-FILL-														
5				4.0	CL	Gray and brown silty CLAY (CL), mps= 0.5 in., no structure, moist, color banding of clay, bonded, occasional layers of fine to coarse sand				5	95									
	PUSH	G2 44	5.0 10.0			-FILL-														
				126.8																
10				9.2	ML	Medium gray-brown sandy SILT (ML), mps= 0.5 in., no structure, no odor, moist	5	5	10	20	60									
				10.0		-GLACIAL TILL-														
						BOTTOM OF EXPLORATION 10.0 FT  Note: All borings backfilled with cuttings and/or sand.														

Water Level Data					Sample ID		Well Diagram			Summary			
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)
			Bottom of Casing	Bottom of Hole	Water							Samples	Boring No.
												10.0	0.0
													GP-18

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-19</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 24 May 2024 Finish 24 May 2024 Driller Josh Ward H&A Rep. H. Hollauer											
		Casing	Sampler	Barrel	Drilling Equipment and Procedures					Rig Make & Model: Track Mounted Geoprobe											
Type		-	G	--	Bit Type: -					Elevation 136.0 (est.)											
Inside Diameter (in.)		-	1.5	--	Drill Mud: -					Datum NAVD88											
Hammer Weight (lb)		-	AUTO	-	Casing: -					Location See Plan											
Hammer Fall (in.)		-	-	-	Hoist/Hammer: - Automatic Hammer																
					PID Make & Model: -																
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	<b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b> (Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand			Field Test				
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	P U S H	G1 32	0.0	135.8	SM	-TOPSOIL-															
5.0			0.2	Medium brown silty SAND (SM), mps= 0.5 in., no structure, no odor, dry -FILL-						5	10	10	55	20							
				132.7	SP- SM	Medium brown poorly-graded SAND with silt (SP-SM), mps= 4.75mm, no structure, wet, slight color bonding, bonded -GLACIOMARINE DEPOSITS-								5	5	80	10				
5	P U S H	G2 50	5.0	129.0		ML	Medium gray-brown sandy SILT (ML), mps= 1 in., no structure, no odor, moist, bonded -GLACIAL TILL-						5	5	5	5	15	65			
10.0			7.0	BOTTOM OF EXPLORATION 10.0 FT																	
				126.0	Note: All borings backfilled with cuttings and/or sand.																
				10.0																	

Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												10.0	0.0	G2

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-20</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.										File No. 0209731-000 Sheet No. 1 of 1 Start 24 May 2024 Finish 24 May 2024 Driller Josh Ward H&A Rep. H. Hollauer											
		Casing	Sampler	Barrel	Drilling Equipment and Procedures					Rig Make & Model: Track Mounted Geoprobe											
Type	-	G	--	Bit Type: - Drill Mud: - Casing: - Hoist/Hammer: - Automatic Hammer PID Make & Model: -					Elevation 136.0 (est.) Datum NAVD88												
Inside Diameter (in.)	-	1.5	--						Location See Plan												
Hammer Weight (lb)	-	AUTO	-																		
Hammer Fall (in.)	-	-	-																		
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Gravel		Sand			Field Test				
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	P U S H	G1 23	0.0	135.8	SM	-TOPSOIL-						5	5	5	15	55	15				
5.0			0.2	Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry -FILL-																	
5	P U S H	G2 24	5.0	131.6	ML	Medium brown grading to medium gray sandy SILT (ML), mps= 1 in., no structure, no odor, moist to wet -GLACIAL TILL-						5	5	5	5	15	65				
10.0			4.4	BOTTOM OF EXPLORATION 10.0 FT																	
10				126.0		Note: All borings backfilled with cuttings and/or sand.															
				Water Level Data		Sample ID		Well Diagram			Summary										
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod T - Thin Wall Tube U - Undisturbed Sample S - Splitspoon Sample G - Geoprobe		Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal			Overburden (ft)		10.0								
			Bottom of Casing	Bottom of Hole	Water						Rock Cored (ft)		0.0								
											Samples		G2								
										<b>Boring No.</b>		<b>GP-20</b>									
<b>Field Tests:</b>				Dilatancy: R - Rapid S - Slow N - None Toughness: L - Low M - Medium H - High				Plasticity: N - Nonplastic L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High													
<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.										Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.											

<span style="font-size: 24pt; font-weight: bold; margin-left: 20px;">GEOPROBE REPORT</span>										<b>Boring No. GP-21</b>											
Project BELFAST AREA HIGH SCHOOL, 25 LIONS WAY, BELFAST, ME Client ACTIVITAS, INC. Contractor ENVIRONMENTAL PROJECTS, INC.							File No. 0209731-000 Sheet No. 1 of 1 Start 24 May 2024 Finish 24 May 2024 Driller Josh Ward H&A Rep. H. Hollauer														
		Casing	Sampler	Barrel	Drilling Equipment and Procedures																
Type	-	G	--	Rig Make & Model: Track Mounted Geoprobe					Elevation 136.0 (est.)												
Inside Diameter (in.)	-	1.5	--	Bit Type: -					Datum NAVD88												
Hammer Weight (lb)	-	AUTO	-	Drill Mud: -					Location See Plan												
Hammer Fall (in.)	-	-	-	Casing: -																	
				Hoist/Hammer: - Automatic Hammer																	
				PID Make & Model: -																	
Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION						Field Test									
						(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)						Gravel		Sand				Field Test			
												% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	PUSH	G1 24	0.0 5.0	135.8 0.2	SM	-TOPSOIL- Medium brown silty SAND (SM), mps= 1 in., no structure, no odor, dry -FILL-						5	5	5	15	55	15				
5	PUSH	G2 36	5.0 10.0	131.8 4.2	ML	Medium gray-brown sandy SILT (ML), mps= 1 in., no structure, no odor, moist, bonded -GLACIAL TILL-						5	5	5	5	15	65				
10				126.0 10.0		BOTTOM OF EXPLORATION 10.0 FT  Note: All borings backfilled with cuttings and/or sand.															

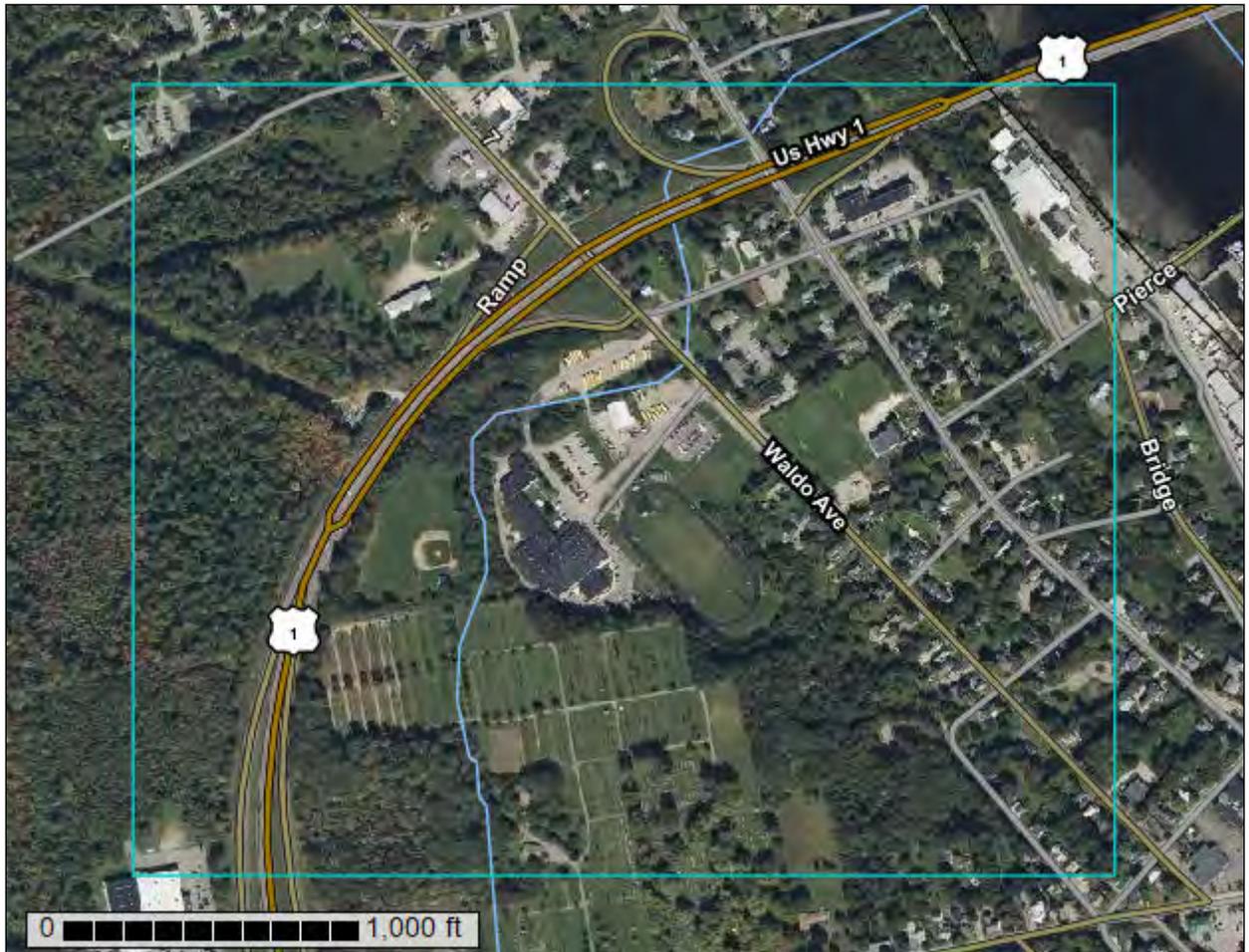
Water Level Data				Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Splitspoon Sample	G - Geoprobe		Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water									
												10.0	0.0	G2

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Waldo County, Maine



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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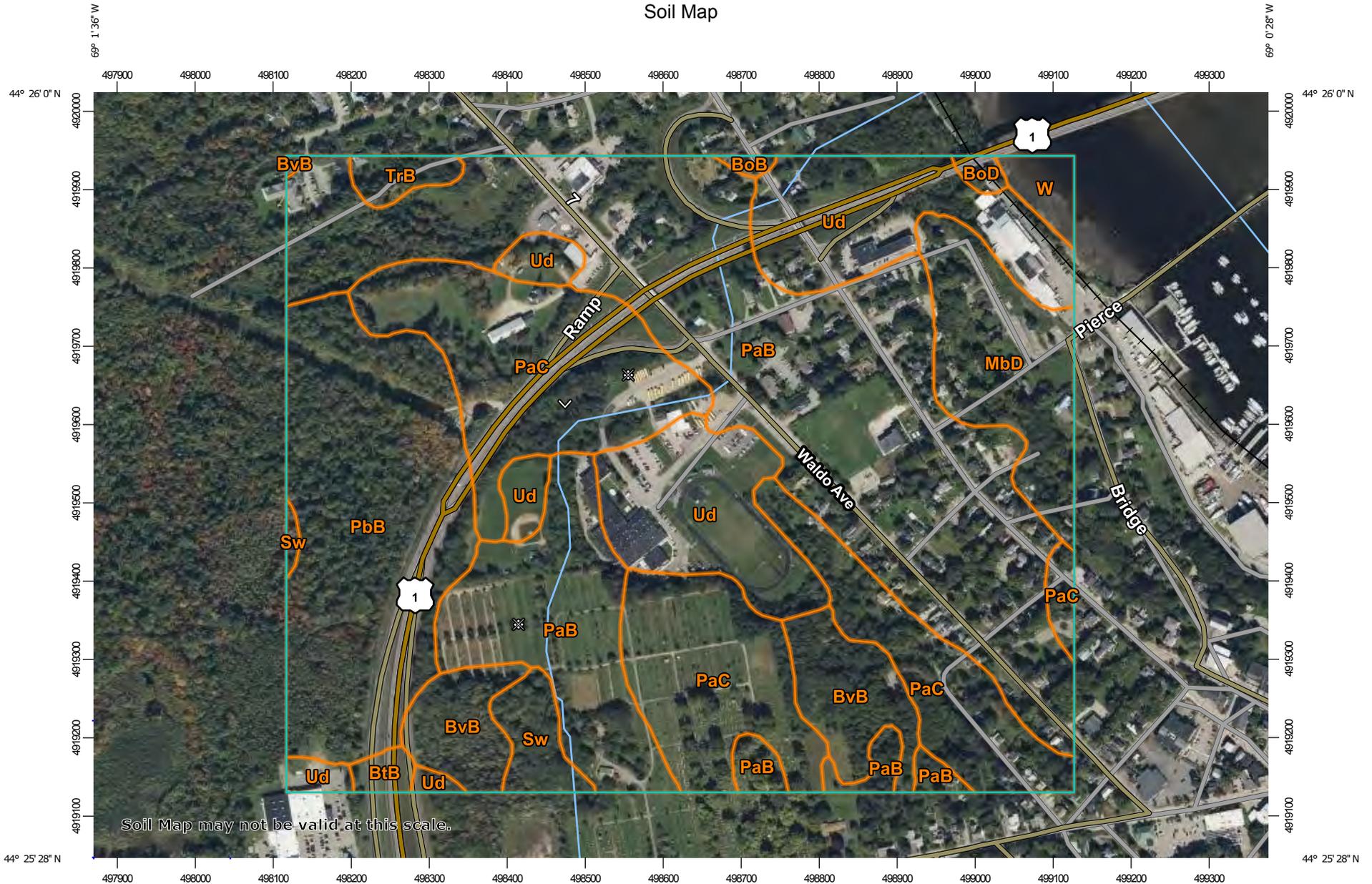
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# Soil Map

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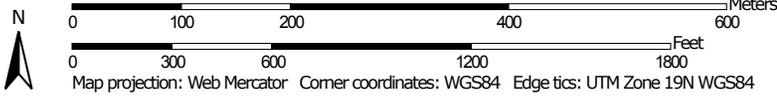
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.

Map Scale: 1:6,890 if printed on A landscape (11" x 8.5") sheet.



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

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

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

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Waldo County, Maine  
 Survey Area Data: Version 24, Aug 26, 2024

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

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

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

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BoB	Boothbay silt loam, 3 to 8 percent slopes	0.3	0.2%
BoD	Boothbay silt loam, 15 to 25 percent slopes	0.6	0.3%
BtB	Brayton fine sandy loam, 0 to 8 percent slopes	1.0	0.5%
BvB	Brayton fine sandy loam, 0 to 8 percent slopes, very stony	10.2	5.0%
MbD	Marlow fine sandy loam, 15 to 25 percent slopes	11.6	5.7%
PaB	Peru fine sandy loam, 3 to 8 percent slopes	74.8	36.7%
PaC	Peru fine sandy loam, 8 to 15 percent slopes	42.4	20.8%
PbB	Peru fine sandy loam, 0 to 8 percent slopes, very stony	28.6	14.0%
Sw	Swanville silt loam, 0 to 3 percent slopes	3.2	1.6%
TrB	Tunbridge-Lyman complex, 3 to 8 percent slopes, rocky	1.7	0.8%
Ud	Udortheents-Urbanland complex	27.7	13.6%
W	Water bodies	1.7	0.9%
<b>Totals for Area of Interest</b>		<b>203.8</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called

## Custom Soil Resource Report

noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can

## Custom Soil Resource Report

be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Waldo County, Maine

### BoB—Boothbay silt loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9k28

*Elevation:* 10 to 2,500 feet

*Mean annual precipitation:* 34 to 50 inches

*Mean annual air temperature:* 37 to 46 degrees F

*Frost-free period:* 60 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Boothbay and similar soils:* 86 percent

*Minor components:* 14 percent

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

#### Description of Boothbay

##### Setting

*Landform:* Marine terraces

*Parent material:* Fine-silty glaciolacustrine deposits and/or fine-silty marine deposits

##### Typical profile

*H1 - 0 to 5 inches:* silt loam

*H2 - 5 to 22 inches:* silt loam

*H3 - 22 to 60 inches:* silty clay loam

##### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.03 to 0.60 in/hr)

*Depth to water table:* About 7 to 18 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* High (about 10.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* D

*Ecological site:* F144BY401ME - Clay Flat

*Hydric soil rating:* No

#### Minor Components

##### Swanville

*Percent of map unit:* 4 percent

*Landform:* Coastal plains

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

**Biddeford**

*Percent of map unit:* 3 percent  
*Landform:* Coastal plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Boothbay, slopes < 3 percent**

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces  
*Hydric soil rating:* No

**Lyman**

*Percent of map unit:* 2 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Tunbridge**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**BoD—Boothbay silt loam, 15 to 25 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 9k2b  
*Elevation:* 10 to 2,500 feet  
*Mean annual precipitation:* 30 to 55 inches  
*Mean annual air temperature:* 37 to 54 degrees F  
*Frost-free period:* 60 to 180 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Boothbay and similar soils:* 84 percent  
*Minor components:* 16 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Boothbay**

**Setting**

*Landform:* Marine terraces

## Custom Soil Resource Report

*Parent material:* Fine-silty glaciolacustrine deposits and/or fine-silty marine deposits

### Typical profile

*H1 - 0 to 5 inches:* silt loam  
*H2 - 5 to 22 inches:* silt loam  
*H3 - 22 to 60 inches:* silty clay loam

### Properties and qualities

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)  
*Depth to water table:* About 12 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* High (about 10.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144BY402ME - Clay Hills  
*Hydric soil rating:* No

## Minor Components

### Lyman

*Percent of map unit:* 4 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### Swanville

*Percent of map unit:* 3 percent  
*Landform:* Coastal plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Eldridge

*Percent of map unit:* 3 percent  
*Landform:* Outwash plains  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Tunbridge

*Percent of map unit:* 3 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex

*Hydric soil rating:* No

**Boothbay, slopes > 25 percent**

*Percent of map unit:* 3 percent

*Landform:* Marine terraces

*Hydric soil rating:* No

**BtB—Brayton fine sandy loam, 0 to 8 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 2t0jl

*Elevation:* 0 to 2,500 feet

*Mean annual precipitation:* 30 to 65 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 60 to 160 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Brayton and similar soils:* 85 percent

*Minor components:* 15 percent

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

**Description of Brayton**

**Setting**

*Landform:* Ground moraines

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Lodgment till

**Typical profile**

*Ap - 0 to 9 inches:* fine sandy loam

*Bg - 9 to 18 inches:* fine sandy loam

*Cd - 18 to 65 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* 10 to 19 inches to densic material

*Drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.40 in/hr)

*Depth to water table:* About 0 to 12 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 3.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* D

Custom Soil Resource Report

*Ecological site:* F144BY305ME - Wet Loamy Flat  
*Hydric soil rating:* Yes

**Minor Components**

**Colonel**

*Percent of map unit:* 6 percent  
*Landform:* Ground moraines  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Peru**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Tunbridge**

*Percent of map unit:* 2 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountaintop, mountainflank,  
mountainbase, side slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Peacham**

*Percent of map unit:* 2 percent  
*Landform:* Ground moraines  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**BvB—Brayton fine sandy loam, 0 to 8 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 2t0jk  
*Elevation:* 10 to 2,500 feet  
*Mean annual precipitation:* 30 to 60 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 70 to 160 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Brayton and similar soils:* 82 percent

## Custom Soil Resource Report

*Minor components: 18 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Brayton

#### Setting

*Landform: Ground moraines*  
*Landform position (three-dimensional): Talf*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Parent material: Lodgment till*

#### Typical profile

*Oa - 0 to 5 inches: highly decomposed plant material*  
*A - 5 to 10 inches: fine sandy loam*  
*Bg - 10 to 23 inches: fine sandy loam*  
*Cd - 23 to 65 inches: fine sandy loam*

#### Properties and qualities

*Slope: 0 to 8 percent*  
*Surface area covered with cobbles, stones or boulders: 1.6 percent*  
*Depth to restrictive feature: 10 to 27 inches to densic material*  
*Drainage class: Poorly drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.40 in/hr)*  
*Depth to water table: About 0 to 12 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Available water supply, 0 to 60 inches: Low (about 4.7 inches)*

#### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: D*  
*Ecological site: F144BY305ME - Wet Loamy Flat*  
*Hydric soil rating: Yes*

### Minor Components

#### Colonel

*Percent of map unit: 8 percent*  
*Landform: Ground moraines*  
*Landform position (two-dimensional): Backslope*  
*Landform position (three-dimensional): Side slope*  
*Down-slope shape: Convex*  
*Across-slope shape: Linear*  
*Hydric soil rating: No*

#### Peru

*Percent of map unit: 5 percent*  
*Landform: Ground moraines*  
*Landform position (two-dimensional): Backslope*  
*Landform position (three-dimensional): Side slope*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Hydric soil rating: No*

**Peacham**

*Percent of map unit:* 3 percent  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Tunbridge**

*Percent of map unit:* 2 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Nose slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**MbD—Marlow fine sandy loam, 15 to 25 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 2ty5j  
*Elevation:* 0 to 850 feet  
*Mean annual precipitation:* 36 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Marlow and similar soils:* 87 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Marlow**

**Setting**

*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainflank, nose slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

**Typical profile**

*Ap - 0 to 4 inches:* fine sandy loam  
*E - 4 to 6 inches:* fine sandy loam  
*Bs1 - 6 to 10 inches:* fine sandy loam  
*Bs2 - 10 to 15 inches:* fine sandy loam  
*Bs3 - 15 to 20 inches:* fine sandy loam

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*BC - 20 to 24 inches: fine sandy loam*

*Cd - 24 to 65 inches: fine sandy loam*

### Properties and qualities

*Slope: 15 to 25 percent*

*Depth to restrictive feature: 20 to 39 inches to densic material*

*Drainage class: Well drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Maximum salinity: Nonsaline (0.0 to 1.9 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): 4e*

*Hydrologic Soil Group: C*

*Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)*

*Hydric soil rating: No*

### Minor Components

#### Tunbridge

*Percent of map unit: 7 percent*

*Landform: Hills, mountains*

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

*Landform position (three-dimensional): Mountainflank, nose slope, side slope*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Hydric soil rating: No*

#### Peru

*Percent of map unit: 3 percent*

*Landform: Hills, mountains*

*Landform position (two-dimensional): Backslope, footslope*

*Landform position (three-dimensional): Mountainflank, nose slope, side slope*

*Microfeatures of landform position: Open depressions, open depressions*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Hydric soil rating: No*

#### Brayton

*Percent of map unit: 2 percent*

*Landform: Hills, mountains*

*Landform position (two-dimensional): Footslope, toeslope*

*Landform position (three-dimensional): Mountainflank, nose slope, side slope*

*Microfeatures of landform position: Open depressions, open depressions*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Hydric soil rating: Yes*

#### Berkshire

*Percent of map unit: 1 percent*

*Landform: Hills, mountains*

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

## Custom Soil Resource Report

*Landform position (three-dimensional):* Mountainflank, nose slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **PaB—Peru fine sandy loam, 3 to 8 percent slopes**

#### **Map Unit Setting**

*National map unit symbol:* 2ty5x  
*Elevation:* 0 to 720 feet  
*Mean annual precipitation:* 36 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* All areas are prime farmland

#### **Map Unit Composition**

*Peru and similar soils:* 88 percent  
*Minor components:* 12 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### **Description of Peru**

##### **Setting**

*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Mountainbase, interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

##### **Typical profile**

*Ap - 0 to 6 inches:* fine sandy loam  
*Bhs - 6 to 8 inches:* fine sandy loam  
*Bs1 - 8 to 12 inches:* fine sandy loam  
*Bs2 - 12 to 18 inches:* fine sandy loam  
*Bs3 - 18 to 21 inches:* fine sandy loam  
*BC - 21 to 24 inches:* fine sandy loam  
*Cd - 24 to 65 inches:* sandy loam

##### **Properties and qualities**

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 39 inches to densic material  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 1.42 in/hr)  
*Depth to water table:* About 16 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

## Custom Soil Resource Report

*Available water supply, 0 to 60 inches:* Low (about 3.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C/D

*Ecological site:* F144BY501ME - Loamy Slope (Northern Hardwoods)

*Hydric soil rating:* No

### Minor Components

#### Brayton

*Percent of map unit:* 5 percent

*Landform:* Hills, mountains

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Mountainbase, interfluvium

*Microfeatures of landform position:* Closed depressions, closed depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Marlow

*Percent of map unit:* 3 percent

*Landform:* Hills, mountains

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

*Landform position (three-dimensional):* Mountainbase, interfluvium

*Microfeatures of landform position:* Rises, rises

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Sunapee

*Percent of map unit:* 3 percent

*Landform:* Hills, mountains

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Mountainbase, interfluvium

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Colonel

*Percent of map unit:* 1 percent

*Landform:* Hills, mountains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Mountainbase, interfluvium

*Microfeatures of landform position:* Closed depressions, closed depressions

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave

*Hydric soil rating:* No

## **PaC—Peru fine sandy loam, 8 to 15 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2ty5z

*Elevation:* 0 to 790 feet

*Mean annual precipitation:* 36 to 65 inches

*Mean annual air temperature:* 36 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Peru and similar soils:* 90 percent

*Minor components:* 10 percent

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

### **Description of Peru**

#### **Setting**

*Landform:* Hills, mountains

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Mountainflank, mountainbase, interfluve, nose slope, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

#### **Typical profile**

*Ap - 0 to 6 inches:* fine sandy loam

*Bhs - 6 to 8 inches:* fine sandy loam

*Bs1 - 8 to 12 inches:* fine sandy loam

*Bs2 - 12 to 18 inches:* fine sandy loam

*Bs3 - 18 to 21 inches:* fine sandy loam

*BC - 21 to 24 inches:* fine sandy loam

*Cd - 24 to 65 inches:* sandy loam

#### **Properties and qualities**

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 20 to 39 inches to densic material

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 1.42 in/hr)

*Depth to water table:* About 16 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water supply, 0 to 60 inches:* Low (about 3.7 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

## Custom Soil Resource Report

*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144BY501ME - Loamy Slope (Northern Hardwoods)  
*Hydric soil rating:* No

### Minor Components

#### Marlow

*Percent of map unit:* 4 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase, interfluve, nose slope, side slope  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Brayton

*Percent of map unit:* 4 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase, interfluve, nose slope, side slope  
*Microfeatures of landform position:* Closed depressions, closed depressions, open depressions, open depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Colonel

*Percent of map unit:* 1 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase, interfluve, nose slope, side slope  
*Microfeatures of landform position:* Closed depressions, closed depressions, open depressions, open depressions  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### Lyman

*Percent of map unit:* 1 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase, interfluve, nose slope, side slope  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **PbB—Peru fine sandy loam, 0 to 8 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2ty62  
*Elevation:* 0 to 590 feet  
*Mean annual precipitation:* 36 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Peru, very stony, and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Peru, Very Stony**

#### **Setting**

*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Mountainbase, interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

#### **Typical profile**

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 5 inches:* fine sandy loam  
*E - 5 to 6 inches:* fine sandy loam  
*Bs1 - 6 to 7 inches:* fine sandy loam  
*Bs2 - 7 to 13 inches:* fine sandy loam  
*Bs3 - 13 to 18 inches:* fine sandy loam  
*BC - 18 to 21 inches:* fine sandy loam  
*Cd1 - 21 to 37 inches:* fine sandy loam  
*Cd2 - 37 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Surface area covered with cobbles, stones or boulders:* 1.1 percent  
*Depth to restrictive feature:* 21 to 43 inches to densic material  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 1.42 in/hr)  
*Depth to water table:* About 17 to 34 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Low (about 3.6 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144BY501ME - Loamy Slope (Northern Hardwoods)  
*Hydric soil rating:* No

### Minor Components

#### Brayton, very stony

*Percent of map unit:* 6 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Mountainbase, interfluve  
*Microfeatures of landform position:* Closed depressions, closed depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Marlow, very stony

*Percent of map unit:* 2 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainbase, interfluve  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Tunbridge, very stony

*Percent of map unit:* 1 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainbase, interfluve  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Berkshire, very stony

*Percent of map unit:* 1 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainbase, interfluve  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **Sw—Swanville silt loam, 0 to 3 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2slv8  
*Elevation:* 10 to 1,200 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 39 to 45 degrees F  
*Frost-free period:* 80 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Swanville and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Swanville**

#### **Setting**

*Landform:* Marine terraces, lake plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Glaciolacustrine deposits

#### **Typical profile**

*Ap - 0 to 9 inches:* silt loam  
*Bg - 9 to 22 inches:* silt loam  
*C - 22 to 65 inches:* silt loam

#### **Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* High (about 9.4 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144BY304ME - Wet Clay Flat, F144BY305ME - Wet Loamy Flat  
*Hydric soil rating:* Yes

**Minor Components**

**Pushaw**

*Percent of map unit:* 8 percent  
*Landform:* Marine terraces, lake plains  
*Landform position (three-dimensional):* Riser, rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Biddeford**

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave, linear  
*Ecological site:* F144BY002ME - Marine Terrace Depression  
*Hydric soil rating:* Yes

**Monarda**

*Percent of map unit:* 2 percent  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Boothbay**

*Percent of map unit:* 2 percent  
*Landform:* Lake plains, marine terraces  
*Landform position (three-dimensional):* Riser, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**TrB—Tunbridge-Lyman complex, 3 to 8 percent slopes, rocky**

**Map Unit Setting**

*National map unit symbol:* 2trq3  
*Elevation:* 0 to 560 feet  
*Mean annual precipitation:* 36 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Tunbridge, rocky, and similar soils:* 59 percent  
*Lyman, rocky, and similar soils:* 27 percent

## Custom Soil Resource Report

*Minor components: 14 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Tunbridge, Rocky

#### Setting

*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountaintop, mountainbase, side slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 5 inches:* highly decomposed plant material  
*E - 5 to 8 inches:* fine sandy loam  
*Bhs - 8 to 11 inches:* fine sandy loam  
*Bs - 11 to 26 inches:* fine sandy loam  
*BC - 26 to 28 inches:* fine sandy loam  
*R - 28 to 38 inches:* bedrock

#### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C  
*Ecological site:* F144BY702ME - Shallow and Moderately-deep Till  
*Hydric soil rating:* No

### Description of Lyman, Rocky

#### Setting

*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountaintop, mountainbase, side slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

## Custom Soil Resource Report

### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 3 inches:* loam  
*E - 3 to 5 inches:* fine sandy loam  
*Bhs - 5 to 7 inches:* loam  
*Bs1 - 7 to 11 inches:* loam  
*Bs2 - 11 to 18 inches:* channery loam  
*R - 18 to 28 inches:* bedrock

### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 3.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* D  
*Ecological site:* F144BY702ME - Shallow and Moderately-deep Till  
*Hydric soil rating:* No

### Minor Components

#### Brayton, rocky

*Percent of map unit:* 5 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Mountaintop, mountainbase, side slope, crest  
*Microfeatures of landform position:* Closed depressions, closed depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Peru, rocky

*Percent of map unit:* 5 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Mountaintop, mountainbase, side slope, crest  
*Microfeatures of landform position:* Closed depressions, closed depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### Abram, rocky

*Percent of map unit:* 4 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Mountaintop, mountainbase, side slope, crest

*Microfeatures of landform position:* Rises, rises

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

### Ud—Udorthents-Urbanland complex

#### Map Unit Setting

*National map unit symbol:* 9k4j

*Elevation:* 0 to 2,500 feet

*Mean annual precipitation:* 34 to 48 inches

*Mean annual air temperature:* 37 to 46 degrees F

*Frost-free period:* 160 to 165 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Udorthents and similar soils:* 65 percent

*Urban land:* 21 percent

*Minor components:* 14 percent

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

#### Description of Udorthents

##### Typical profile

*H1 - 0 to 60 inches:* very gravelly sandy loam

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to very high (0.06 to 20.00 in/hr)

*Depth to water table:* About 24 to 42 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 6.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Hydrologic Soil Group:* A

*Ecological site:* F144BY501ME - Loamy Slope (Northern Hardwoods)

*Hydric soil rating:* No

#### Description of Urban Land

##### Typical profile

*H1 - 0 to 6 inches:* variable

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

*Depth to water table:* About 24 to 42 inches

*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):* 8s

*Hydric soil rating:* No

### Minor Components

#### Peru

*Percent of map unit:* 8 percent

*Landform:* Drumlinoid ridges

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Swanville

*Percent of map unit:* 2 percent

*Landform:* Coastal plains

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Boothbay

*Percent of map unit:* 2 percent

*Landform:* Marine terraces

*Hydric soil rating:* No

#### Brayton

*Percent of map unit:* 2 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

## W—Water bodies

### Map Unit Composition

*Water:* 100 percent

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

**Description of Water**

**Setting**

*Landform:* Lakes

# Soil Information for All Uses

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## Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

## Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

## Hydrologic Soil Group

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.

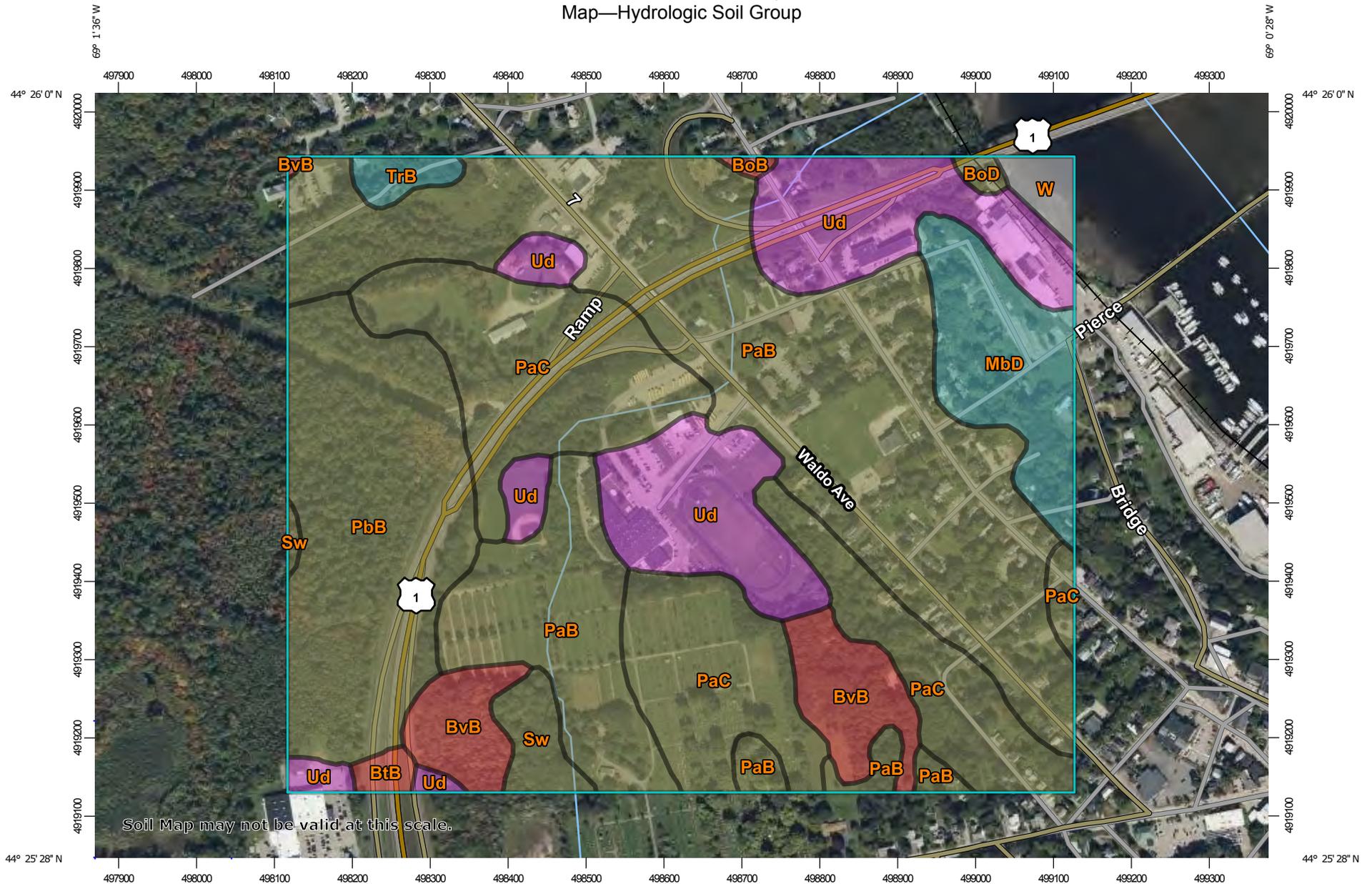
## Custom Soil Resource Report

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.

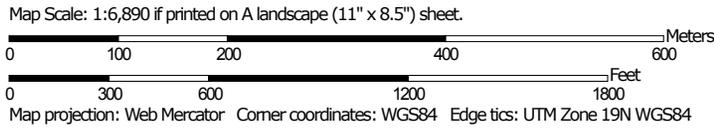
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over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

# Custom Soil Resource Report Map—Hydrologic Soil Group



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

**Water Features**

-  Streams and Canals

**Transportation**

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

**Background**

-  Aerial Photography

**Soils (continued)**

-  C
-  C/D
-  D
-  Not rated or not available

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Waldo County, Maine  
 Survey Area Data: Version 24, Aug 26, 2024

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

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

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

**Table—Hydrologic Soil Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BoB	Boothbay silt loam, 3 to 8 percent slopes	D	0.3	0.2%
BoD	Boothbay silt loam, 15 to 25 percent slopes	C/D	0.6	0.3%
BtB	Brayton fine sandy loam, 0 to 8 percent slopes	D	1.0	0.5%
BvB	Brayton fine sandy loam, 0 to 8 percent slopes, very stony	D	10.2	5.0%
MbD	Marlow fine sandy loam, 15 to 25 percent slopes	C	11.6	5.7%
PaB	Peru fine sandy loam, 3 to 8 percent slopes	C/D	74.8	36.7%
PaC	Peru fine sandy loam, 8 to 15 percent slopes	C/D	42.4	20.8%
PbB	Peru fine sandy loam, 0 to 8 percent slopes, very stony	C/D	28.6	14.0%
Sw	Swanville silt loam, 0 to 3 percent slopes	C/D	3.2	1.6%
TrB	Tunbridge-Lyman complex, 3 to 8 percent slopes, rocky	C	1.7	0.8%
Ud	Udorthents-Urbanland complex	A	27.7	13.6%
W	Water bodies		1.7	0.9%
<b>Totals for Area of Interest</b>			<b>203.8</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

**SECTION 12: STORMWATER MANAGEMENT**



## SECTION 12

### STORMWATER MANAGEMENT

#### A. Narrative.

- (1) Development Location. The Belfast Regional Area High School campus is located in Belfast, Maine in the Coastal watershed near the Passagassawakeag River. The development has existed as a school campus since it was constructed in 1965.
- (2) Surface Water on or Abutting the Site. The Belfast Regional Area High School campus has an unnamed stream and freshwater scrub-shrub wetland in the wooded area to the east of the existing track and field. There is another unnamed stream located to the west of the existing school building and between the existing bus barn and driveway named Pride Way. This stream connects to the Belfast roadside ditch system and is eventually tributary to the Passagassawakeag River.
- (3) Downstream Ponds and Lakes. There are no downstream ponds or lakes of the Belfast Regional Area High School campus.
- (4) General Topography. The slope across the site varies with the highest point at the western side at approximately 166' and slopes down toward Waldo Avenue which is at approximately 110'. The school building and baseball field are at the highest elevation on the development property. The track and field facility is about 10' lower than the school buildings. An open field and parking lot are about 20' lower than the track and field level with Waldo Avenue.
- (5) Flooding. There is no history of flooding of any of the buildings or facilities on the Belfast Regional Area High School campus or of any downstream off-site properties as a result of the campus.
- (6) Alterations to Natural Drainage Ways. The campus improvements since 1970 as well as the proposed renovations at the track and field do not propose any changes in the alignment or channel geometry of the natural drainage ways on or adjacent to the property.
- (7) Alterations to Land Cover. The Belfast Regional Area High School campus was built in 1965 and was originally built on the site of a farm property. Since 1970, improvements have been made to the Belfast Regional Area High School campus to include additions to the school building, new driveways and new parking areas, however these improvements all took place within areas that are considered developed by the Department's definition. RSU71 is also currently proposing to renovate their existing track and field. The renovations consist of reconfiguring the existing 6-lane asphalt track to a new 6-lane oval 8-lane straight asphalt track with a rubberized track surfacing and paved D areas. New areas will be defined for the jumping and throwing events for track outside of the track oval. The existing natural grass field within the track will be converted to synthetic turf. The project will also remove the existing bleacher system and replace it with a new

bleacher system and pressbox. Additional site improvements include new storage buildings and other landscape and entrance improvements. The improvements since 1971 combined with the proposed track and field project add 6.44 acres of impervious area on the property. Figures 12-1, 12-2, and 12-3 show the impervious cover on the campus in 1970, 1997, and for the proposed conditions respectively.

Please refer to the Water Quality portion of this section that further discusses the improvements and the alterations to land cover as they relate to redevelopment.

- (8) Modeling Assumptions. The drainage analysis was performed using the Soil Conservation Service (SCS) TR-55 and TR-20 methodologies and the computer program HydroCAD 10.20-5c by HydroCAD Software Solutions, LLC.

**Time of Concentration.** Time of Concentration (Tc) values were calculated using Average Velocities for Overland Flow, found in SCS TR-55 Urban Hydrology for Small Watersheds. The minimum Tc used was six (6) minutes.

**Curve Numbers.** Curve numbers were developed for each of the different use categories and hydrologic soil group types within each sub-area. The curve numbers were based on the SCS TR-55 methodology and are included in the HydroCAD input and output found in calculations at the end of this section.

**Rainfall.** Rainfall data is taken from Appendix H of MaineDEP Chapter 500 for Waldo County for the 2-, 10- and 25-yr storm events. These storms have the following depths:

Storm Event	Rainfall Depth
2-year	2.90"
10-yr	4.20"
25-yr	5.20"

- (9) Water Quantity Control – Flooding Standard. The improvements at the Belfast Regional Area High School campus since 1970 and the proposed track and field renovations are subject to the Flooding Standard. Please refer to Section E.

Due to the nature of the after the fact filing of this application, the applicant is proposing to install the stormwater management systems in phases. The proposed system under the synthetic turf field will be installed as part of the track and field renovation project. The additional stormwater

management system under the gravel parking lot near Waldo Avenue will follow.

- (10) Water Quality Treatment – General Standard. The improvements at the Belfast Regional Area High School campus since 1970 and the proposed track and field renovations are subject to the General Standard. Please refer to Section F.

Due to the nature of the after the fact filing of this application, the applicant is proposing to install the stormwater management system in phases. The proposed system under the synthetic turf field will be installed as part of the track and field renovation project. The additional stormwater management system under the gravel parking lot near Waldo Avenue will follow.

- (11) Offset Credits. The project is not requesting any offset credits.

- (12) Compensation Fees. The project is not proposing the use of a compensation fee to offset required phosphorus removal.

- (13) Development Impacts. Throughout the improvements since 1970, stormwater runoff from the Belfast Regional Area High School campus has flowed and left the site in a manner similar to the original development. Stormwater runoff from the proposed track and field renovation and associated stormwater management system as designed will continue to leave the site in a manner similar to the way stormwater leaves the site now. There are no anticipated development impacts on-site or off-site as a result of the Belfast Regional High School Campus development and the proposed future renovations.

B. Map.

- (1) Topographic Map. See the attached project plan set that includes topography existing and proposed conditions.

- (2) Soils Map. Soils maps for the entire property can be found in Section 11 - SOILS. Additional geotechnical information was collected for the track and field area and is provided in Section 11 – SOILS.

- C. Drainage Plans. See the attached project plan set for the grading, drainage, and erosion control plans. The existing (1970) and proposed condition watershed maps are provided as an attachment to this section.

- D. Runoff Analysis. Please refer to Section E for Water Quantity runoff analysis.

- E. Flooding Standard.

The project is required to meet the flooding standard under Chapter 500 Section 4.E(2)(a). As the

campus property was developed in 1965, prior to the enactment of the Site Location of Development Act, only improvements after 1970 are required to be included in the analysis. The proposed stormwater management systems have been designed to meet the flooding standard. The following analysis demonstrates how there will be no increase in peak runoff due to the improvements since 1970 or the proposed track and field renovations.

### **Existing Conditions**

The Belfast Regional High School campus was developed in 1965, per 38. M.R.S §§ 488 all areas existing prior to 1970 are exempt from the Department's consideration. The history of the construction of the various campus elements is not complete, therefore the project team had to rely on publicly available historic aerial images to generate a plan of the site conditions in 1970. Historical aerials for the property exist from 1966 and 1971. The 1966 aerial clearly shows the school building, bus building, and associated parking and driveways established. It also appears that the earthmoving to build the flat area that will become the track and field is underway. The 1971 aerial shows the track and field, and baseball field completed and clearly established. These aerials are provided in Section 1 as Figures 1-2 and 1-3. Based on this information, it is the project team's opinion that the track and field and baseball field area were completed prior to 1970 and the development conditions that are depicted in the 1971 aerial can be used for the existing conditions analysis for the flooding standard. During a meeting on February 10, 2025, with DEP Environmental Engineer, Cody Obropta, this method of determining the existing conditions was reviewed and agreed to for use in the analysis.

The runoff from the Belfast Regional High School campus leaves the property via streams, a series of ditches or overland and ultimately is collected in the roadside ditches along Waldo Avenue that are a part of the Town of Belfast's stormwater infrastructure. This system is ultimately tributary to Passagassawakeag River. This Belfast stormwater infrastructure is considered the drainage point for the analysis (DP-1). Three subcatchment areas were used to model the existing conditions.

Subcatchment 1 includes the area on the eastern side of the campus. Runoff from this area flows overland off the property until it is ultimately collected in the Belfast stormwater infrastructure. This area consists of the driveways, parking areas, track and natural grass field and other developed landscape areas.

Subcatchment 2 is an area located centrally on the property. Runoff from this area is either collected in on site drainage infrastructure and outlets into the unnamed stream that runs west to east in the northern portion of the property, or it flows overland directly into this stream. This area consists of the school building and bus barn, a portion of the parking area, portions of the developed landscaped areas immediately adjacent to the buildings, and brush conditions associated with the unnamed stream and its banks.

Subcatchment 3 is an area located on the northern side of the property. Runoff from this area flows

overland offsite to the north and east until it is ultimately collected in the Belfast stormwater infrastructure. This area consists of landscaped and fields and roofs.

Please refer to Figure WS1.1 for the watershed map of the existing conditions.

### **Proposed Conditions**

The proposed conditions consist of the campus improvements made since 1970 as well as the proposed track and field renovations. Runoff from the proposed track and field will continue to be collected in the campus drainage infrastructure or flow overland to the unnamed stream to the south of the track and field which are eventually collected into the roadside ditch system alongside Waldo Avenue (DP-1). Five subcatchment areas were used to model the proposed conditions.

Subcatchment-10 consists of the track, infilled synthetic turf field, and throwing areas. Stormwater flows are managed by utilizing the crushed stone base under the turf field as well as subsurface storage chambers installed below the field stone profile. The field drainage layer is comprised of a layer of ½" – ¾" double washed crushed stone with perforated flat drains spaces at 20' O.C. throughout the turf field areas and 12" perforated perimeter drains along the perimeter of the field. To provide additional volume for stormwater detention, subsurface storage chambers will also be installed below the field profile. The 12" perforated perimeter drains will tie into the chambers allowing the entire system to act together as one subsurface detention system. This drainage system will serve as the detention basin for the stormwater runoff flowing vertically through the turf field and additional runoff from the adjacent areas collected by the various types of inlets (i.e. catch basins, channel drains, area drains, etc.). Though the track and field is located over D soils with low infiltration rates, all of the water that enters into the system will be provided an opportunity to infiltrate at a rate of 0.04 in/hr. Runoff that does not infiltrate will be conveyed to an outlet control structure that will attenuate flows prior to outletting into an existing swale adjacent to the driveway which outlets in the roadside ditch along Waldo Avenue.

Subcatchment-11 consists of grassed areas surrounding the track and field, a portion of the track and field throwing events, buildings, walkways, driveways, and a parking lot to the northeast. Runoff from this subcatchment flows overland until it is eventually collected in the roadside ditch along Waldo Avenue.

Subcatchment-12 consists of paved and gravel parking areas, a portion of the paved driveway, and developed landscaped areas. Runoff from this area is collected by a series of catch basins which flow to a subsurface detention system. The subsurface detention system is comprised of subsurface storage chambers. The system has been designed to provide the water quality volume required for the campus improvements since 1970 to meet DEP standards; however, the system provides stormwater detention as well. The required water quality volume is routed through a proprietary water quality unit. After treatment this runoff discharged to the unnamed stream between the bus barn and Pride Way. Runoff greater than the required water quality volume is routed to a bypass system where it also discharges to

the unnamed stream between the bus barn and Pride Way. This stream connects to the roadside ditch along Waldo Avenue just downstream of the proposed outlets.

Subcatchment-20 is an area located centrally on the property. Runoff from this area is either collected in existing on-site drainage infrastructure and outlets into the unnamed stream that runs west to east in the northern portion of the property, or it flows overland directly into this stream. This area consists of the school building and bus barn, a portion of the parking area, portions of the developed landscaped areas immediately adjacent to the buildings, and brush conditions associated with the unnamed stream and its banks.

Subcatchment-30 is an area located on the northern side of the property containing portions of a driveway, gravel parking areas, developed landscaped areas, and woods. Runoff from this area flows overland offsite to the north and east until it is ultimately collected in the Belfast stormwater infrastructure.

Please refer to WS2.1 for the watershed map of the proposed conditions.

**Peak Discharge Runoff Rates**

The peak flows were calculated for the 2-, 10-, and 25-year storm events under the existing and proposed conditions to compare. The proposed conditions will decrease the peak rates in all storms. The runoff calculations for both the existing and proposed conditions can be found at the end of this section.

		2-Year	10-Year	25-Year
DISCHARGE POINTS	DP-1E	31.15	57.35	78.41
	DP-1P	24.48	49.79	66.21

The full HydroCAD analysis of the existing and proposed conditions can be found at the end of this section.

F. General Standards.

Water Quality.

Maine DEP's water quality standards were developed in 1997 and any developed areas that existed prior to 1997 are not subject to this standard. As previously stated, there have been improvements which resulted in an increase of impervious cover at the Belfast Regional High School campus since it

was originally developed in 1965. However, all of these improvements were done in areas that were already developed and as such are considered redevelopment. As the history of the construction of the various campus elements is not complete, the project team had to rely on publicly available historic aerial images to generate a plan of the existing conditions in 1997. Historical aerial imagery for the property exists for 1996. This aerial can be found in Section 1 as Figure 1-4. The development conditions depicted in this aerial were used to develop the existing conditions of the site in 1997 to serve as the comparison to generate the required water quality volume to be treated on the site. During a meeting on February 10, 2025, with DEP Environmental Engineer, Cody Obropta, this method of determining the existing conditions was reviewed and agreed to for use in the analysis.

A pollutant rankings analysis of the existing conditions of the campus in 1997 are provided below. The proposed conditions analysis includes campus improvements since 1997 as well as the proposed track and field renovations. Figures 12-4 and 12-5 at the end of this section provide a visual representation of the rankings.

Existing Conditions (1997) Pollutant Ranking							
Pollutant Ranking	5	4	3	2	1	0	Total
Area (Ac)	-	-	3.53	15.32	-	7.20	26.06
Impact Score	-	-	10.60	30.65	-	0.00	41.25
<b>Existing Impact Rating</b>							<b>1.58</b>

Proposed Conditions Pollutant Ranking							
Pollutant Ranking	5	4	3	2	1	0	Total
Area (Ac)	-	-	4.14	14.76	0.06	73.11	26.06
Impact Score	-	-	12.41	29.53	0.06	0.00	41.99
<b>Proposed Impact Rating</b>							<b>1.61</b>

The difference between the existing impact rating and the proposed impact rating is 0.03. Based on the pollutant ranking comparison only 60% of the new impervious areas built on the site since 1996 and proposed with the track and field renovations are required to be treated.

The proposed synthetic turf field is designed with a profile to have a 2-inch sand layer on top of an 8-inch stone layer, on top of an underdrain system. This system is a common synthetic turf fields throughout the State of Maine, and the sand and stone layer is understood to provide treatment that meets the Chapter 500 requirements. A detail of the filter layer profile is provided in the project drawings.

The geotechnical report, under Section 11 – Soils, indicates groundwater at the field elevation to be at 12-13 feet below the existing surface elevation. The depth to groundwater between the field treatment system, including the additional detention system beneath the field profile is at least 9 feet.

Additional water quality treatment will be provided by a proprietary treatment system located in the gravel parking lot near Waldo Avenue. Runoff from the paved driveway will be collected in a series of catch basins and conveyed to a subsurface detention system sized to provide the required water quality volume. The required water quality volume will be detained and released into a Contech – Jellyfish Filter.

The required water quality volume was calculated as the following:

$$Q_v = 1.0 - \text{inch} \times \text{Impervious Area}$$

$$Q_v = (1\text{in}) \times \left(\frac{1\text{ft}}{12\text{in}}\right) \times (48,787\text{ sf})$$

$$Q_v = 4,066\text{ cf}$$

The filter has been designed to Maine DEP standards as outlined in the approval letter from MaineDEP dated January 21, 2015, included at the end of this section. Sizing calculations for the Jellyfish Filter are provided at the end of this section.

A treatment summary of the added impervious to the campus since 1997 is provided in the table below. The analysis and summary include the added impervious associated with the proposed track and field project.

	Impervious Area (SF)	Treated Area (SF)
Synthetic Turf Field	84,135	84,135
Other Proposed Impervious Area	81,480	48,787
<b>Totals</b>	<b>165,615</b>	<b>132,922</b>
		<b>80%</b>

Treatment will be provided for 80% of the newly added impervious across the site, exceeding the required 60% for the redevelopment standard.

Phosphorous.

The Belfast Regional High School campus is not located in a lake watershed. Runoff from the property is eventually collected in the Belfast stormwater drainage infrastructure which ultimately outlets to the Passagassawakeag River. Therefore, the phosphorous standard does not apply on this project site.

**EXISTING CONDITIONS NOTES**

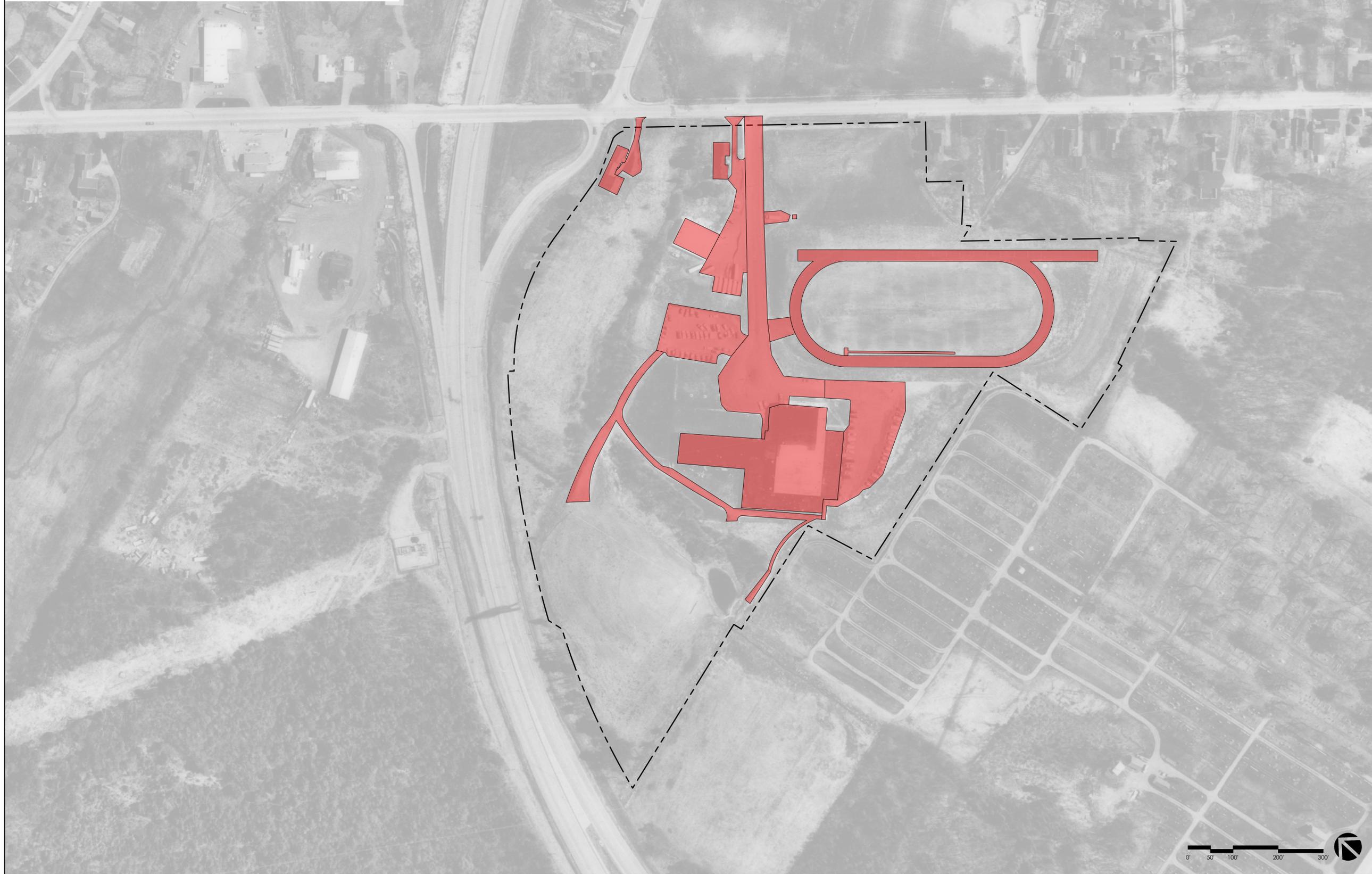
1. EXISTING CONDITIONS INFORMATION OBTAINED FROM PUBLICLY AVAILABLE HISTORICAL AERIAL INFORMATION. AERIAL DATED MAY 14, 1971.

**EXISTING CONDITIONS LEGEND**

PROPERTY LINE   
 IMPERVIOUS AREA (1970) 

**IMPERVIOUS AREAS**

AREA (AC)	DESCRIPTION
1.473	ROOFS
0.031	GRAVEL
1.952	PAVEMENT / PAVED
<b>3.456</b>	<b>TOTAL</b>



**CONSULTANTS**

WETLAND DELINEATION -  
 HALEY WARD, INC.  
 SURVEY -  
 E.S. COFFIN ENGINEERING & SURVEYING, INC.  
 GEOTECHNICAL ENGINEER -  
 HALEY & ALDRICH, INC

**RSU 71 BELFAST AREA  
 HIGH SCHOOL**  
 Belfast, ME

Site Location of Development Act

Permitting Documents  
 April 25, 2025

REVISIONS:

NO.	DATE	DESCRIPTION

SCALE: 1"=100'-0"  
 PROJECT NO.: 24002.00  
 FILE: 24002.00-EX\_CONDITIONS.dwg  
 DRAWN: BJM  
 CHECKED: SRC/HG

SEAL:

SHEET TITLE:  
 EXISTING CONDITIONS  
 IMPERVIOUS COVER  
 (1970)

SHEET NO:  
**12-1**

EXISTING CONDITIONS NOTES

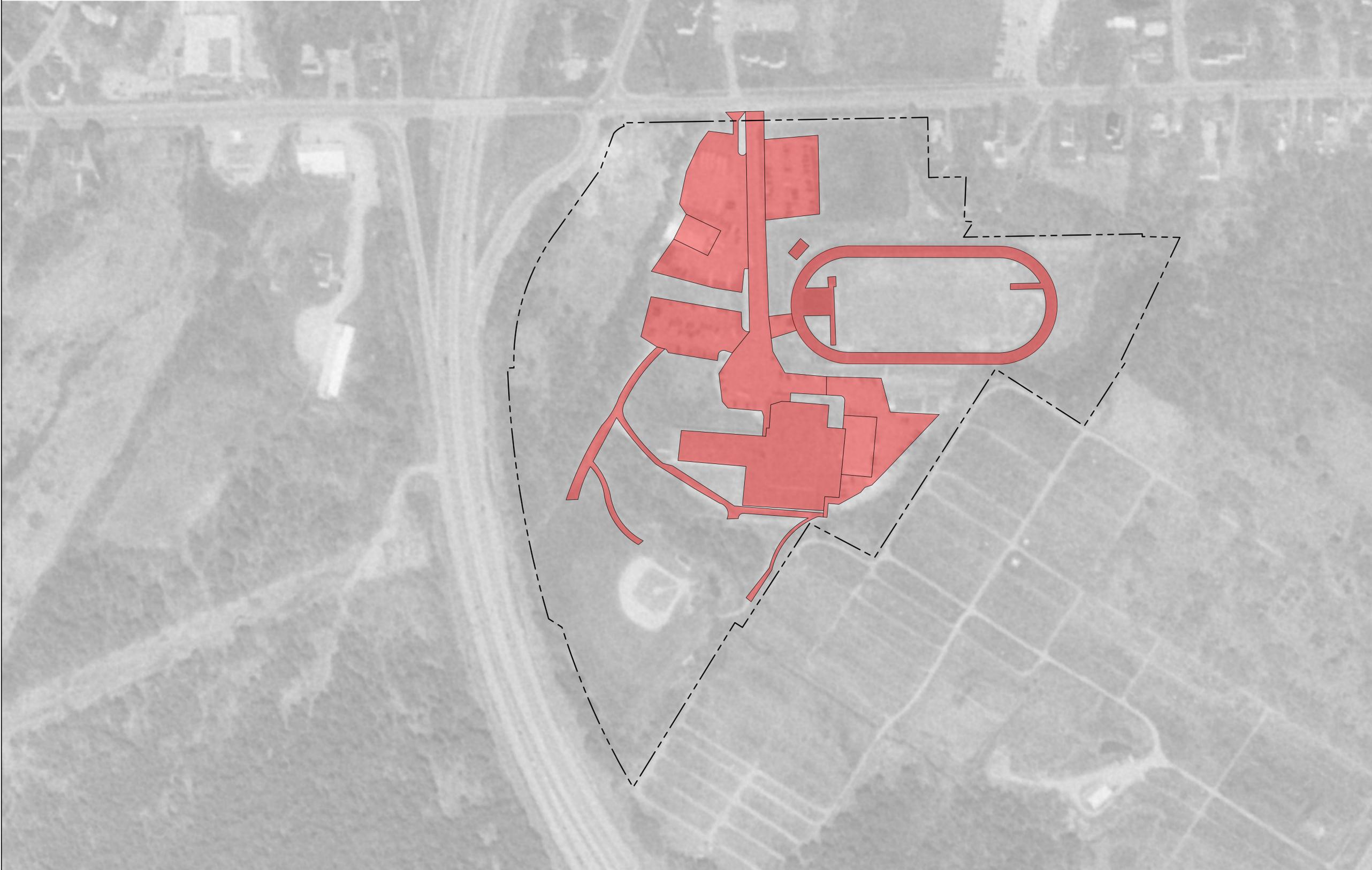
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EXISTING CONDITIONS LEGEND

- PROPERTY LINE 
- IMPERVIOUS AREA (1997) 

IMPERVIOUS AREAS

AREA (AC)	DESCRIPTION
1.562	ROOFS
2.605	GRAVEL
1.931	PAVEMENT / PAVED
<b>6.098</b>	<b>TOTAL</b>



CONSULTANTS

WETLAND DELINEATION -  
 HALEY WARD, INC.  
 SURVEY -  
 E.S. COFFIN ENGINEERING & SURVEYING, INC.  
 GEOTECHNICAL ENGINEER -  
 HALEY & ALDRICH, INC

**RSU 71 BELFAST AREA  
 HIGH SCHOOL**  
 Belfast, ME  
 Site Location of Development Act

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REVISIONS:

NO.	DATE	DESCRIPTION

SCALE: 1"=100'-0"  
 PROJECT NO.: 24002.00  
 FILE: 24002.00-EX\_CONDITIONS.dwg  
 DRAWN: BJM  
 CHECKED: SRC/HG

SEAL:

SHEET TITLE:  
 EXISTING CONDITIONS  
 IMPERVIOUS COVER  
 (1997)

SHEET NO:  
**12-2**

**PROPOSED CONDITIONS NOTES**

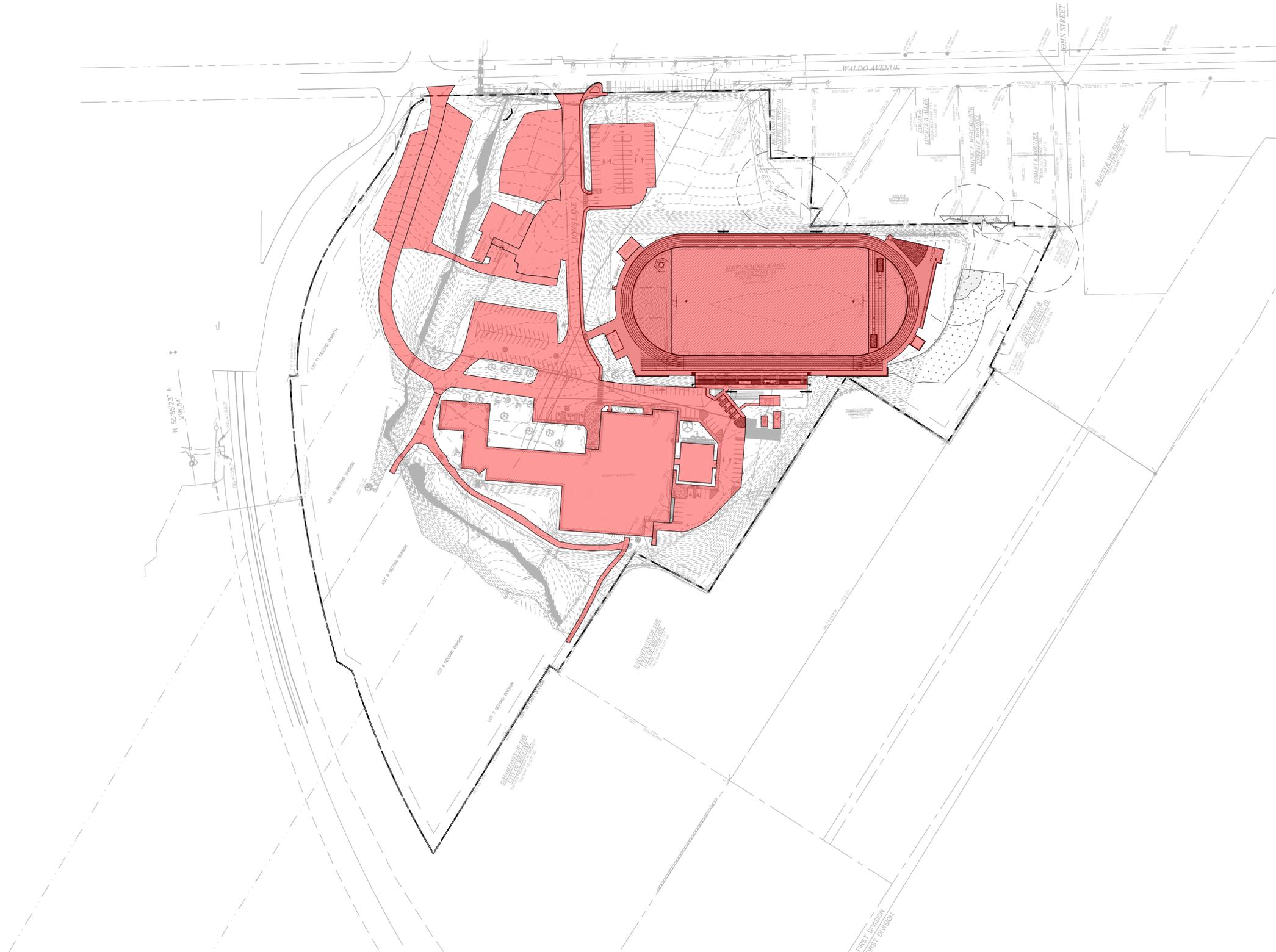
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**PROPOSED CONDITIONS LEGEND**

- PROPERTY LINE 
- IMPERVIOUS AREA 

**IMPERVIOUS AREAS**

AREA (AC)	DESCRIPTION
1.679	ROOFS
1.280	GRAVEL
5.010	PAVEMENT / PAVED
1.931	SYNTHETIC TURF
<b>9.90</b>	<b>TOTAL</b>



**CONSULTANTS**

- WETLAND DELINEATION -  
 HALEY WARD, INC.
- SURVEY -  
 E.S. COFFIN ENGINEERING & SURVEYING, INC.
- GEOTECHNICAL ENGINEER -  
 HALEY & ALDRICH, INC

**RSU 71 BELFAST AREA  
 HIGH SCHOOL**  
 Belfast, ME

Site Location of Development Act

Permitting Documents  
 April 25, 2025

REVISIONS:

NO.	DATE	DESCRIPTION

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 CHECKED: SRC/HG

SEAL:

SHEET TITLE:  
 PROPOSED CONDITIONS  
 IMPERVIOUS COVER

SHEET NO:  
**12-3**

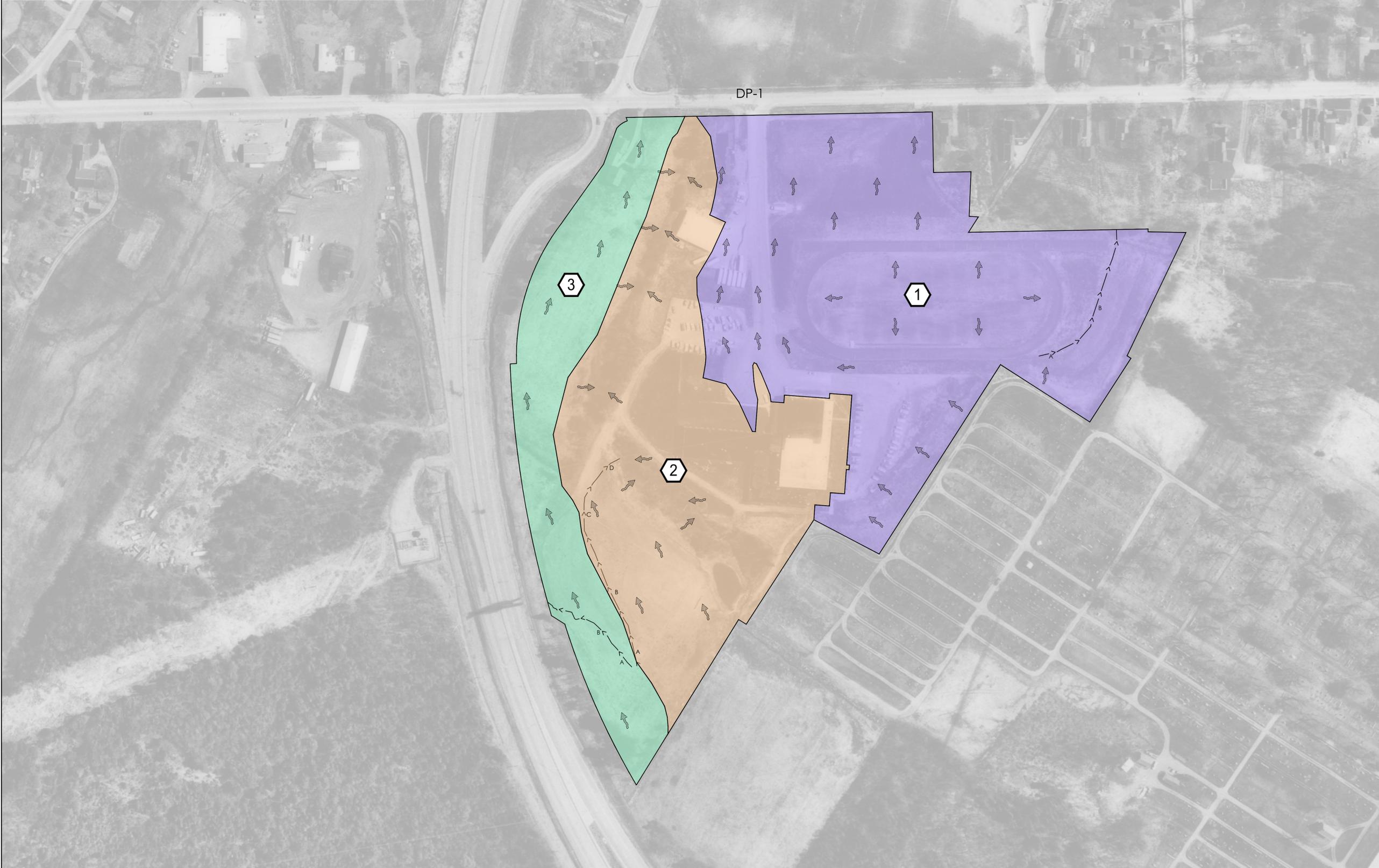
**FLOODING STANDARD ATTACHMENTS**

**EXISTING WATERSHED PLAN NOTES**

1. EXISTING CONDITIONS INFORMATION OBTAINED FROM PUBLICLY AVAILABLE HISTORICAL AERIAL INFORMATION, AERIAL DATED MAY 14, 1971.

**EXISTING WATERSHED PLAN LEGEND**

- PROPERTY LINE
- TIME OF CONCENTRATION
- FLOW ARROW
- DRAINAGE ANALYSIS POINT
- SUBCATCHMENT AREA 1
- SUBCATCHMENT AREA 2
- SUBCATCHMENT AREA 3



**CONSULTANTS**

WETLAND DELINEATION -  
 HALEY WARD, INC.

SURVEY -  
 E.S. COFFIN ENGINEERING & SURVEYING, INC.

GEOTECHNICAL ENGINEER -  
 HALEY & ALDRICH, INC.

**RSU 71 BELFAST AREA  
 HIGH SCHOOL**  
 Belfast, ME  
 Site Location of Development Act

Permitting Documents  
 April 25, 2025

REVISIONS:

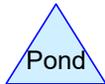
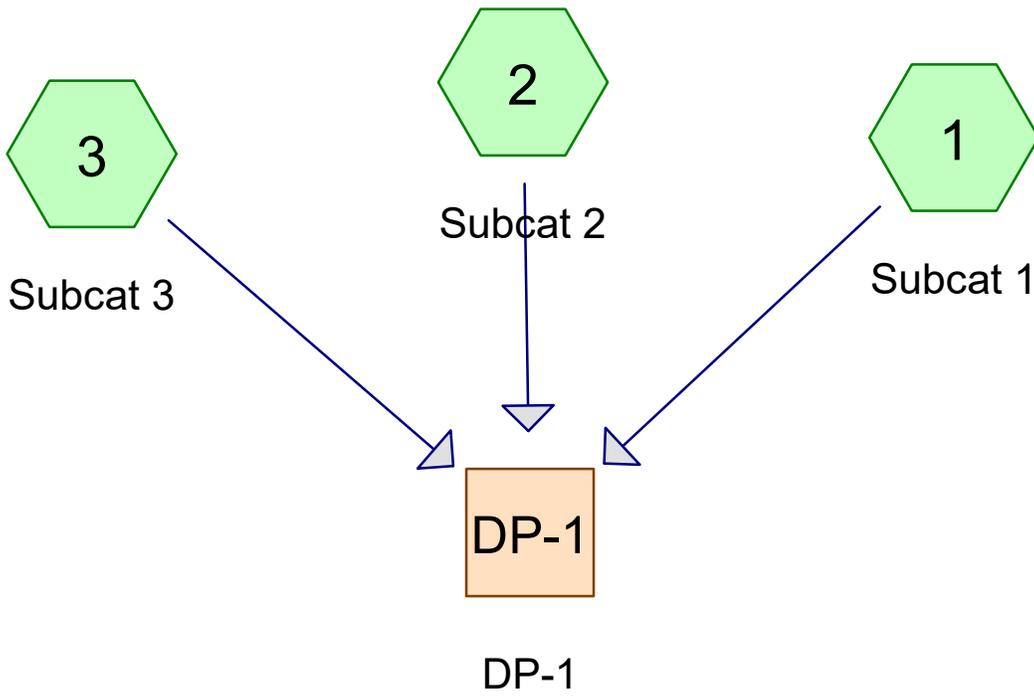
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 DRAWN: BJM  
 CHECKED: SRC/HG

SEAL:

SHEET TITLE:  
 EXISTING WATERSHED  
 PLAN (1970)

SHEET NO:  
**WS1.1**



## 24002-HydroCAD-Ex\_Cond\_1970

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Page 2

### Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	2.90	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.20	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.20	2

**24002-HydroCAD-Ex\_Cond\_1970**

Type III 24-hr 2-YR Rainfall=2.90"

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Page 3

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Subcat 1**

Runoff Area=12.561 ac 15.41% Impervious Runoff Depth=1.37"  
Flow Length=354' Tc=13.5 min CN=83 Runoff=15.73 cfs 1.430 af

**Subcatchment 2: Subcat 2**

Runoff Area=9.064 ac 15.58% Impervious Runoff Depth=1.30"  
Flow Length=541' Tc=14.2 min CN=82 Runoff=10.56 cfs 0.983 af

**Subcatchment 3: Subcat 3**

Runoff Area=4.437 ac 1.76% Impervious Runoff Depth=1.18"  
Flow Length=301' Tc=11.3 min CN=80 Runoff=5.02 cfs 0.435 af

**Reach DP-1: DP-1**

Inflow=31.15 cfs 2.848 af  
Outflow=31.15 cfs 2.848 af

**Total Runoff Area = 26.062 ac Runoff Volume = 2.848 af Average Runoff Depth = 1.31"**  
**86.86% Pervious = 22.637 ac 13.14% Impervious = 3.426 ac**

**Summary for Subcatchment 1: Subcat 1**

Runoff = 15.73 cfs @ 12.19 hrs, Volume= 1.430 af, Depth= 1.37"  
 Routed to Reach DP-1 : DP-1

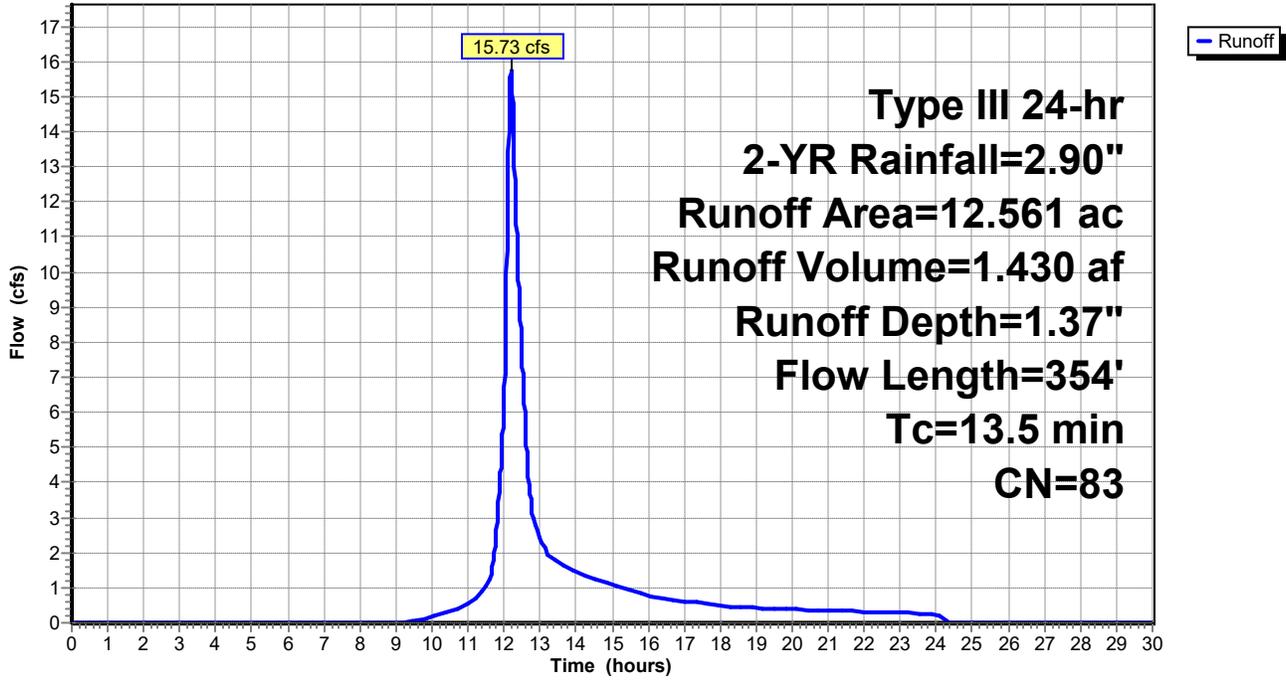
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

Area (ac)	CN	Description
10.541	80	>75% Grass cover, Good, HSG D
0.046	73	Brush, Good, HSG D
0.007	89	Dirt roads, HSG D
0.031	91	Gravel roads, HSG D
1.865	98	Paved parking, HSG D
0.007	98	Roofs, HSG D
0.002	98	Unconnected pavement, HSG D
0.061	98	Unconnected roofs, HSG D
12.561	83	Weighted Average
10.626		84.59% Pervious Area
1.935		15.41% Impervious Area
0.063		3.27% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0190	0.09		<b>Sheet Flow, A</b>
					Grass: Dense n= 0.240 P2= 2.90"
4.7	304	0.0240	1.08		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
13.5	354	Total			

### Subcatchment 1: Subcat 1

Hydrograph



**Summary for Subcatchment 2: Subcat 2**

Runoff = 10.56 cfs @ 12.20 hrs, Volume= 0.983 af, Depth= 1.30"  
 Routed to Reach DP-1 : DP-1

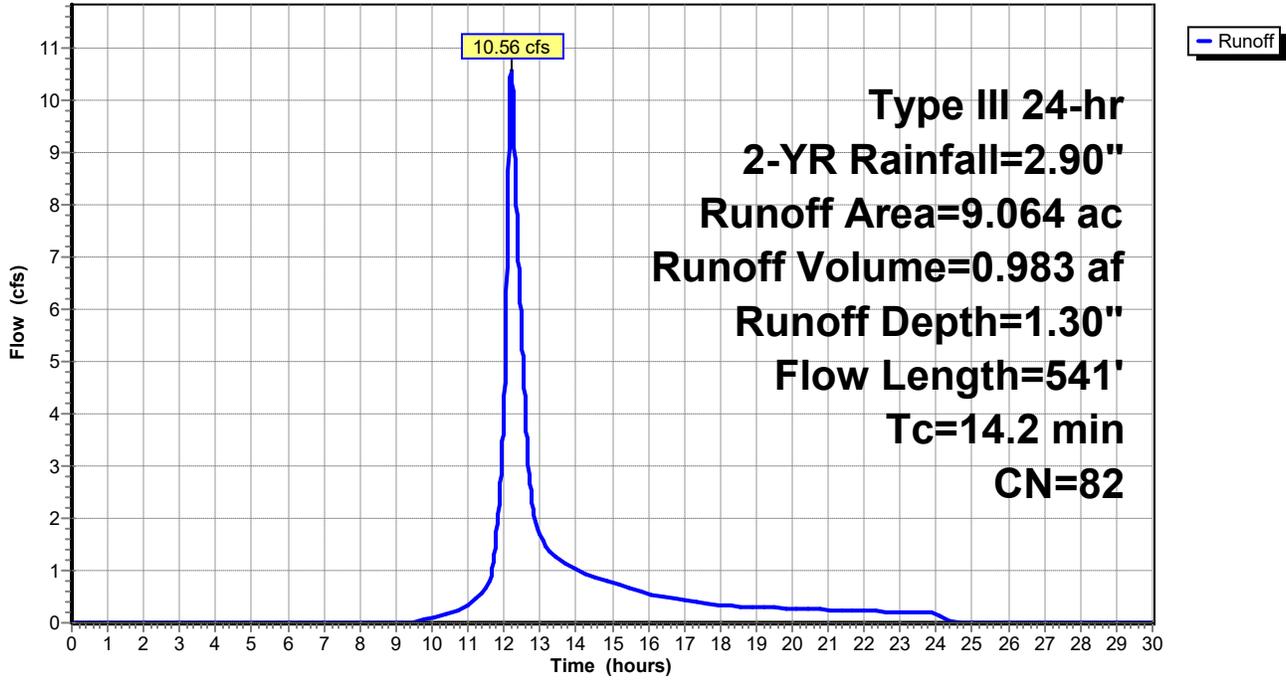
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

Area (ac)	CN	Description
5.295	80	>75% Grass cover, Good, HSG D
1.950	73	Brush, Good, HSG D
0.407	89	Dirt roads, HSG D
0.085	98	Paved parking, HSG D
1.328	98	Roofs, HSG D
9.064	82	Weighted Average
7.652		84.42% Pervious Area
1.413		15.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0168	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
6.4	302	0.0128	0.79		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
1.4	167	0.0770	1.94		<b>Shallow Concentrated Flow, C</b>
					Short Grass Pasture Kv= 7.0 fps
0.1	22	0.3560	2.98		<b>Shallow Concentrated Flow, D</b>
					Woodland Kv= 5.0 fps
14.2	541	Total			

Subcatchment 2: Subcat 2

Hydrograph



**Summary for Subcatchment 3: Subcat 3**

Runoff = 5.02 cfs @ 12.16 hrs, Volume= 0.435 af, Depth= 1.18"  
 Routed to Reach DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

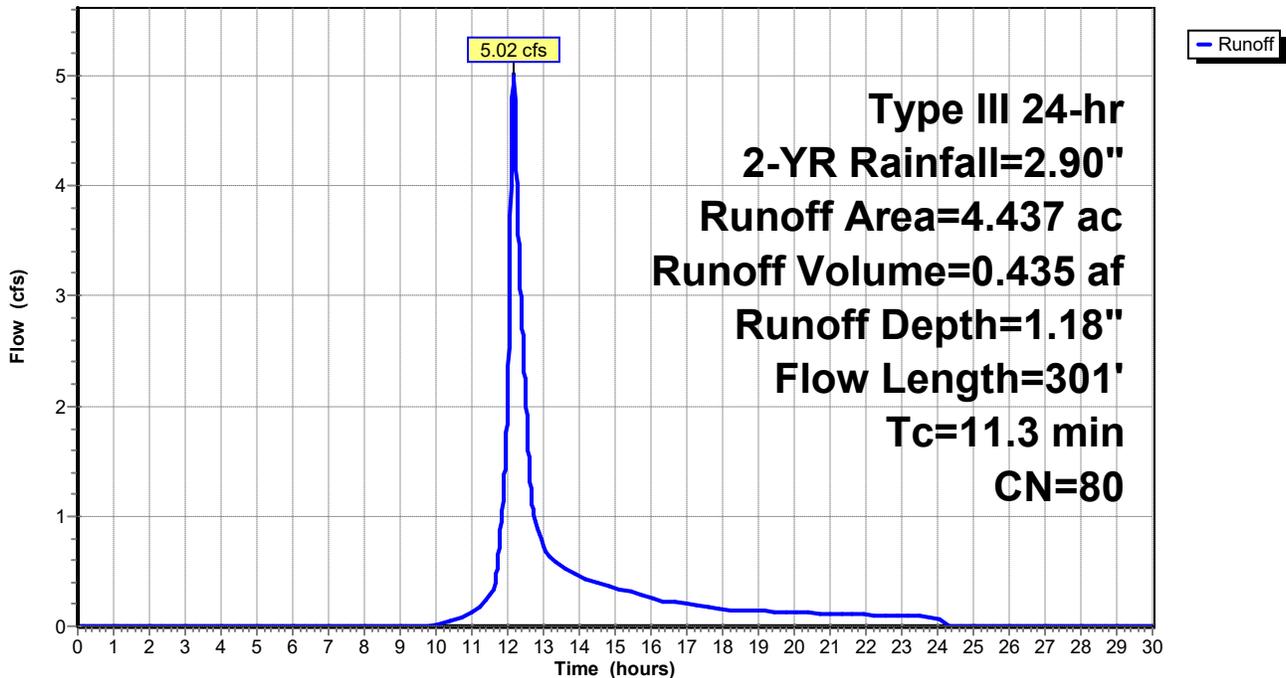
Area (ac)	CN	Description
4.358	80	>75% Grass cover, Good, HSG D
0.001	73	Brush, Good, HSG D
0.000	89	Dirt roads, HSG D
0.078	98	Unconnected roofs, HSG D

4.437	80	Weighted Average
4.359		98.24% Pervious Area
0.078		1.76% Impervious Area
0.078		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0167	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
4.9	251	0.0150	0.86		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
11.3	301	Total			

**Subcatchment 3: Subcat 3**

Hydrograph



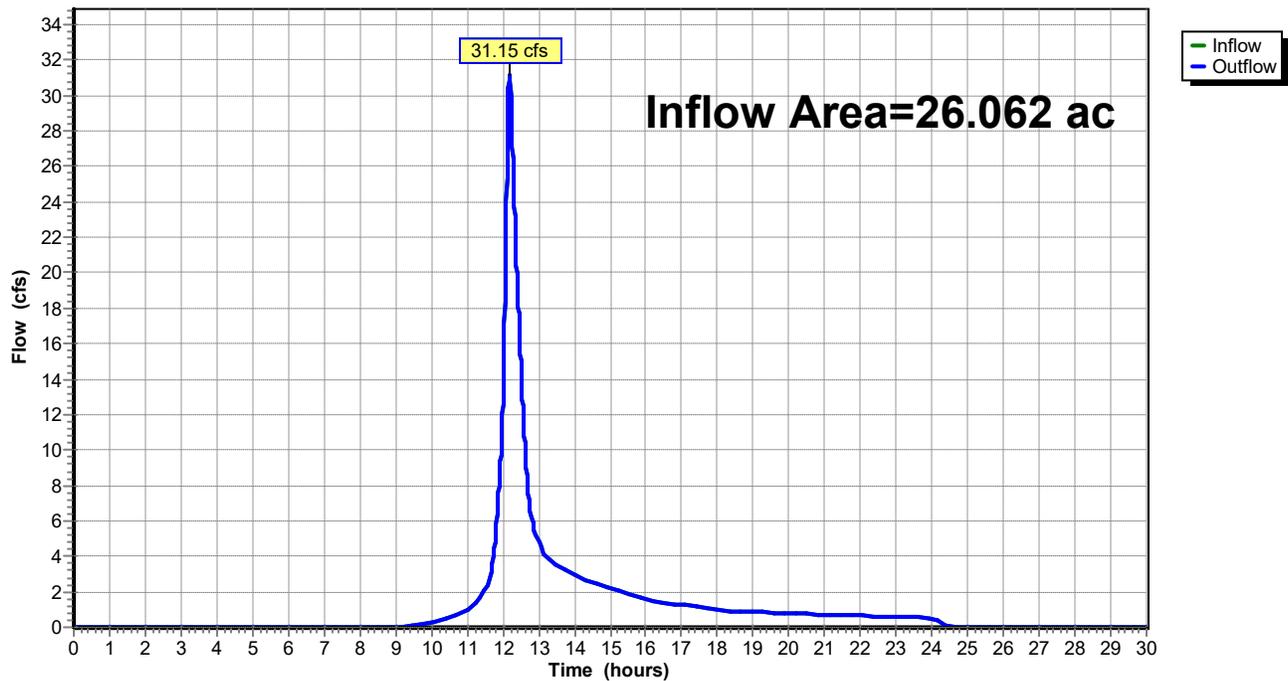
### Summary for Reach DP-1: DP-1

Inflow Area = 26.062 ac, 13.14% Impervious, Inflow Depth = 1.31" for 2-YR event  
Inflow = 31.15 cfs @ 12.19 hrs, Volume= 2.848 af  
Outflow = 31.15 cfs @ 12.19 hrs, Volume= 2.848 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

### Reach DP-1: DP-1

#### Hydrograph



**24002-HydroCAD-Ex\_Cond\_1970**

Type III 24-hr 10-YR Rainfall=4.20"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Subcat 1**

Runoff Area=12.561 ac 15.41% Impervious Runoff Depth=2.46"  
Flow Length=354' Tc=13.5 min CN=83 Runoff=28.54 cfs 2.576 af

**Subcatchment 2: Subcat 2**

Runoff Area=9.064 ac 15.58% Impervious Runoff Depth=2.37"  
Flow Length=541' Tc=14.2 min CN=82 Runoff=19.52 cfs 1.794 af

**Subcatchment 3: Subcat 3**

Runoff Area=4.437 ac 1.76% Impervious Runoff Depth=2.21"  
Flow Length=301' Tc=11.3 min CN=80 Runoff=9.62 cfs 0.816 af

**Reach DP-1: DP-1**

Inflow=57.35 cfs 5.186 af  
Outflow=57.35 cfs 5.186 af

**Total Runoff Area = 26.062 ac Runoff Volume = 5.186 af Average Runoff Depth = 2.39"**  
**86.86% Pervious = 22.637 ac 13.14% Impervious = 3.426 ac**

**Summary for Subcatchment 1: Subcat 1**

Runoff = 28.54 cfs @ 12.19 hrs, Volume= 2.576 af, Depth= 2.46"  
 Routed to Reach DP-1 : DP-1

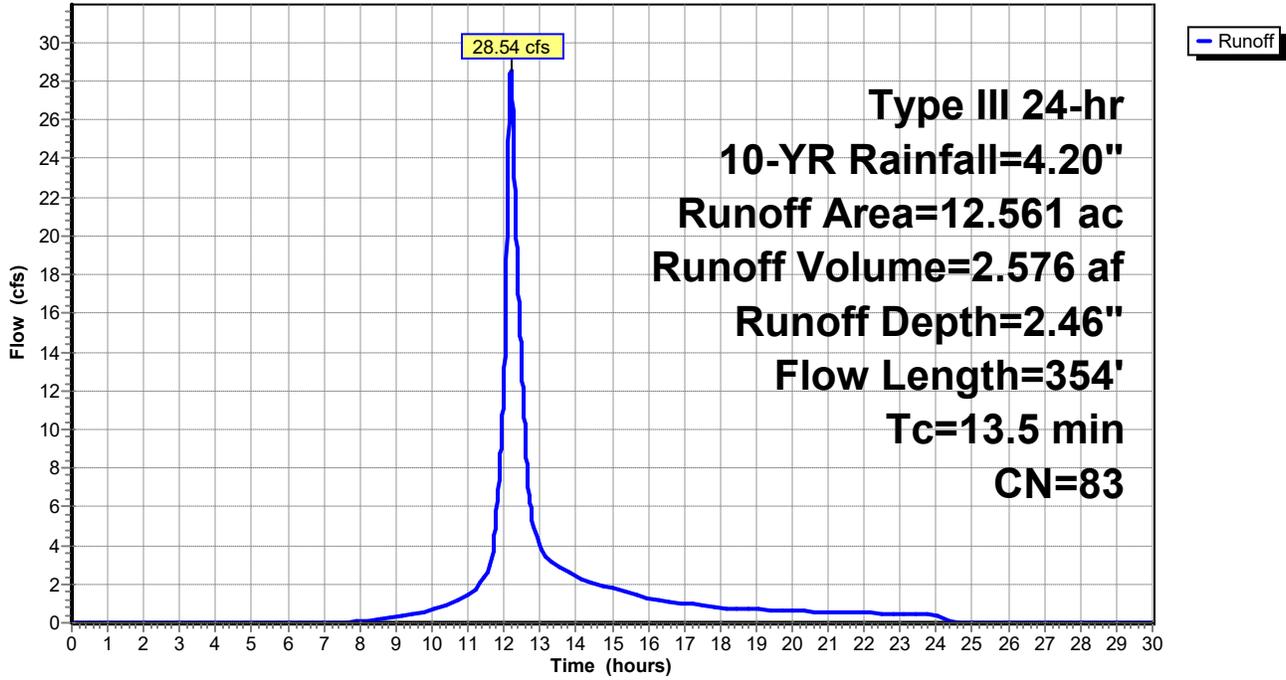
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
10.541	80	>75% Grass cover, Good, HSG D
0.046	73	Brush, Good, HSG D
0.007	89	Dirt roads, HSG D
0.031	91	Gravel roads, HSG D
1.865	98	Paved parking, HSG D
0.007	98	Roofs, HSG D
0.002	98	Unconnected pavement, HSG D
0.061	98	Unconnected roofs, HSG D
12.561	83	Weighted Average
10.626		84.59% Pervious Area
1.935		15.41% Impervious Area
0.063		3.27% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0190	0.09		<b>Sheet Flow, A</b>
					Grass: Dense n= 0.240 P2= 2.90"
4.7	304	0.0240	1.08		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
13.5	354	Total			

Subcatchment 1: Subcat 1

Hydrograph



**Summary for Subcatchment 2: Subcat 2**

Runoff = 19.52 cfs @ 12.20 hrs, Volume= 1.794 af, Depth= 2.37"  
 Routed to Reach DP-1 : DP-1

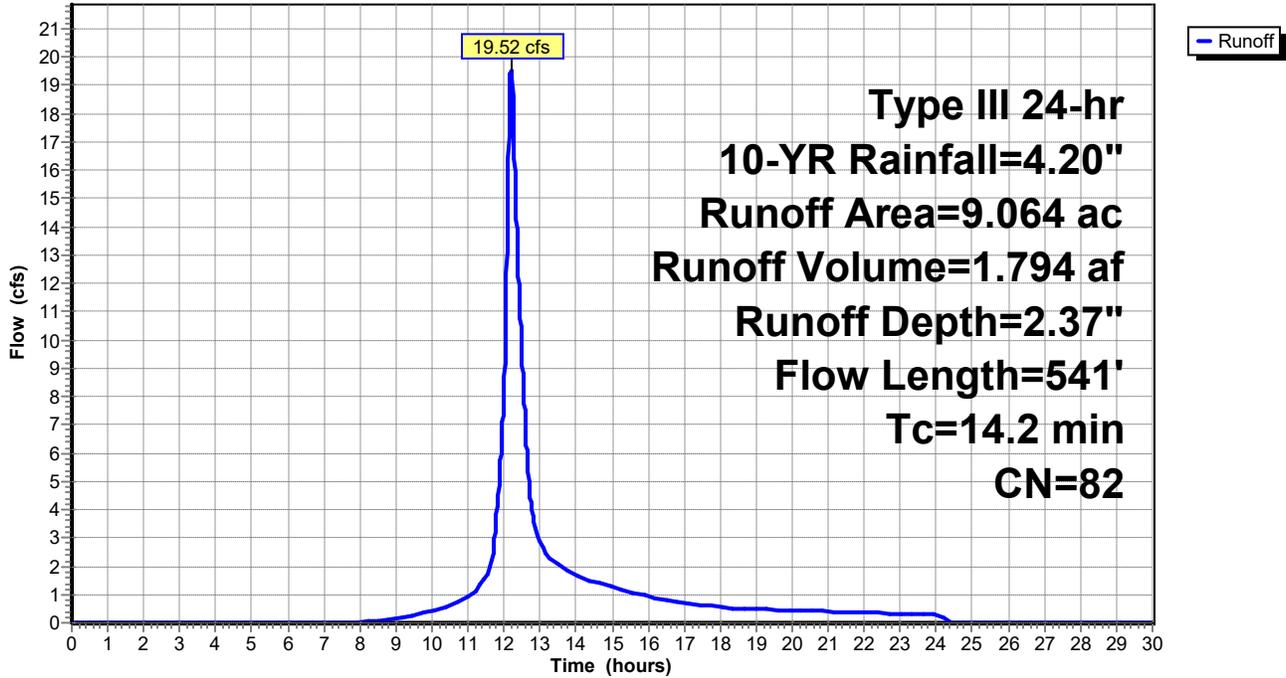
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
5.295	80	>75% Grass cover, Good, HSG D
1.950	73	Brush, Good, HSG D
0.407	89	Dirt roads, HSG D
0.085	98	Paved parking, HSG D
1.328	98	Roofs, HSG D
9.064	82	Weighted Average
7.652		84.42% Pervious Area
1.413		15.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0168	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
6.4	302	0.0128	0.79		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
1.4	167	0.0770	1.94		<b>Shallow Concentrated Flow, C</b>
					Short Grass Pasture Kv= 7.0 fps
0.1	22	0.3560	2.98		<b>Shallow Concentrated Flow, D</b>
					Woodland Kv= 5.0 fps
14.2	541	Total			

Subcatchment 2: Subcat 2

Hydrograph



**Summary for Subcatchment 3: Subcat 3**

Runoff = 9.62 cfs @ 12.16 hrs, Volume= 0.816 af, Depth= 2.21"  
 Routed to Reach DP-1 : DP-1

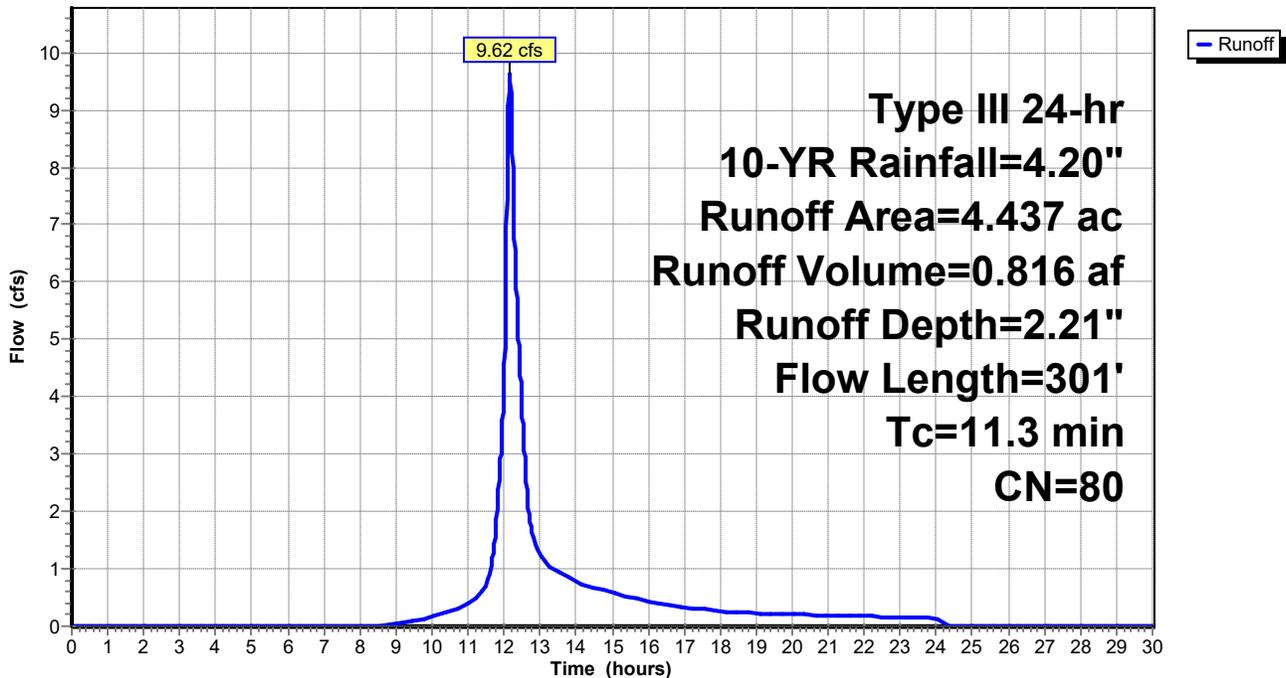
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
4.358	80	>75% Grass cover, Good, HSG D
0.001	73	Brush, Good, HSG D
0.000	89	Dirt roads, HSG D
0.078	98	Unconnected roofs, HSG D
4.437	80	Weighted Average
4.359		98.24% Pervious Area
0.078		1.76% Impervious Area
0.078		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0167	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
4.9	251	0.0150	0.86		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
11.3	301	Total			

**Subcatchment 3: Subcat 3**

Hydrograph



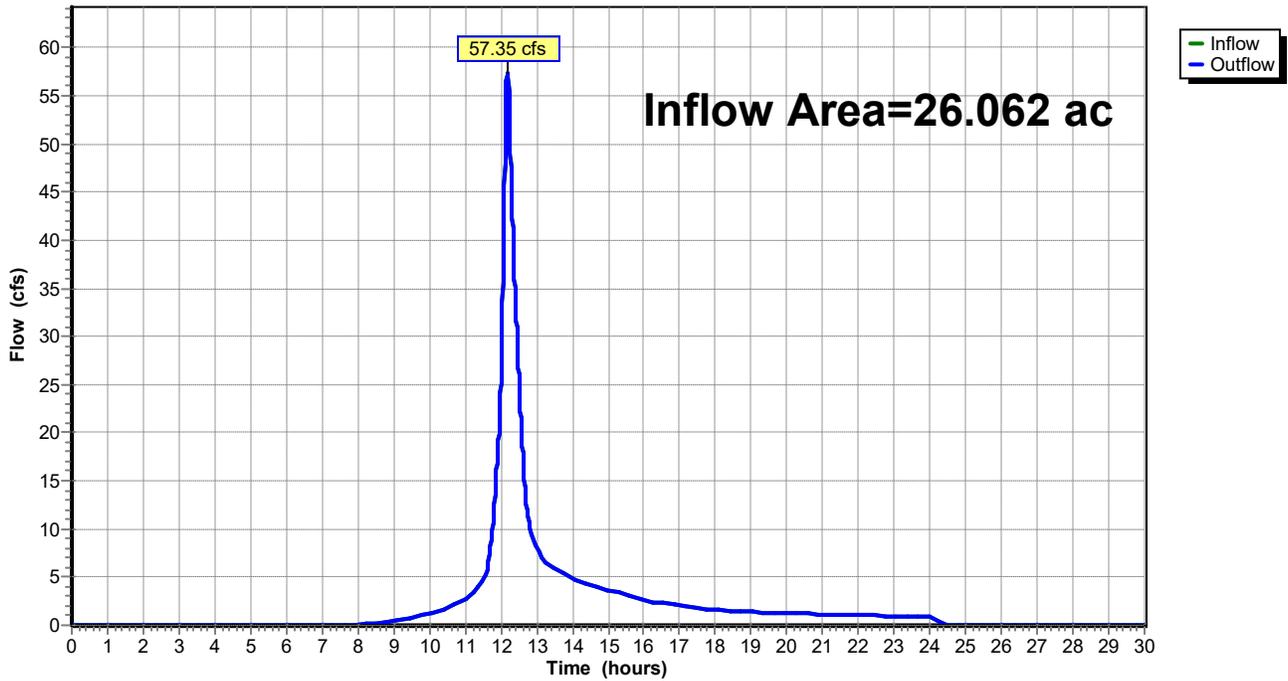
### Summary for Reach DP-1: DP-1

Inflow Area = 26.062 ac, 13.14% Impervious, Inflow Depth = 2.39" for 10-YR event  
Inflow = 57.35 cfs @ 12.18 hrs, Volume= 5.186 af  
Outflow = 57.35 cfs @ 12.18 hrs, Volume= 5.186 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

### Reach DP-1: DP-1

Hydrograph



**24002-HydroCAD-Ex\_Cond\_1970**

Type III 24-hr 25-YR Rainfall=5.20"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Subcat 1**

Runoff Area=12.561 ac 15.41% Impervious Runoff Depth=3.36"  
Flow Length=354' Tc=13.5 min CN=83 Runoff=38.75 cfs 3.513 af

**Subcatchment 2: Subcat 2**

Runoff Area=9.064 ac 15.58% Impervious Runoff Depth=3.26"  
Flow Length=541' Tc=14.2 min CN=82 Runoff=26.72 cfs 2.461 af

**Subcatchment 3: Subcat 3**

Runoff Area=4.437 ac 1.76% Impervious Runoff Depth=3.07"  
Flow Length=301' Tc=11.3 min CN=80 Runoff=13.38 cfs 1.134 af

**Reach DP-1: DP-1**

Inflow=78.41 cfs 7.108 af  
Outflow=78.41 cfs 7.108 af

**Total Runoff Area = 26.062 ac Runoff Volume = 7.108 af Average Runoff Depth = 3.27"**  
**86.86% Pervious = 22.637 ac 13.14% Impervious = 3.426 ac**

**Summary for Subcatchment 1: Subcat 1**

Runoff = 38.75 cfs @ 12.18 hrs, Volume= 3.513 af, Depth= 3.36"  
 Routed to Reach DP-1 : DP-1

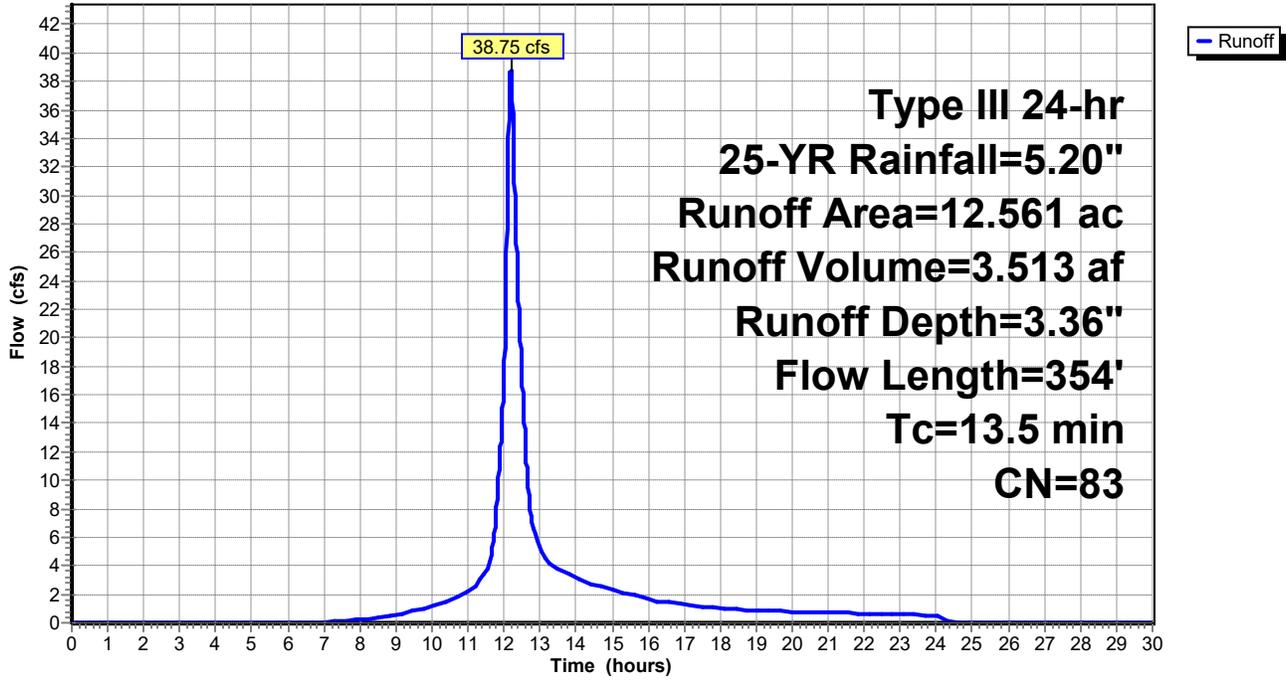
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

Area (ac)	CN	Description
10.541	80	>75% Grass cover, Good, HSG D
0.046	73	Brush, Good, HSG D
0.007	89	Dirt roads, HSG D
0.031	91	Gravel roads, HSG D
1.865	98	Paved parking, HSG D
0.007	98	Roofs, HSG D
0.002	98	Unconnected pavement, HSG D
0.061	98	Unconnected roofs, HSG D
12.561	83	Weighted Average
10.626		84.59% Pervious Area
1.935		15.41% Impervious Area
0.063		3.27% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0190	0.09		<b>Sheet Flow, A</b>
					Grass: Dense n= 0.240 P2= 2.90"
4.7	304	0.0240	1.08		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
13.5	354	Total			

Subcatchment 1: Subcat 1

Hydrograph



**Summary for Subcatchment 2: Subcat 2**

Runoff = 26.72 cfs @ 12.19 hrs, Volume= 2.461 af, Depth= 3.26"  
 Routed to Reach DP-1 : DP-1

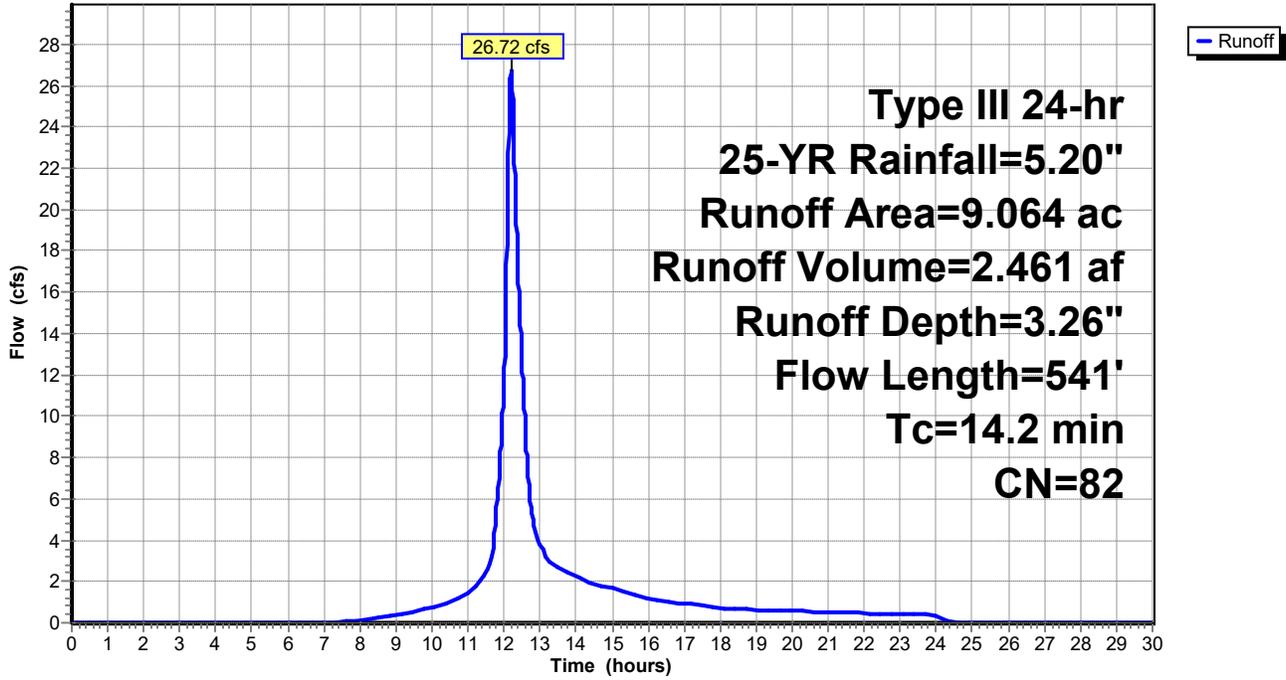
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

Area (ac)	CN	Description
5.295	80	>75% Grass cover, Good, HSG D
1.950	73	Brush, Good, HSG D
0.407	89	Dirt roads, HSG D
0.085	98	Paved parking, HSG D
1.328	98	Roofs, HSG D
9.064	82	Weighted Average
7.652		84.42% Pervious Area
1.413		15.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0168	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
6.4	302	0.0128	0.79		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
1.4	167	0.0770	1.94		<b>Shallow Concentrated Flow, C</b>
					Short Grass Pasture Kv= 7.0 fps
0.1	22	0.3560	2.98		<b>Shallow Concentrated Flow, D</b>
					Woodland Kv= 5.0 fps
14.2	541	Total			

### Subcatchment 2: Subcat 2

Hydrograph



**Summary for Subcatchment 3: Subcat 3**

Runoff = 13.38 cfs @ 12.16 hrs, Volume= 1.134 af, Depth= 3.07"  
 Routed to Reach DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

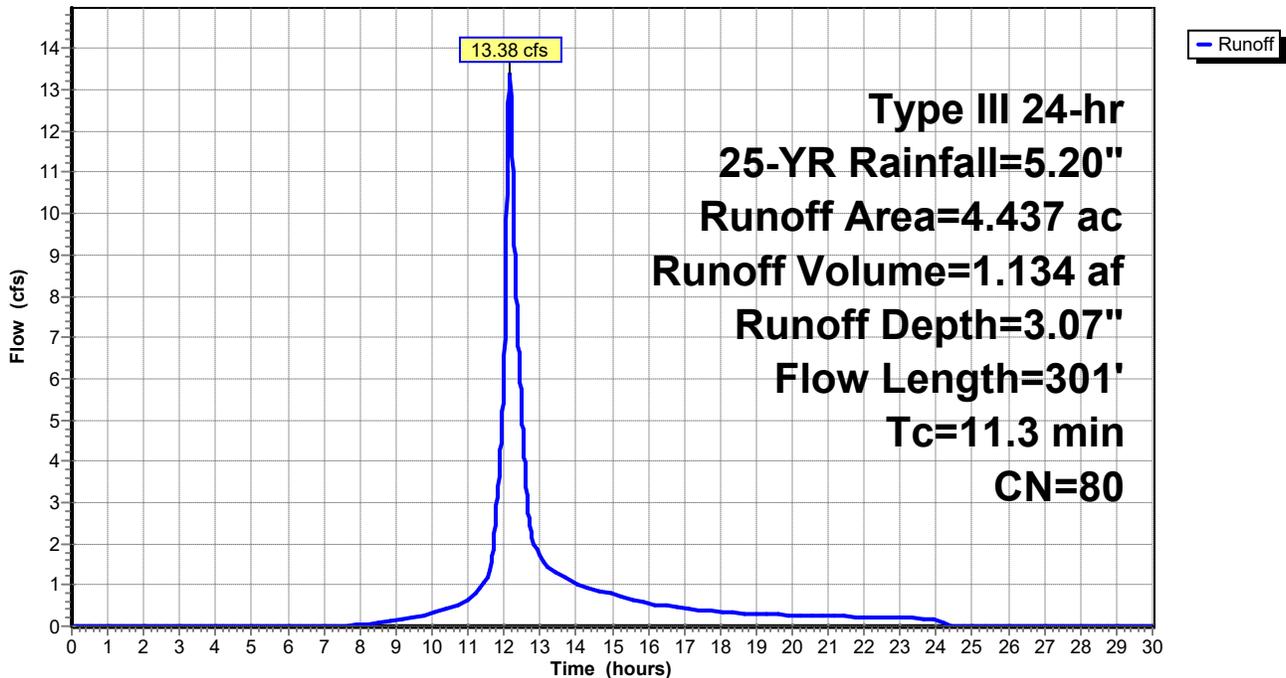
Area (ac)	CN	Description
4.358	80	>75% Grass cover, Good, HSG D
0.001	73	Brush, Good, HSG D
0.000	89	Dirt roads, HSG D
0.078	98	Unconnected roofs, HSG D

4.437	80	Weighted Average
4.359		98.24% Pervious Area
0.078		1.76% Impervious Area
0.078		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0167	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
4.9	251	0.0150	0.86		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
11.3	301	Total			

**Subcatchment 3: Subcat 3**

Hydrograph



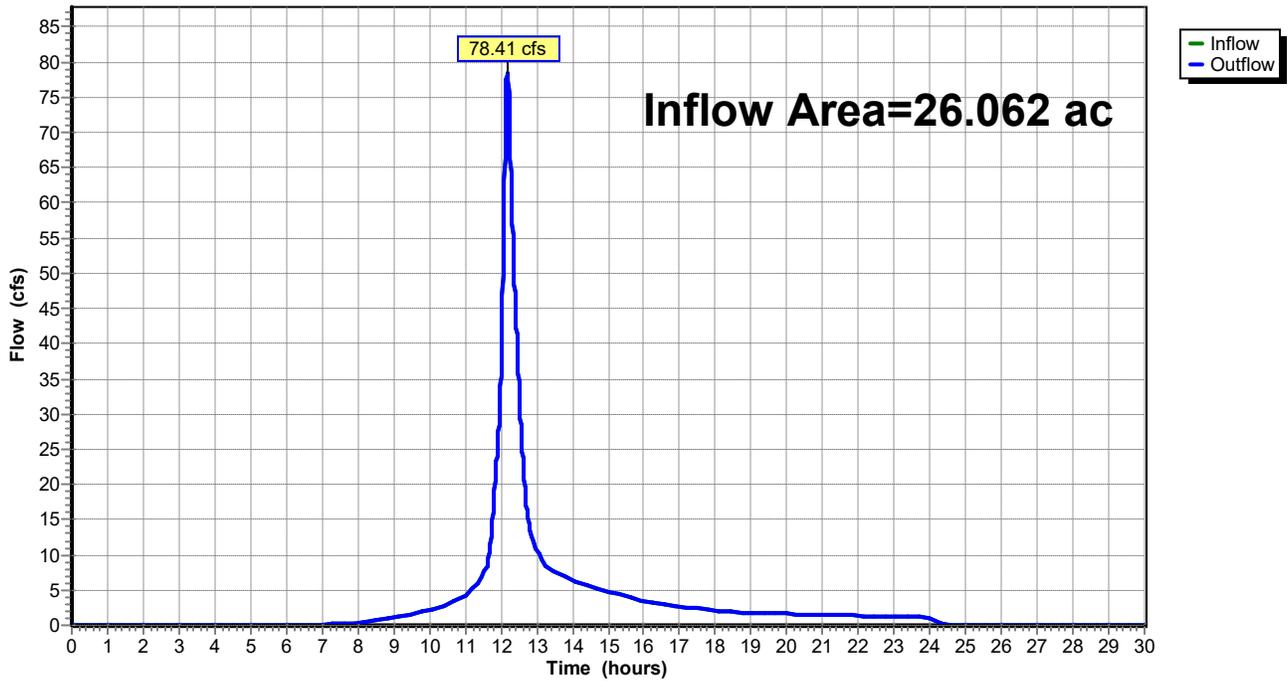
### Summary for Reach DP-1: DP-1

Inflow Area = 26.062 ac, 13.14% Impervious, Inflow Depth = 3.27" for 25-YR event  
Inflow = 78.41 cfs @ 12.18 hrs, Volume= 7.108 af  
Outflow = 78.41 cfs @ 12.18 hrs, Volume= 7.108 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

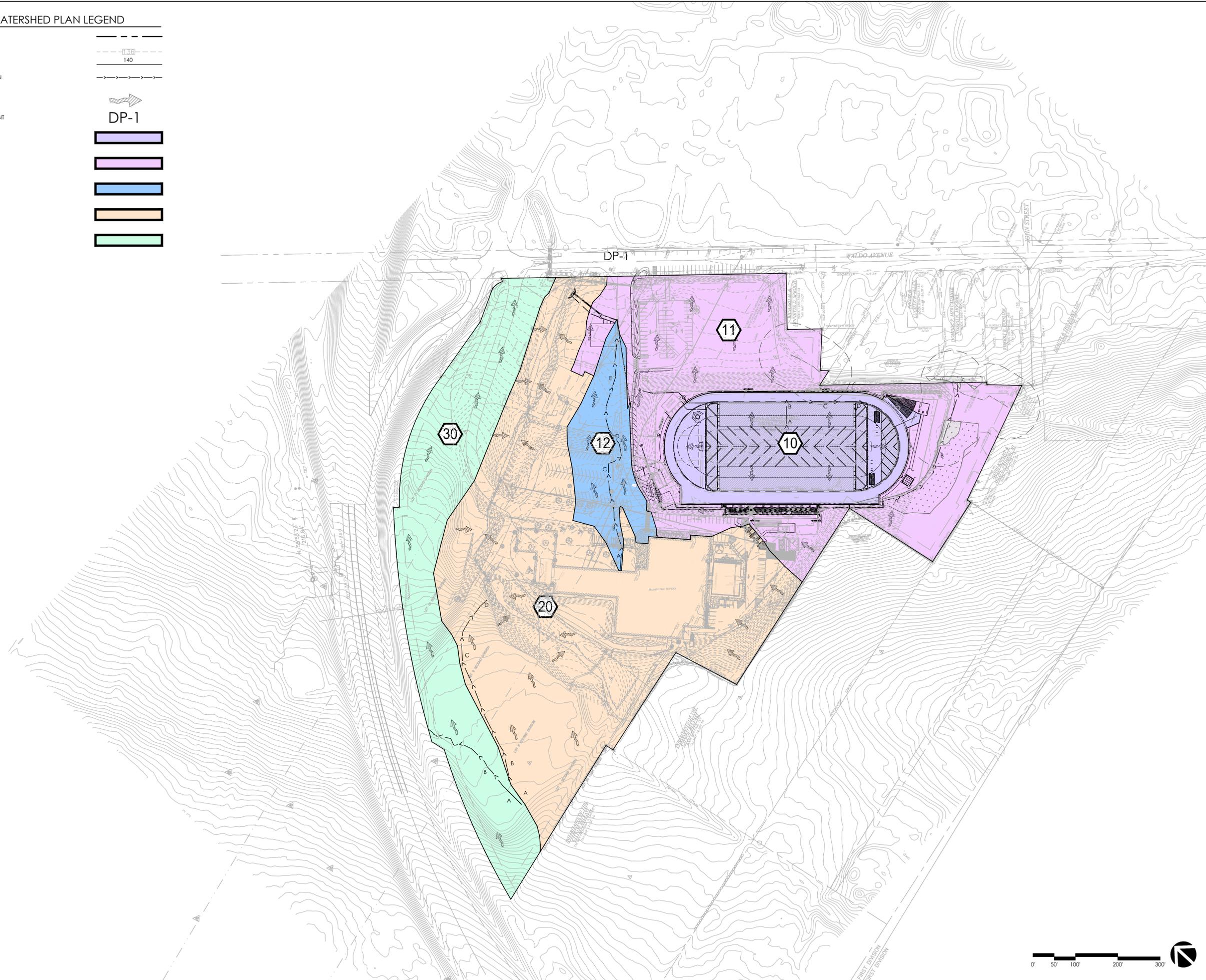
### Reach DP-1: DP-1

#### Hydrograph



PROPOSED WATERSHED PLAN LEGEND

- PROPERTY LINE
- EXISTING 1' CONTOUR
- PROPOSED 1' CONTOUR
- TIME OF CONCENTRATION
- FLOW ARROW
- DRAINAGE ANALYSIS POINT
- SUBCATCHMENT AREA 10
- SUBCATCHMENT AREA 11
- SUBCATCHMENT AREA 12
- SUBCATCHMENT AREA 20
- SUBCATCHMENT AREA 30



- CONSULTANTS**
- WETLAND DELINEATION -  
HALEY WARD, INC.
  - SURVEY -  
E.S. COFFIN ENGINEERING & SURVEYING, INC.
  - GEOTECHNICAL ENGINEER -  
HALEY & ALDRICH, INC.

**RSU 71 BELFAST AREA  
 HIGH SCHOOL**  
 Belfast, ME  
 Site Location of Development Act

Permitting Documents  
 April 25, 2025

REVISIONS:

NO.	DATE	DESCRIPTION

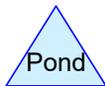
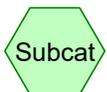
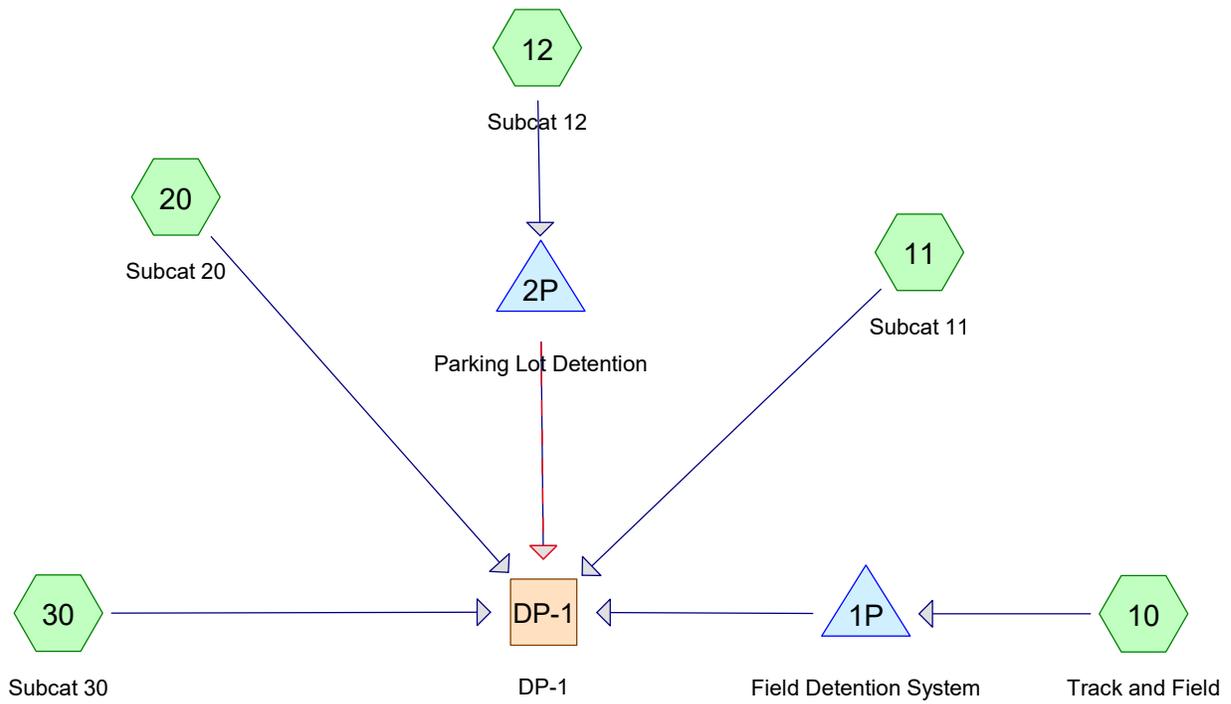
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 CHECKED: SRC/HG

SEAL:

SHEET TITLE:  
 PROPOSED WATERSHED  
 PLAN

SHEET NO:  
**WS2.1**





**Routing Diagram for 24002-HydroCAD-Proposed\_Conditions\_Flooding**

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## 24002-HydroCAD-Proposed\_Conditions\_Flooding

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Page 2

### Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	2.90	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.20	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.20	2

**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 2-YR Rainfall=2.90"

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Page 3

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 10: Track and Field** Runoff Area=3.228 ac 100.00% Impervious Runoff Depth=2.67"  
Flow Length=328' Tc=11.7 min CN=98 Runoff=7.57 cfs 0.718 af

**Subcatchment 11: Subcat 11** Runoff Area=6.533 ac 23.11% Impervious Runoff Depth=1.37"  
Flow Length=354' Tc=19.7 min CN=83 Runoff=7.06 cfs 0.744 af

**Subcatchment 12: Subcat 12** Runoff Area=1.380 ac 73.74% Impervious Runoff Depth=2.25"  
Flow Length=645' Tc=12.5 min CN=94 Runoff=2.86 cfs 0.259 af

**Subcatchment 20: Subcat 20** Runoff Area=10.484 ac 24.73% Impervious Runoff Depth=1.37"  
Flow Length=541' Tc=14.2 min CN=83 Runoff=12.89 cfs 1.194 af

**Subcatchment 30: Subcat 30** Runoff Area=4.437 ac 6.15% Impervious Runoff Depth=1.24"  
Flow Length=301' Tc=11.3 min CN=81 Runoff=5.31 cfs 0.457 af

**Reach DP-1: DP-1** Inflow=24.48 cfs 2.654 af  
Outflow=24.48 cfs 2.654 af

**Pond 1P: Field Detention System** Peak Elev=133.94' Storage=29,055 cf Inflow=7.57 cfs 0.718 af  
Discarded=0.03 cfs 0.110 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.110 af

**Pond 2P: Parking Lot Detention** Peak Elev=112.78' Storage=4,206 cf Inflow=2.86 cfs 0.259 af  
Primary=0.19 cfs 0.216 af Secondary=1.41 cfs 0.042 af Outflow=1.60 cfs 0.258 af

**Total Runoff Area = 26.062 ac Runoff Volume = 3.372 af Average Runoff Depth = 1.55"**  
**66.92% Pervious = 17.442 ac 33.08% Impervious = 8.621 ac**

**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 2-YR Rainfall=2.90"

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**Summary for Subcatchment 10: Track and Field**

Runoff = 7.57 cfs @ 12.15 hrs, Volume= 0.718 af, Depth= 2.67"

Routed to Pond 1P : Field Detention System

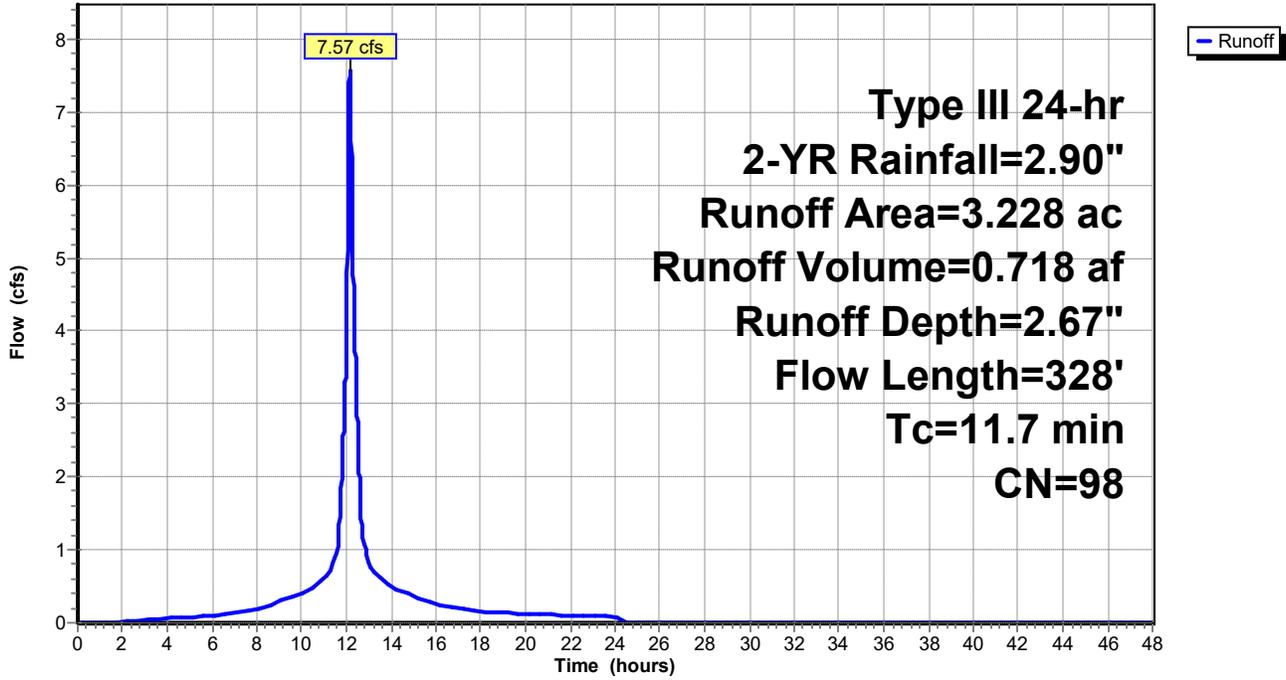
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

Area (ac)	CN	Description
0.000	80	>75% Grass cover, Good, HSG D
3.228	98	Paved parking, HSG D
3.228	98	Weighted Average
0.000		0.00% Pervious Area
3.228		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0075	0.10		<b>Sheet Flow, A</b> Grass: Short n= 0.150 P2= 2.90"
1.5	55	0.0075	0.61		<b>Shallow Concentrated Flow, B</b> Short Grass Pasture Kv= 7.0 fps
1.2	190	0.0100	2.55	0.42	<b>Parabolic Channel, C</b> W=0.33' D=0.74' Area=0.2 sf Perim=1.5' n= 0.013 Corrugated PE, smooth interior
0.2	33	0.0050	2.45	0.85	<b>Pipe Channel, D</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013 Corrugated PE, smooth interior
11.7	328	Total			

Subcatchment 10: Track and Field

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 2-YR Rainfall=2.90"

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**Summary for Subcatchment 11: Subcat 11**

Runoff = 7.06 cfs @ 12.28 hrs, Volume= 0.744 af, Depth= 1.37"  
 Routed to Reach DP-1 : DP-1

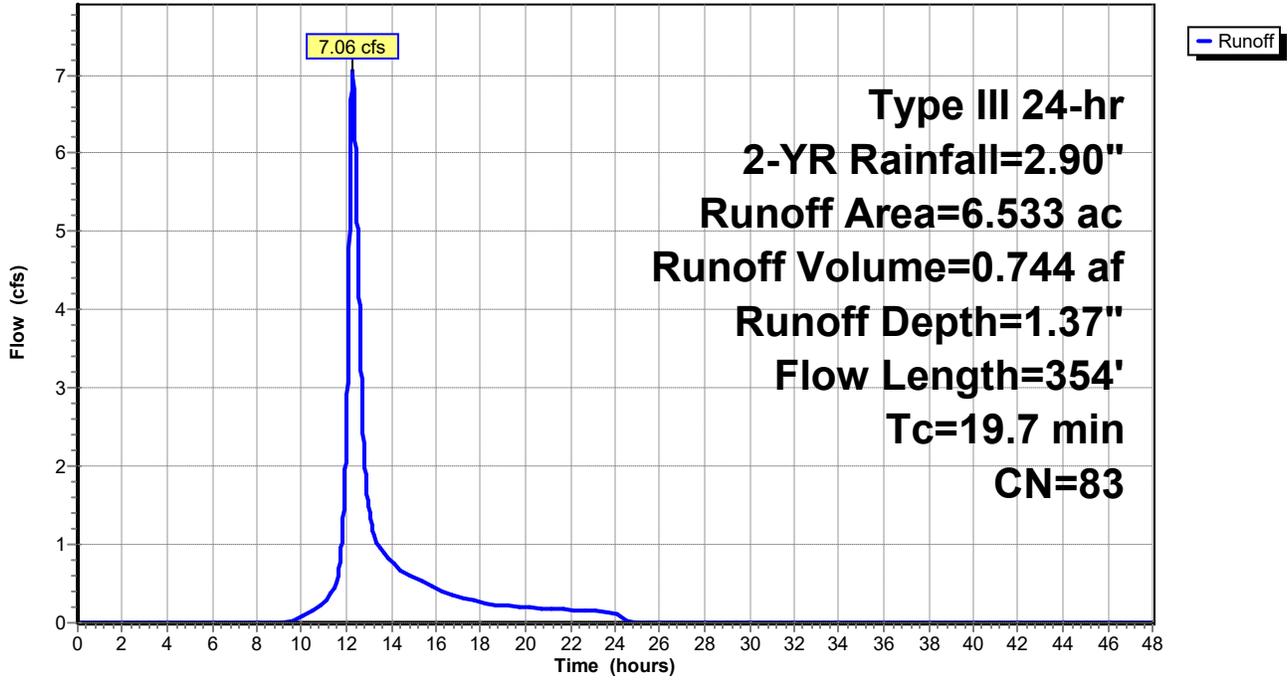
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

Area (ac)	CN	Description
3.402	80	>75% Grass cover, Good, HSG D
1.397	73	Brush, Good, HSG D
0.004	91	Gravel roads, HSG D
0.220	96	Gravel surface, HSG D
1.418	98	Paved parking, HSG D
0.000	98	Roofs, HSG D
0.006	98	Unconnected pavement, HSG D
0.086	98	Unconnected roofs, HSG D
6.533	83	Weighted Average
5.023		76.89% Pervious Area
1.510		23.11% Impervious Area
0.092		6.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0190	0.06		<b>Sheet Flow, A</b>
					Woods: Light underbrush n= 0.400 P2= 2.90"
6.5	304	0.0240	0.77		<b>Shallow Concentrated Flow, B</b>
					Woodland Kv= 5.0 fps
19.7	354	Total			

Subcatchment 11: Subcat 11

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 2-YR Rainfall=2.90"

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**Summary for Subcatchment 12: Subcat 12**

Runoff = 2.86 cfs @ 12.17 hrs, Volume= 0.259 af, Depth= 2.25"

Routed to Pond 2P : Parking Lot Detention

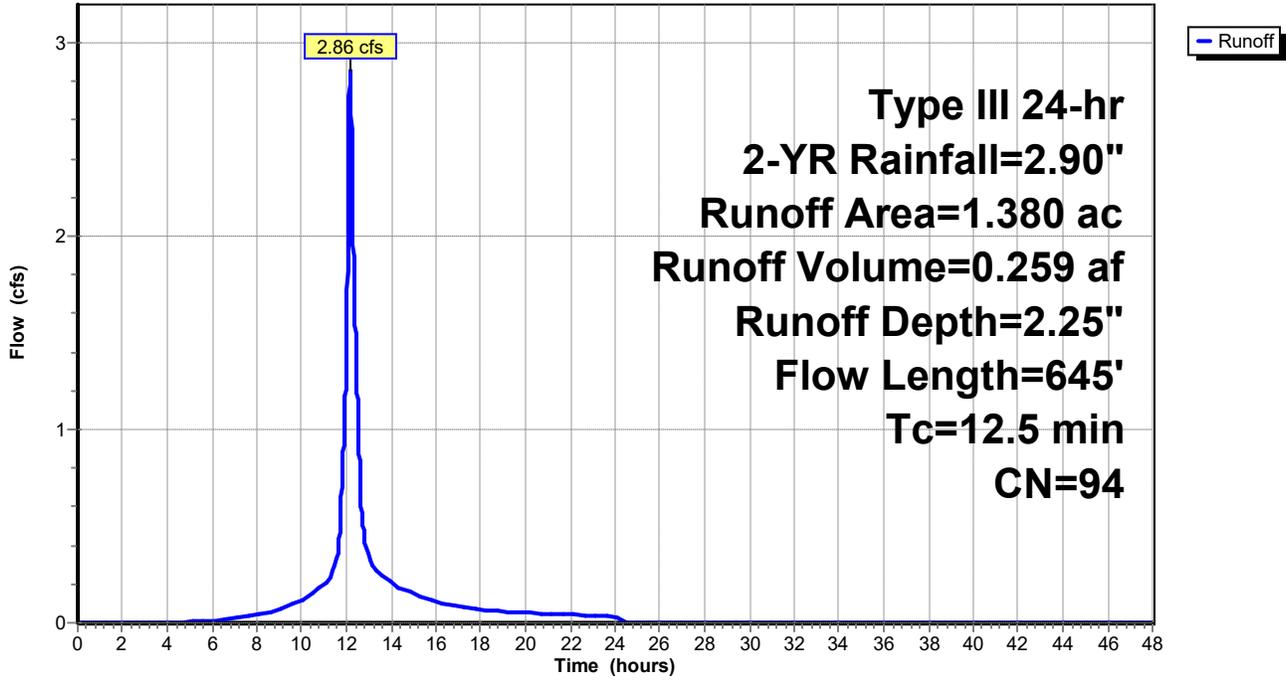
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

Area (ac)	CN	Description
0.260	80	>75% Grass cover, Good, HSG D
0.103	96	Gravel surface, HSG D
1.017	98	Paved parking, HSG D
0.000	98	Roofs, HSG D
1.380	94	Weighted Average
0.362		26.26% Pervious Area
1.017		73.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0063	0.09		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
0.1	4	0.0063	0.56		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
0.8	212	0.0470	4.40		<b>Shallow Concentrated Flow, C</b>
					Paved Kv= 20.3 fps
0.6	87	0.1290	2.51		<b>Shallow Concentrated Flow, D</b>
					Short Grass Pasture Kv= 7.0 fps
1.6	292	0.0360	3.05		<b>Shallow Concentrated Flow, E</b>
					Unpaved Kv= 16.1 fps
12.5	645	Total			

Subcatchment 12: Subcat 12

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 2-YR Rainfall=2.90"

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**Summary for Subcatchment 20: Subcat 20**

Runoff = 12.89 cfs @ 12.20 hrs, Volume= 1.194 af, Depth= 1.37"  
 Routed to Reach DP-1 : DP-1

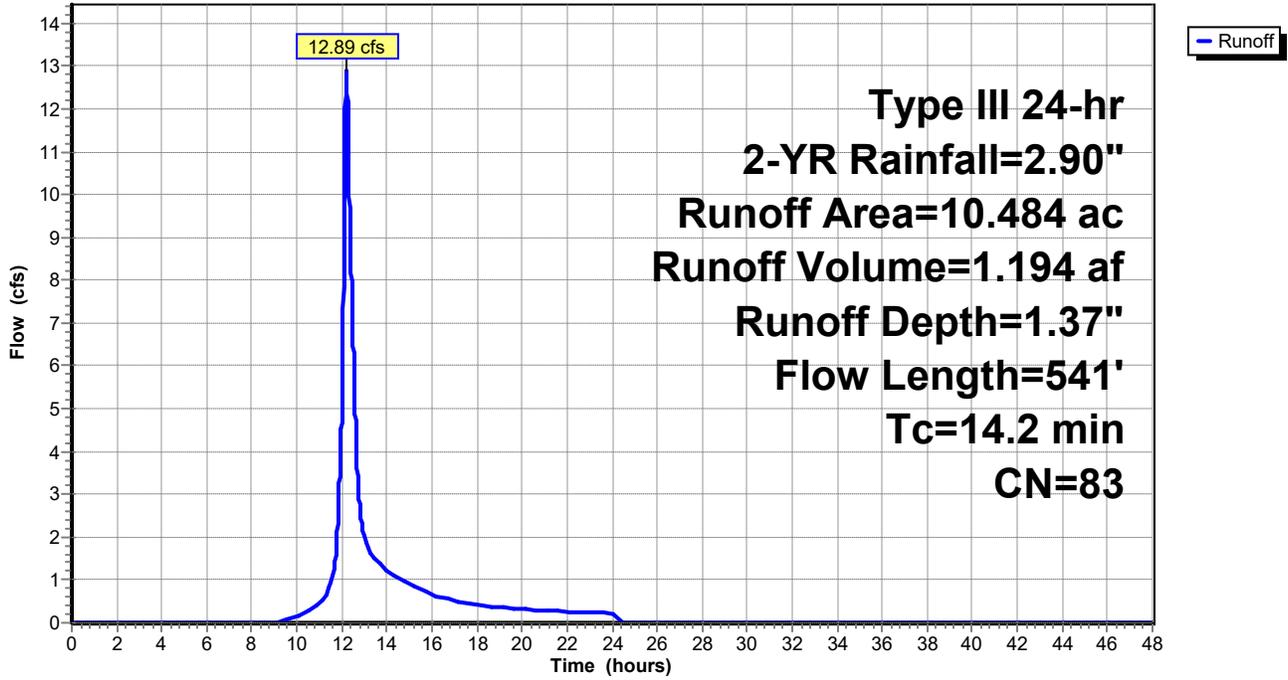
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

Area (ac)	CN	Description
4.773	80	>75% Grass cover, Good, HSG D
2.592	73	Brush, Good, HSG D
0.065	91	Gravel roads, HSG D
0.461	96	Gravel surface, HSG D
0.996	98	Paved parking, HSG D
1.593	98	Roofs, HSG D
0.003	98	Unconnected pavement, HSG D
10.484	83	Weighted Average
7.892		75.27% Pervious Area
2.593		24.73% Impervious Area
0.003		0.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0168	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
6.4	302	0.0128	0.79		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
1.4	167	0.0770	1.94		<b>Shallow Concentrated Flow, C</b>
					Short Grass Pasture Kv= 7.0 fps
0.1	22	0.3560	2.98		<b>Shallow Concentrated Flow, D</b>
					Woodland Kv= 5.0 fps
14.2	541	Total			

Subcatchment 20: Subcat 20

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 2-YR Rainfall=2.90"

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**Summary for Subcatchment 30: Subcat 30**

Runoff = 5.31 cfs @ 12.16 hrs, Volume= 0.457 af, Depth= 1.24"  
 Routed to Reach DP-1 : DP-1

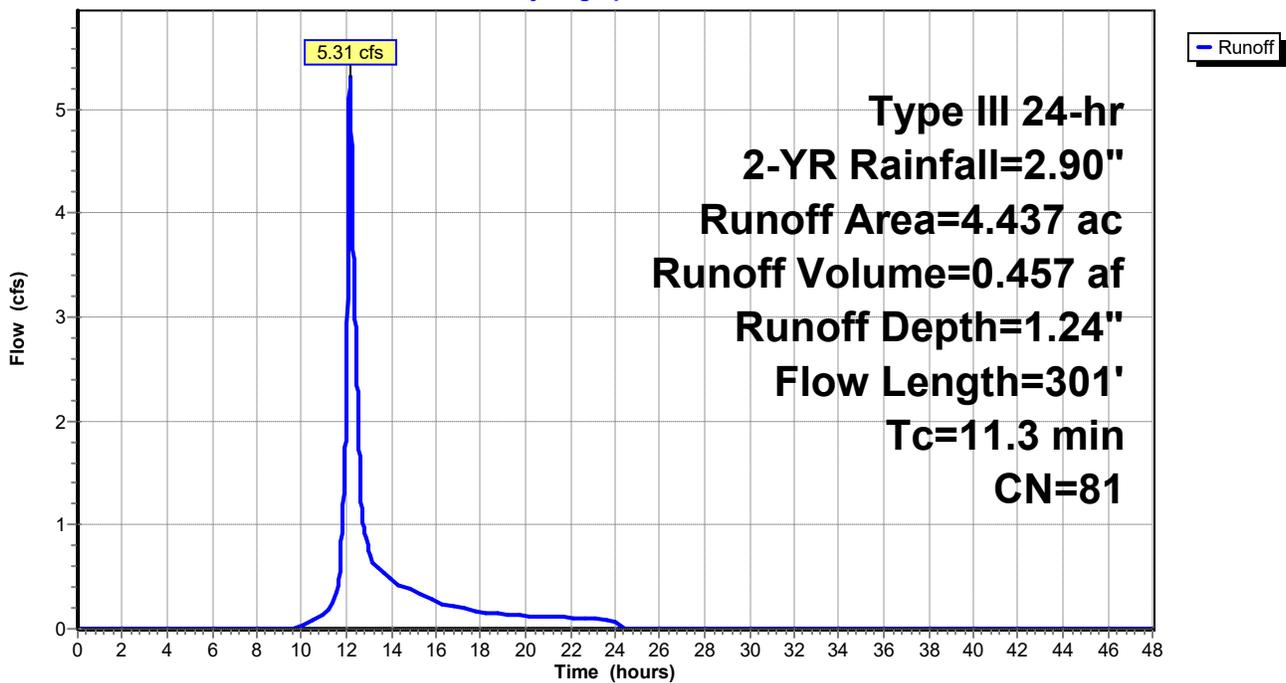
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-YR Rainfall=2.90"

Area (ac)	CN	Description
2.309	80	>75% Grass cover, Good, HSG D
1.360	73	Brush, Good, HSG D
0.496	96	Gravel surface, HSG D
0.273	98	Paved parking, HSG D
4.437	81	Weighted Average
4.165		93.85% Pervious Area
0.273		6.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0167	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
4.9	251	0.0150	0.86		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
11.3	301	Total			

**Subcatchment 30: Subcat 30**

Hydrograph



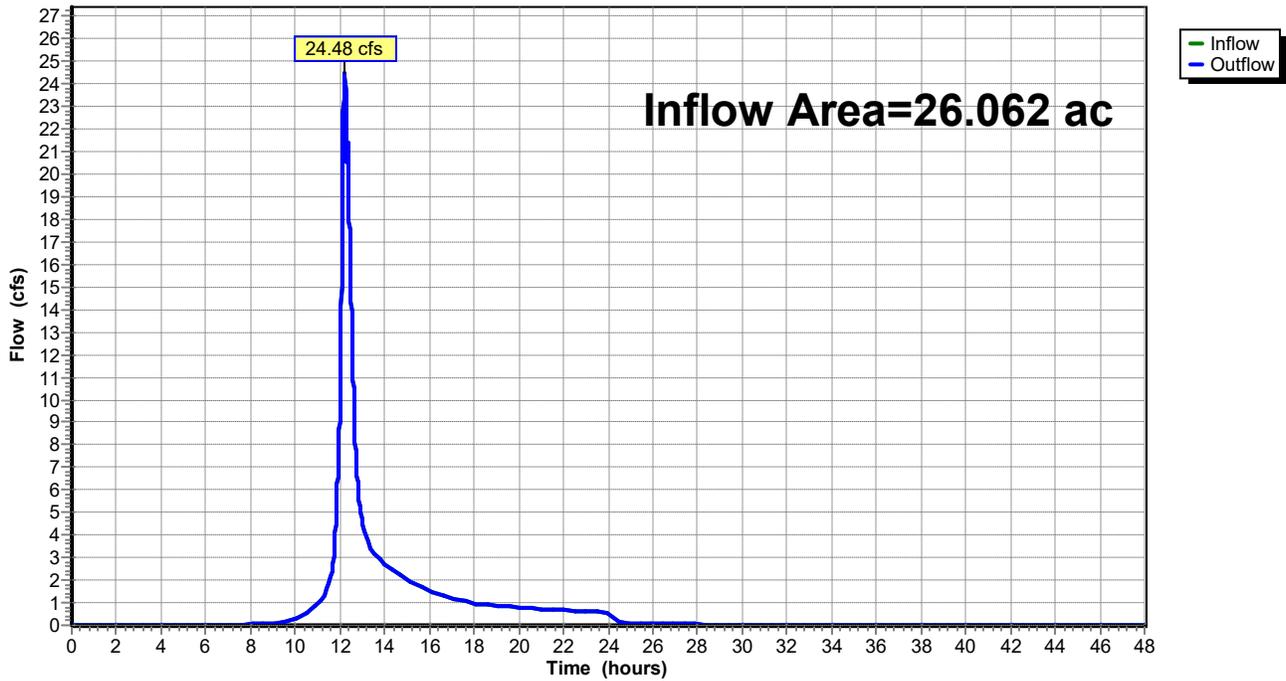
Summary for Reach DP-1: DP-1

Inflow Area = 26.062 ac, 33.08% Impervious, Inflow Depth = 1.22" for 2-YR event  
Inflow = 24.48 cfs @ 12.20 hrs, Volume= 2.654 af  
Outflow = 24.48 cfs @ 12.20 hrs, Volume= 2.654 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-1: DP-1

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 2-YR Rainfall=2.90"

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**Summary for Pond 1P: Field Detention System**

Inflow Area = 3.228 ac, 100.00% Impervious, Inflow Depth = 2.67" for 2-YR event  
 Inflow = 7.57 cfs @ 12.15 hrs, Volume= 0.718 af  
 Outflow = 0.03 cfs @ 4.89 hrs, Volume= 0.110 af, Atten= 100%, Lag= 0.0 min  
 Discarded = 0.03 cfs @ 4.89 hrs, Volume= 0.110 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 133.94' @ 24.19 hrs Surf.Area= 36,513 sf Storage= 29,055 cf

Plug-Flow detention time= 1,065.1 min calculated for 0.110 af (15% of inflow)  
 Center-of-Mass det. time= 786.6 min ( 1,550.4 - 763.8 )

Volume	Invert	Avail.Storage	Storage Description
#1A	132.54'	27,327 cf	<b>115.00'W x 317.50'L x 3.04'H Field A</b> 111,059 cf Overall - 19,968 cf Embedded = 91,091 cf x 30.0% Voids
#2A	133.04'	19,968 cf	<b>Cultec C-100HD</b> x 1428 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 34 rows
#3	134.91'	694 cf	<b>Additional Field Storage</b> Listed below
		47,989 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
134.91	0	0
135.58	694	694

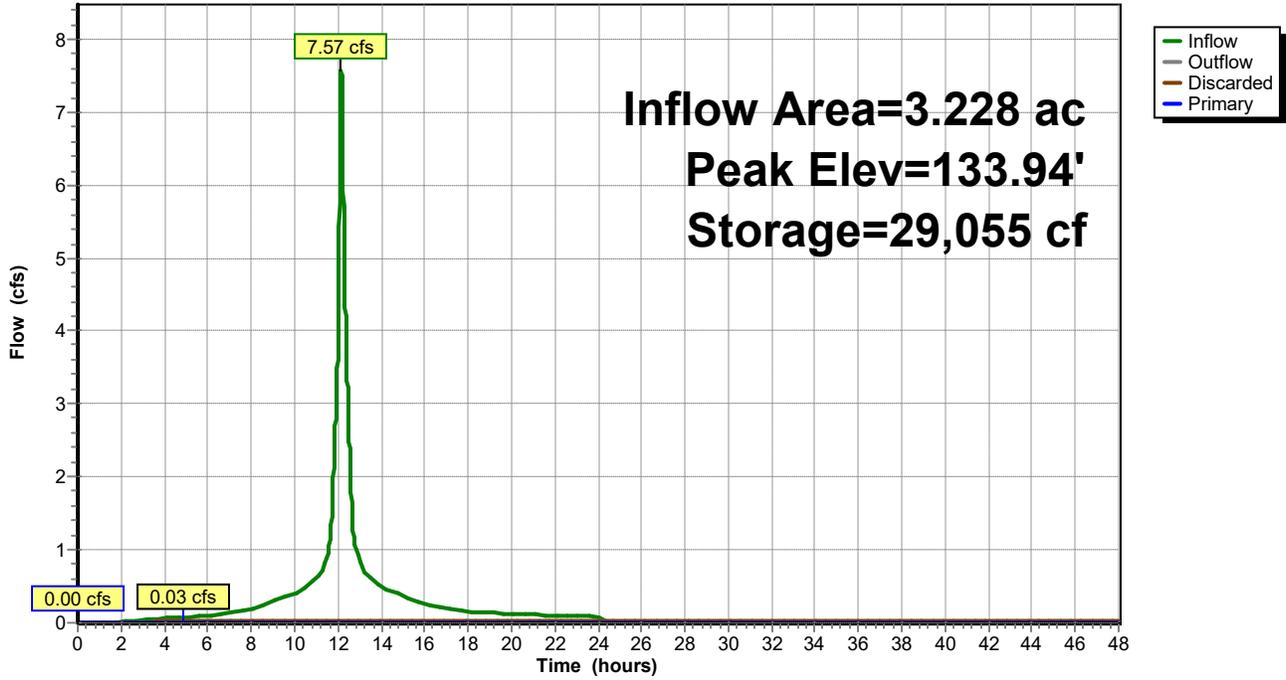
Device	Routing	Invert	Outlet Devices
#1	Discarded	132.54'	<b>0.03 cfs Exfiltration at all elevations</b>
#2	Primary	135.08'	<b>36.0" W x 6.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.03 cfs @ 4.89 hrs HW=132.57' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=132.54' (Free Discharge)  
 ↑2=Orifice/Grate ( Controls 0.00 cfs)

### Pond 1P: Field Detention System

Hydrograph



**Summary for Pond 2P: Parking Lot Detention**

Inflow Area = 1.380 ac, 73.74% Impervious, Inflow Depth = 2.25" for 2-YR event  
 Inflow = 2.86 cfs @ 12.17 hrs, Volume= 0.259 af  
 Outflow = 1.60 cfs @ 12.34 hrs, Volume= 0.258 af, Atten= 44%, Lag= 10.4 min  
 Primary = 0.19 cfs @ 12.34 hrs, Volume= 0.216 af  
 Routed to Reach DP-1 : DP-1  
 Secondary = 1.41 cfs @ 12.34 hrs, Volume= 0.042 af  
 Routed to Reach DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 4  
 Peak Elev= 112.78' @ 12.34 hrs Surf.Area= 3,241 sf Storage= 4,206 cf

Plug-Flow detention time= 223.2 min calculated for 0.258 af (100% of inflow)  
 Center-of-Mass det. time= 221.1 min ( 1,017.6 - 796.4 )

Volume	Invert	Avail.Storage	Storage Description
#1A	109.93'	1,727 cf	<b>60.00'W x 54.00'L x 2.54'H Field A</b> 8,235 cf Overall - 2,479 cf Embedded = 5,756 cf x 30.0% Voids
#2A	110.43'	2,479 cf	<b>Cultec R-150XLHD x 90 Inside #1</b> 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 18 rows
#3	112.47'	1 cf	<b>Custom Stage Data (Prismatic) Listed below (Recalc)</b>
		4,207 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.47	1	0	0
114.00	0	1	1

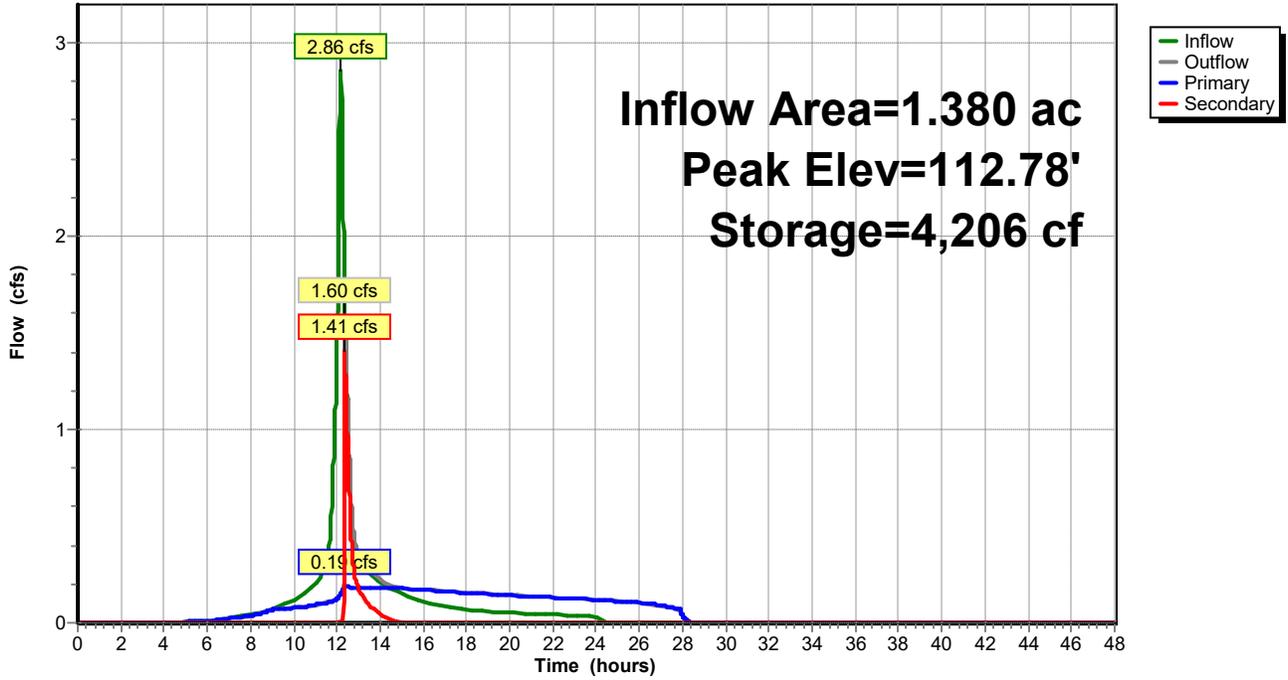
Device	Routing	Invert	Outlet Devices
#1	Primary	109.43'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Secondary	112.33'	<b>15.0" Round Culvert X 2.00</b> L= 78.0' Ke= 0.900 Inlet / Outlet Invert= 112.33' / 109.00' S= 0.0427 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=0.19 cfs @ 12.34 hrs HW=112.78' (Free Discharge)  
 ↑ **1=Orifice/Grate** (Orifice Controls 0.19 cfs @ 8.70 fps)

**Secondary OutFlow** Max=1.41 cfs @ 12.34 hrs HW=112.78' (Free Discharge)  
 ↑ **2=Culvert** (Inlet Controls 1.41 cfs @ 1.79 fps)

### Pond 2P: Parking Lot Detention

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 10-YR Rainfall=4.20"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 10: Track and Field** Runoff Area=3.228 ac 100.00% Impervious Runoff Depth=3.96"  
Flow Length=328' Tc=11.7 min CN=98 Runoff=11.05 cfs 1.067 af

**Subcatchment 11: Subcat 11** Runoff Area=6.533 ac 23.11% Impervious Runoff Depth=2.46"  
Flow Length=354' Tc=19.7 min CN=83 Runoff=12.80 cfs 1.340 af

**Subcatchment 12: Subcat 12** Runoff Area=1.380 ac 73.74% Impervious Runoff Depth=3.52"  
Flow Length=645' Tc=12.5 min CN=94 Runoff=4.36 cfs 0.405 af

**Subcatchment 20: Subcat 20** Runoff Area=10.484 ac 24.73% Impervious Runoff Depth=2.46"  
Flow Length=541' Tc=14.2 min CN=83 Runoff=23.39 cfs 2.150 af

**Subcatchment 30: Subcat 30** Runoff Area=4.437 ac 6.15% Impervious Runoff Depth=2.29"  
Flow Length=301' Tc=11.3 min CN=81 Runoff=9.99 cfs 0.847 af

**Reach DP-1: DP-1** Inflow=49.79 cfs 4.803 af  
Outflow=49.79 cfs 4.803 af

**Pond 1P: Field Detention System** Peak Elev=135.13' Storage=42,601 cf Inflow=11.05 cfs 1.067 af  
Discarded=0.03 cfs 0.112 af Primary=0.12 cfs 0.043 af Outflow=0.15 cfs 0.156 af

**Pond 2P: Parking Lot Detention** Peak Elev=113.44' Storage=4,207 cf Inflow=4.36 cfs 0.405 af  
Primary=0.21 cfs 0.255 af Secondary=7.24 cfs 0.168 af Outflow=7.45 cfs 0.423 af

**Total Runoff Area = 26.062 ac Runoff Volume = 5.808 af Average Runoff Depth = 2.67"**  
**66.92% Pervious = 17.442 ac 33.08% Impervious = 8.621 ac**

**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 10-YR Rainfall=4.20"

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**Summary for Subcatchment 10: Track and Field**

Runoff = 11.05 cfs @ 12.15 hrs, Volume= 1.067 af, Depth= 3.96"

Routed to Pond 1P : Field Detention System

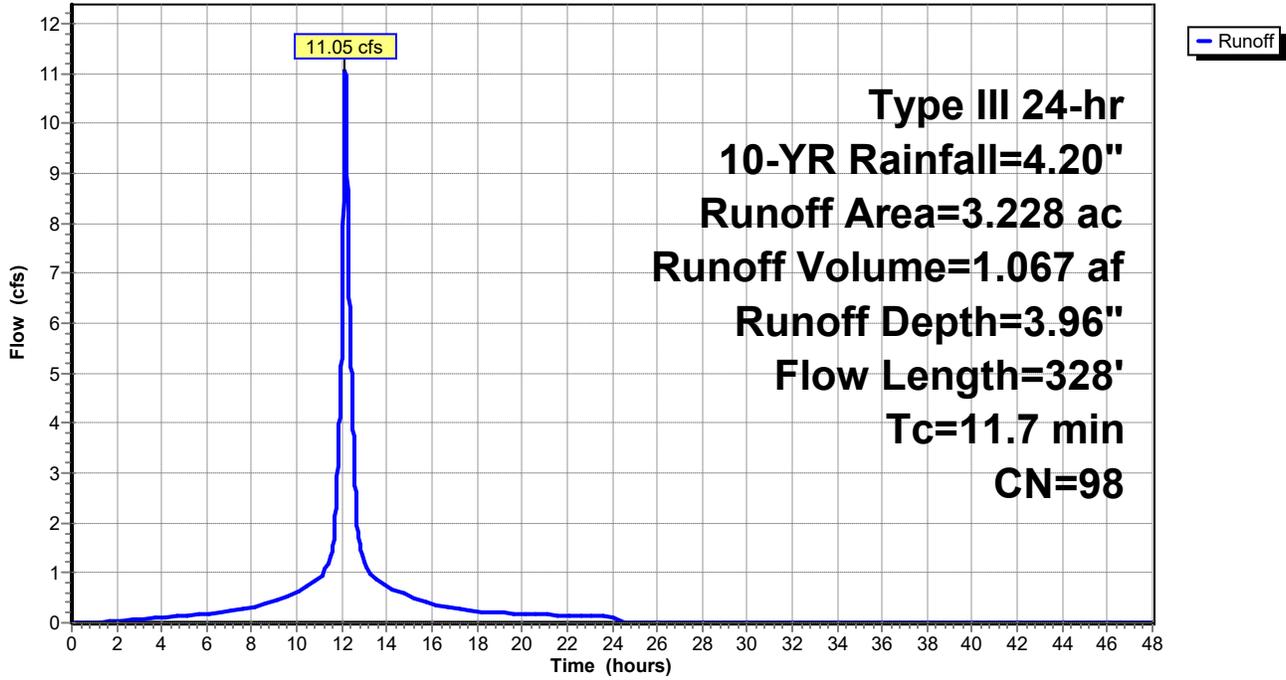
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
0.000	80	>75% Grass cover, Good, HSG D
3.228	98	Paved parking, HSG D
3.228	98	Weighted Average
0.000		0.00% Pervious Area
3.228		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0075	0.10		<b>Sheet Flow, A</b> Grass: Short n= 0.150 P2= 2.90"
1.5	55	0.0075	0.61		<b>Shallow Concentrated Flow, B</b> Short Grass Pasture Kv= 7.0 fps
1.2	190	0.0100	2.55	0.42	<b>Parabolic Channel, C</b> W=0.33' D=0.74' Area=0.2 sf Perim=1.5' n= 0.013 Corrugated PE, smooth interior
0.2	33	0.0050	2.45	0.85	<b>Pipe Channel, D</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013 Corrugated PE, smooth interior
11.7	328	Total			

Subcatchment 10: Track and Field

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 10-YR Rainfall=4.20"

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**Summary for Subcatchment 11: Subcat 11**

Runoff = 12.80 cfs @ 12.28 hrs, Volume= 1.340 af, Depth= 2.46"  
 Routed to Reach DP-1 : DP-1

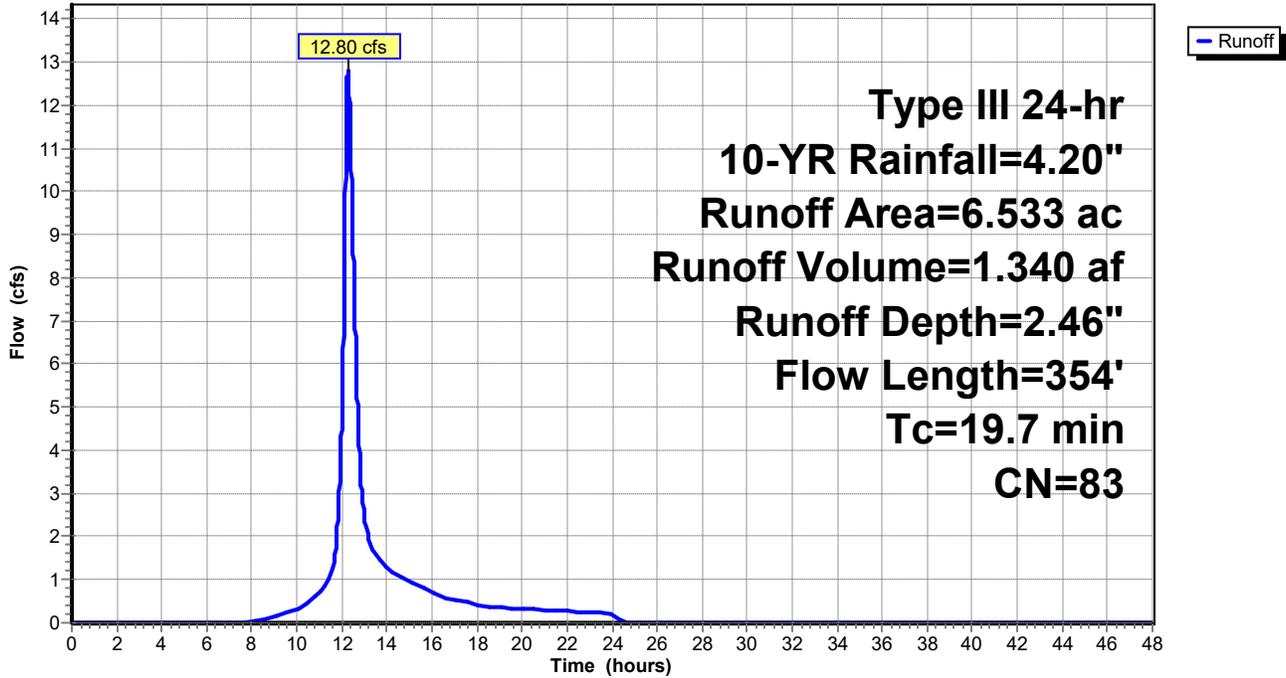
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
3.402	80	>75% Grass cover, Good, HSG D
1.397	73	Brush, Good, HSG D
0.004	91	Gravel roads, HSG D
0.220	96	Gravel surface, HSG D
1.418	98	Paved parking, HSG D
0.000	98	Roofs, HSG D
0.006	98	Unconnected pavement, HSG D
0.086	98	Unconnected roofs, HSG D
6.533	83	Weighted Average
5.023		76.89% Pervious Area
1.510		23.11% Impervious Area
0.092		6.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0190	0.06		<b>Sheet Flow, A</b>
					Woods: Light underbrush n= 0.400 P2= 2.90"
6.5	304	0.0240	0.77		<b>Shallow Concentrated Flow, B</b>
					Woodland Kv= 5.0 fps
19.7	354	Total			

Subcatchment 11: Subcat 11

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 10-YR Rainfall=4.20"

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**Summary for Subcatchment 12: Subcat 12**

Runoff = 4.36 cfs @ 12.17 hrs, Volume= 0.405 af, Depth= 3.52"

Routed to Pond 2P : Parking Lot Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

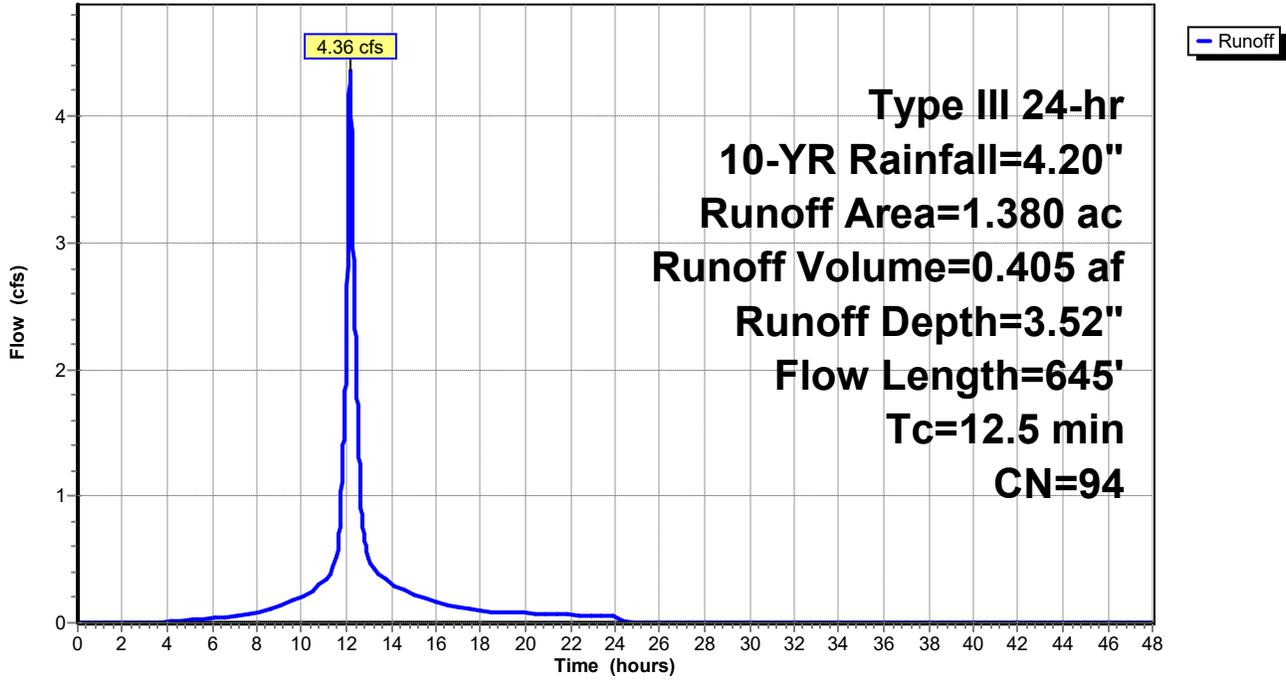
Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
0.260	80	>75% Grass cover, Good, HSG D
0.103	96	Gravel surface, HSG D
1.017	98	Paved parking, HSG D
0.000	98	Roofs, HSG D
1.380	94	Weighted Average
0.362		26.26% Pervious Area
1.017		73.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0063	0.09		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
0.1	4	0.0063	0.56		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
0.8	212	0.0470	4.40		<b>Shallow Concentrated Flow, C</b>
					Paved Kv= 20.3 fps
0.6	87	0.1290	2.51		<b>Shallow Concentrated Flow, D</b>
					Short Grass Pasture Kv= 7.0 fps
1.6	292	0.0360	3.05		<b>Shallow Concentrated Flow, E</b>
					Unpaved Kv= 16.1 fps
12.5	645	Total			

Subcatchment 12: Subcat 12

Hydrograph



**Summary for Subcatchment 20: Subcat 20**

Runoff = 23.39 cfs @ 12.20 hrs, Volume= 2.150 af, Depth= 2.46"  
 Routed to Reach DP-1 : DP-1

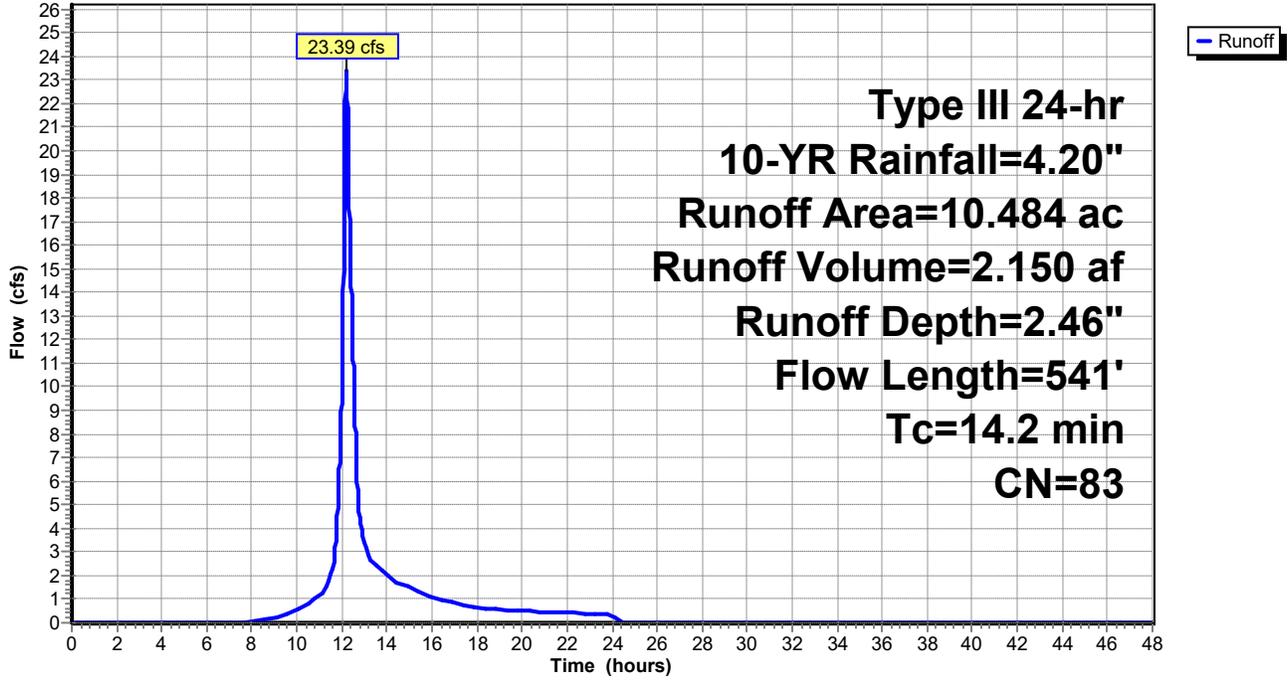
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
4.773	80	>75% Grass cover, Good, HSG D
2.592	73	Brush, Good, HSG D
0.065	91	Gravel roads, HSG D
0.461	96	Gravel surface, HSG D
0.996	98	Paved parking, HSG D
1.593	98	Roofs, HSG D
0.003	98	Unconnected pavement, HSG D
10.484	83	Weighted Average
7.892		75.27% Pervious Area
2.593		24.73% Impervious Area
0.003		0.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0168	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
6.4	302	0.0128	0.79		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
1.4	167	0.0770	1.94		<b>Shallow Concentrated Flow, C</b>
					Short Grass Pasture Kv= 7.0 fps
0.1	22	0.3560	2.98		<b>Shallow Concentrated Flow, D</b>
					Woodland Kv= 5.0 fps
14.2	541	Total			

Subcatchment 20: Subcat 20

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 10-YR Rainfall=4.20"

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**Summary for Subcatchment 30: Subcat 30**

Runoff = 9.99 cfs @ 12.16 hrs, Volume= 0.847 af, Depth= 2.29"  
 Routed to Reach DP-1 : DP-1

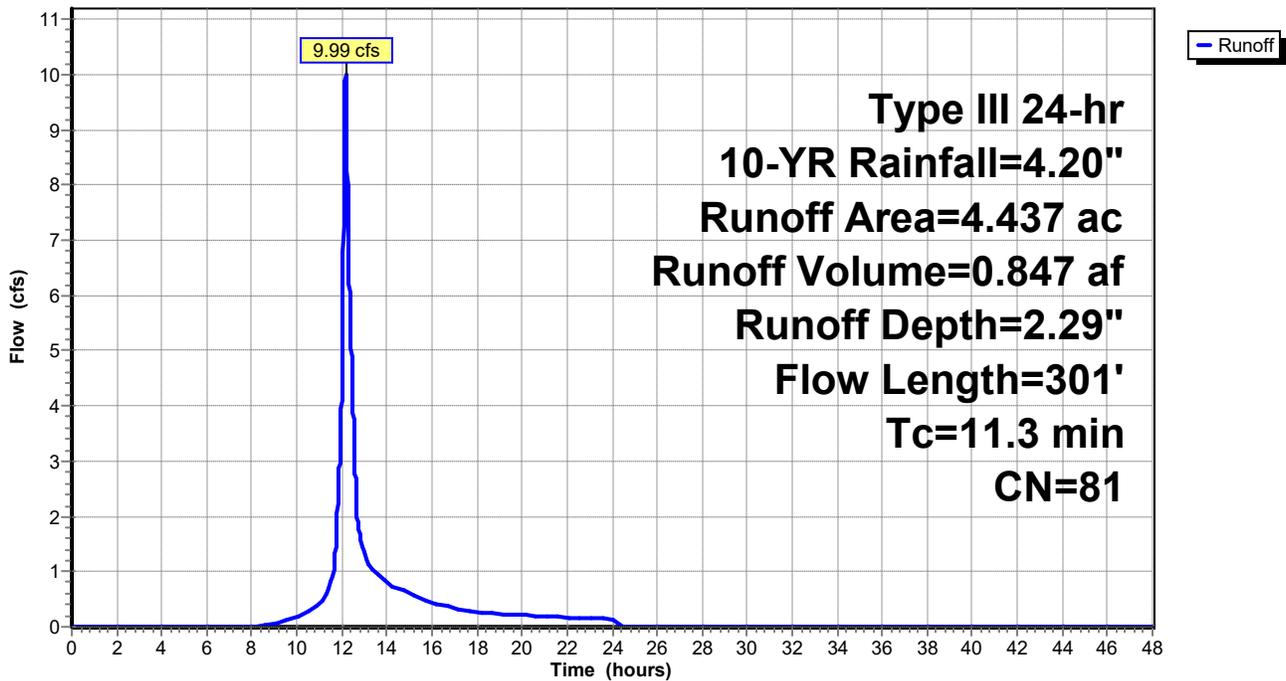
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-YR Rainfall=4.20"

Area (ac)	CN	Description
2.309	80	>75% Grass cover, Good, HSG D
1.360	73	Brush, Good, HSG D
0.496	96	Gravel surface, HSG D
0.273	98	Paved parking, HSG D
4.437	81	Weighted Average
4.165		93.85% Pervious Area
0.273		6.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0167	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
4.9	251	0.0150	0.86		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
11.3	301	Total			

**Subcatchment 30: Subcat 30**

Hydrograph



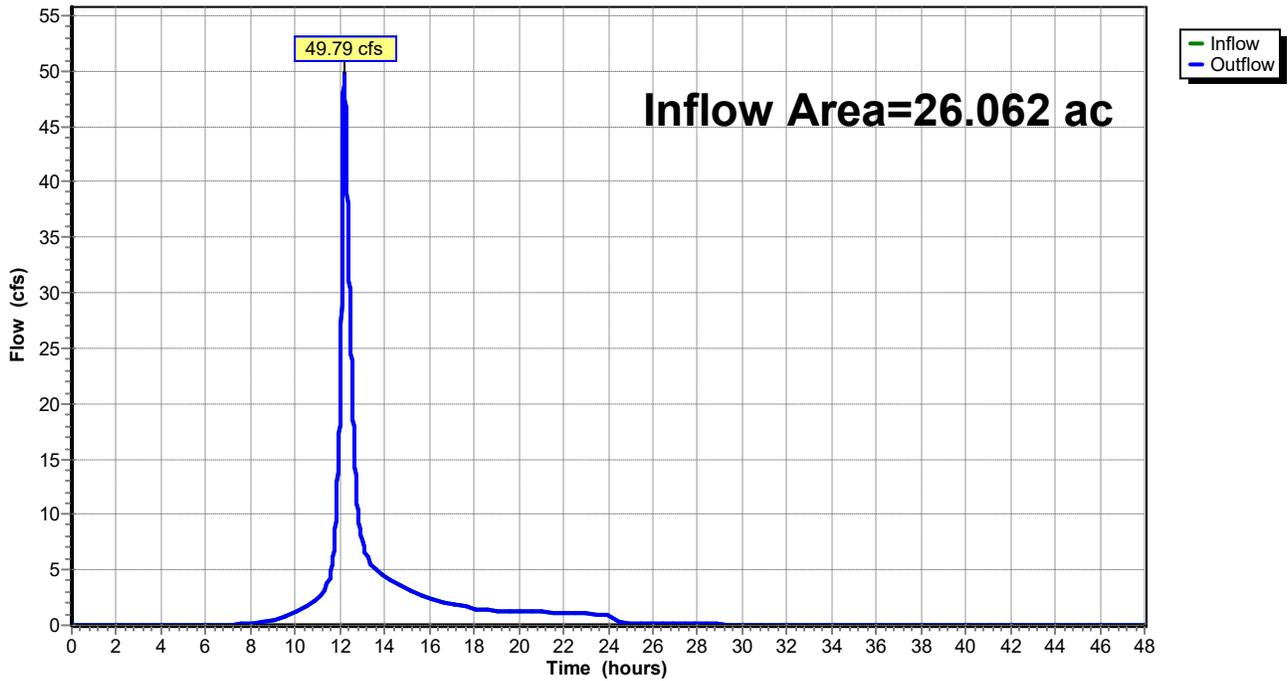
Summary for Reach DP-1: DP-1

Inflow Area = 26.062 ac, 33.08% Impervious, Inflow Depth = 2.21" for 10-YR event  
Inflow = 49.79 cfs @ 12.19 hrs, Volume= 4.803 af  
Outflow = 49.79 cfs @ 12.19 hrs, Volume= 4.803 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-1: DP-1

Hydrograph



**Summary for Pond 1P: Field Detention System**

Inflow Area = 3.228 ac, 100.00% Impervious, Inflow Depth = 3.96" for 10-YR event  
 Inflow = 11.05 cfs @ 12.15 hrs, Volume= 1.067 af  
 Outflow = 0.15 cfs @ 22.17 hrs, Volume= 0.156 af, Atten= 99%, Lag= 600.7 min  
 Discarded = 0.03 cfs @ 3.56 hrs, Volume= 0.112 af  
 Primary = 0.12 cfs @ 22.17 hrs, Volume= 0.043 af  
 Routed to Reach DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 135.13' @ 22.17 hrs Surf.Area= 36,513 sf Storage= 42,601 cf

Plug-Flow detention time= 1,022.8 min calculated for 0.156 af (15% of inflow)  
 Center-of-Mass det. time= 716.8 min ( 1,473.2 - 756.3 )

Volume	Invert	Avail.Storage	Storage Description
#1A	132.54'	27,327 cf	<b>115.00'W x 317.50'L x 3.04'H Field A</b> 111,059 cf Overall - 19,968 cf Embedded = 91,091 cf x 30.0% Voids
#2A	133.04'	19,968 cf	<b>Cultec C-100HD</b> x 1428 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 34 rows
#3	134.91'	694 cf	<b>Additional Field Storage</b> Listed below
		47,989 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
134.91	0	0
135.58	694	694

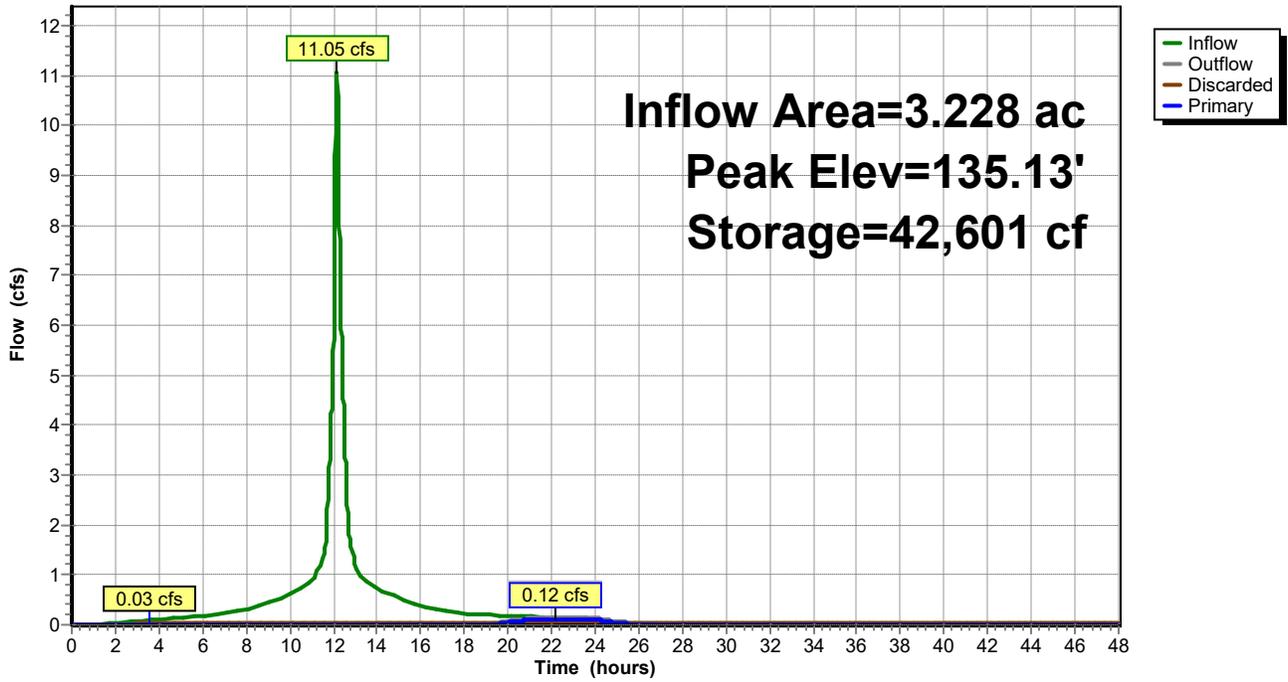
Device	Routing	Invert	Outlet Devices
#1	Discarded	132.54'	<b>0.03 cfs Exfiltration at all elevations</b>
#2	Primary	135.08'	<b>36.0" W x 6.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.03 cfs @ 3.56 hrs HW=132.57' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.11 cfs @ 22.17 hrs HW=135.13' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 0.11 cfs @ 0.73 fps)

### Pond 1P: Field Detention System

Hydrograph



**Summary for Pond 2P: Parking Lot Detention**

Inflow Area = 1.380 ac, 73.74% Impervious, Inflow Depth = 3.52" for 10-YR event  
 Inflow = 4.36 cfs @ 12.17 hrs, Volume= 0.405 af  
 Outflow = 7.45 cfs @ 12.11 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.21 cfs @ 12.11 hrs, Volume= 0.255 af  
 Routed to Reach DP-1 : DP-1  
 Secondary = 7.24 cfs @ 12.11 hrs, Volume= 0.168 af  
 Routed to Reach DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 4  
 Peak Elev= 113.44' @ 12.11 hrs Surf.Area= 3,240 sf Storage= 4,207 cf

Plug-Flow detention time= 128.2 min calculated for 0.405 af (100% of inflow)  
 Center-of-Mass det. time= 161.8 min ( 946.4 - 784.6 )

Volume	Invert	Avail.Storage	Storage Description
#1A	109.93'	1,727 cf	<b>60.00'W x 54.00'L x 2.54'H Field A</b> 8,235 cf Overall - 2,479 cf Embedded = 5,756 cf x 30.0% Voids
#2A	110.43'	2,479 cf	<b>Cultec R-150XLHD x 90 Inside #1</b> 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 18 rows
#3	112.47'	1 cf	<b>Custom Stage Data (Prismatic) Listed below (Recalc)</b>
		4,207 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.47	1	0	0
114.00	0	1	1

Device	Routing	Invert	Outlet Devices
#1	Primary	109.43'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Secondary	112.33'	<b>15.0" Round Culvert X 2.00</b> L= 78.0' Ke= 0.900 Inlet / Outlet Invert= 112.33' / 109.00' S= 0.0427 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=0.21 cfs @ 12.11 hrs HW=113.44' (Free Discharge)

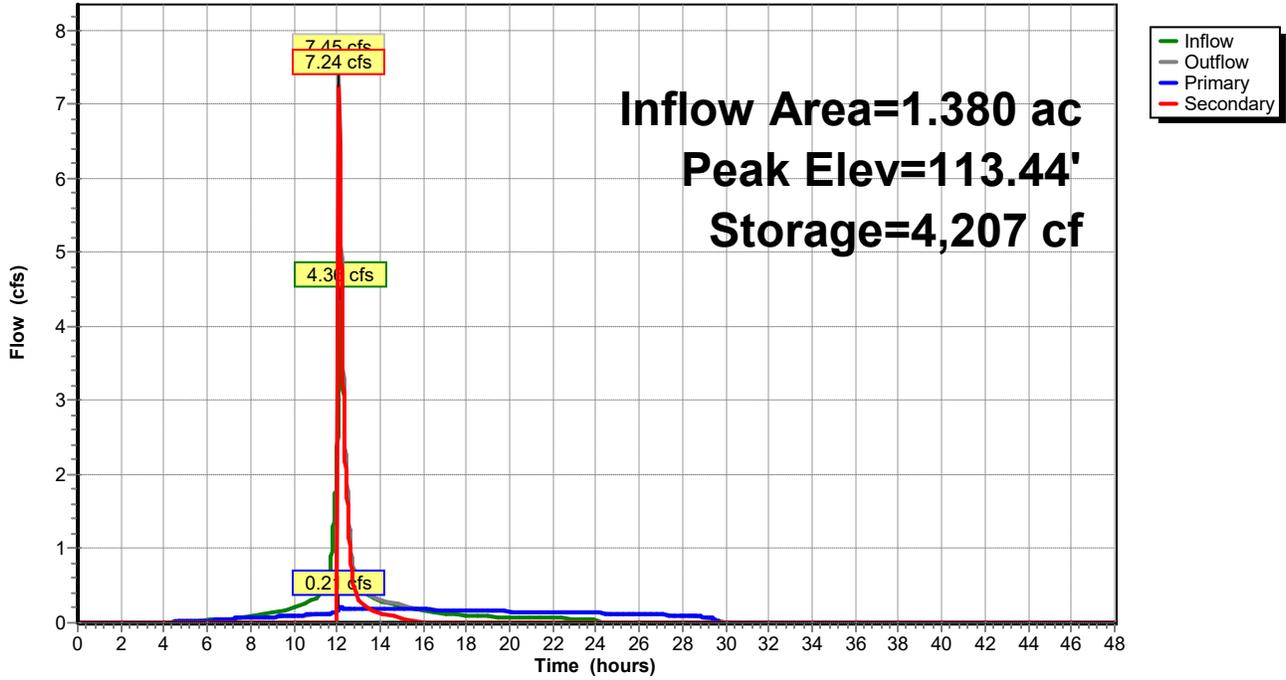
↑ **1=Orifice/Grate** (Orifice Controls 0.21 cfs @ 9.54 fps)

**Secondary OutFlow** Max=6.41 cfs @ 12.11 hrs HW=113.43' (Free Discharge)

↑ **2=Culvert** (Inlet Controls 6.41 cfs @ 2.81 fps)

### Pond 2P: Parking Lot Detention

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 25-YR Rainfall=5.20"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 10: Track and Field** Runoff Area=3.228 ac 100.00% Impervious Runoff Depth=4.96"  
Flow Length=328' Tc=11.7 min CN=98 Runoff=13.72 cfs 1.335 af

**Subcatchment 11: Subcat 11** Runoff Area=6.533 ac 23.11% Impervious Runoff Depth=3.36"  
Flow Length=354' Tc=19.7 min CN=83 Runoff=17.37 cfs 1.827 af

**Subcatchment 12: Subcat 12** Runoff Area=1.380 ac 73.74% Impervious Runoff Depth=4.51"  
Flow Length=645' Tc=12.5 min CN=94 Runoff=5.51 cfs 0.518 af

**Subcatchment 20: Subcat 20** Runoff Area=10.484 ac 24.73% Impervious Runoff Depth=3.36"  
Flow Length=541' Tc=14.2 min CN=83 Runoff=31.76 cfs 2.932 af

**Subcatchment 30: Subcat 30** Runoff Area=4.437 ac 6.15% Impervious Runoff Depth=3.16"  
Flow Length=301' Tc=11.3 min CN=81 Runoff=13.78 cfs 1.169 af

**Reach DP-1: DP-1** Inflow=66.21 cfs 6.763 af  
Outflow=66.21 cfs 6.763 af

**Pond 1P: Field Detention System** Peak Elev=135.26' Storage=44,099 cf Inflow=13.72 cfs 1.335 af  
Discarded=0.03 cfs 0.114 af Primary=0.72 cfs 0.310 af Outflow=0.75 cfs 0.424 af

**Pond 2P: Parking Lot Detention** Peak Elev=113.30' Storage=4,207 cf Inflow=5.51 cfs 0.518 af  
Primary=0.20 cfs 0.279 af Secondary=5.40 cfs 0.247 af Outflow=5.61 cfs 0.525 af

**Total Runoff Area = 26.062 ac Runoff Volume = 7.781 af Average Runoff Depth = 3.58"**  
**66.92% Pervious = 17.442 ac 33.08% Impervious = 8.621 ac**

**Summary for Subcatchment 10: Track and Field**

Runoff = 13.72 cfs @ 12.15 hrs, Volume= 1.335 af, Depth= 4.96"

Routed to Pond 1P : Field Detention System

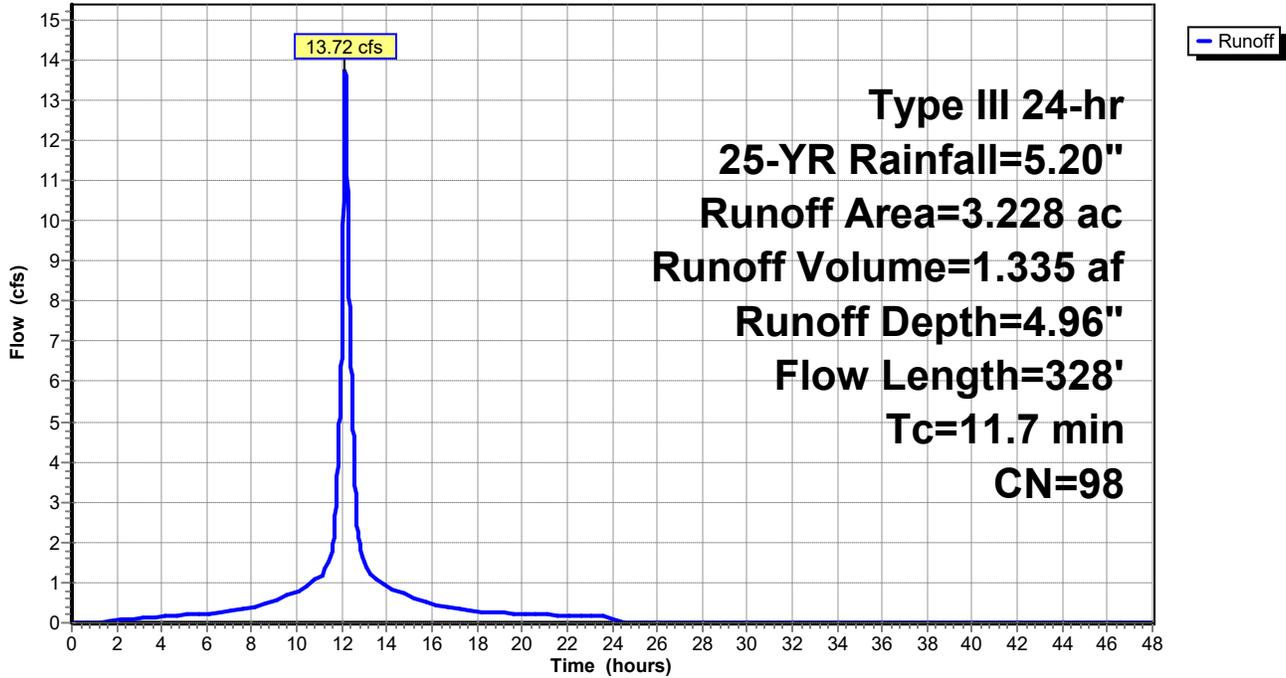
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

Area (ac)	CN	Description
0.000	80	>75% Grass cover, Good, HSG D
3.228	98	Paved parking, HSG D
3.228	98	Weighted Average
0.000		0.00% Pervious Area
3.228		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0075	0.10		<b>Sheet Flow, A</b> Grass: Short n= 0.150 P2= 2.90"
1.5	55	0.0075	0.61		<b>Shallow Concentrated Flow, B</b> Short Grass Pasture Kv= 7.0 fps
1.2	190	0.0100	2.55	0.42	<b>Parabolic Channel, C</b> W=0.33' D=0.74' Area=0.2 sf Perim=1.5' n= 0.013 Corrugated PE, smooth interior
0.2	33	0.0050	2.45	0.85	<b>Pipe Channel, D</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013 Corrugated PE, smooth interior
11.7	328	Total			

Subcatchment 10: Track and Field

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 25-YR Rainfall=5.20"

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**Summary for Subcatchment 11: Subcat 11**

Runoff = 17.37 cfs @ 12.27 hrs, Volume= 1.827 af, Depth= 3.36"  
 Routed to Reach DP-1 : DP-1

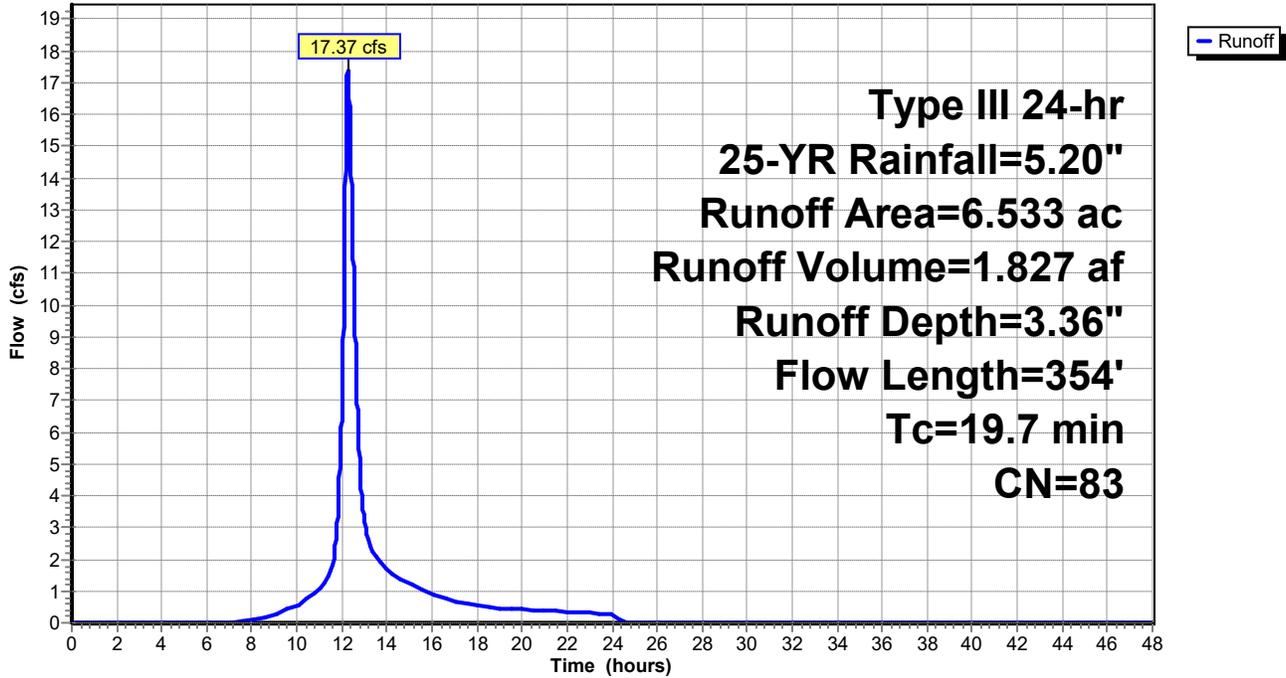
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

Area (ac)	CN	Description
3.402	80	>75% Grass cover, Good, HSG D
1.397	73	Brush, Good, HSG D
0.004	91	Gravel roads, HSG D
0.220	96	Gravel surface, HSG D
1.418	98	Paved parking, HSG D
0.000	98	Roofs, HSG D
0.006	98	Unconnected pavement, HSG D
0.086	98	Unconnected roofs, HSG D
6.533	83	Weighted Average
5.023		76.89% Pervious Area
1.510		23.11% Impervious Area
0.092		6.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0190	0.06		<b>Sheet Flow, A</b>
					Woods: Light underbrush n= 0.400 P2= 2.90"
6.5	304	0.0240	0.77		<b>Shallow Concentrated Flow, B</b>
					Woodland Kv= 5.0 fps
19.7	354	Total			

Subcatchment 11: Subcat 11

Hydrograph



**Summary for Subcatchment 12: Subcat 12**

Runoff = 5.51 cfs @ 12.16 hrs, Volume= 0.518 af, Depth= 4.51"  
 Routed to Pond 2P : Parking Lot Detention

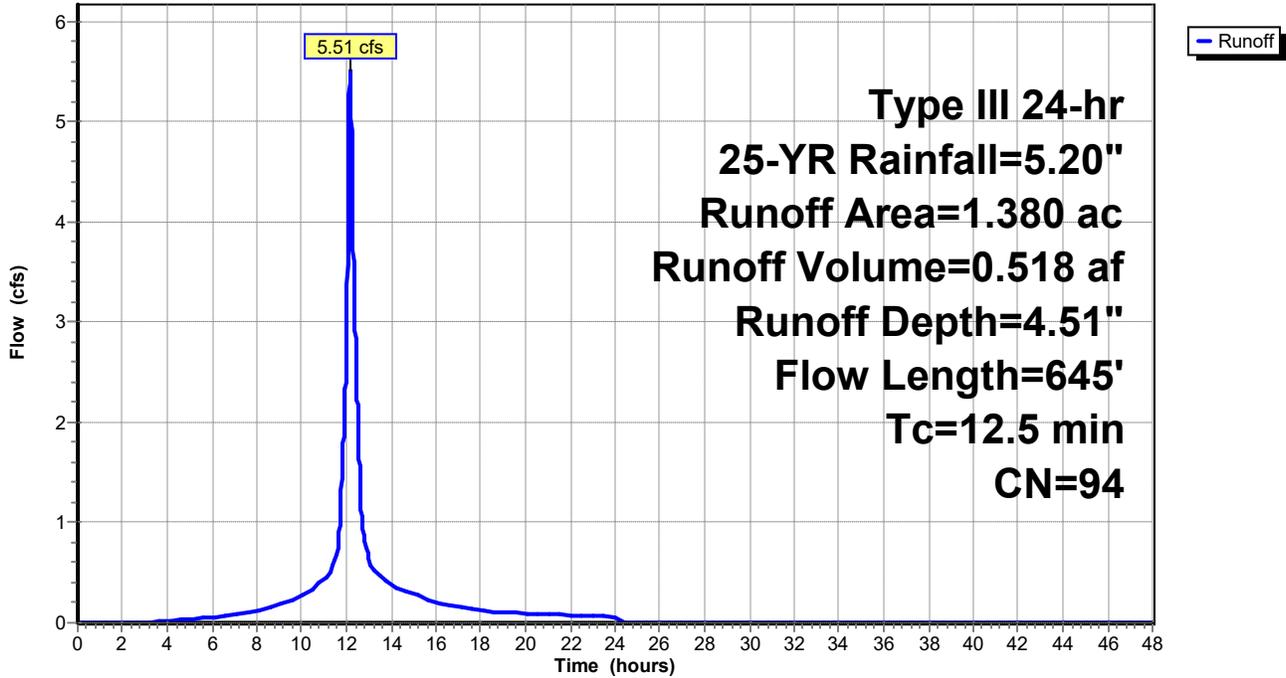
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

Area (ac)	CN	Description
0.260	80	>75% Grass cover, Good, HSG D
0.103	96	Gravel surface, HSG D
1.017	98	Paved parking, HSG D
0.000	98	Roofs, HSG D
1.380	94	Weighted Average
0.362		26.26% Pervious Area
1.017		73.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0063	0.09		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
0.1	4	0.0063	0.56		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
0.8	212	0.0470	4.40		<b>Shallow Concentrated Flow, C</b>
					Paved Kv= 20.3 fps
0.6	87	0.1290	2.51		<b>Shallow Concentrated Flow, D</b>
					Short Grass Pasture Kv= 7.0 fps
1.6	292	0.0360	3.05		<b>Shallow Concentrated Flow, E</b>
					Unpaved Kv= 16.1 fps
12.5	645	Total			

Subcatchment 12: Subcat 12

Hydrograph



**Summary for Subcatchment 20: Subcat 20**

Runoff = 31.76 cfs @ 12.19 hrs, Volume= 2.932 af, Depth= 3.36"  
 Routed to Reach DP-1 : DP-1

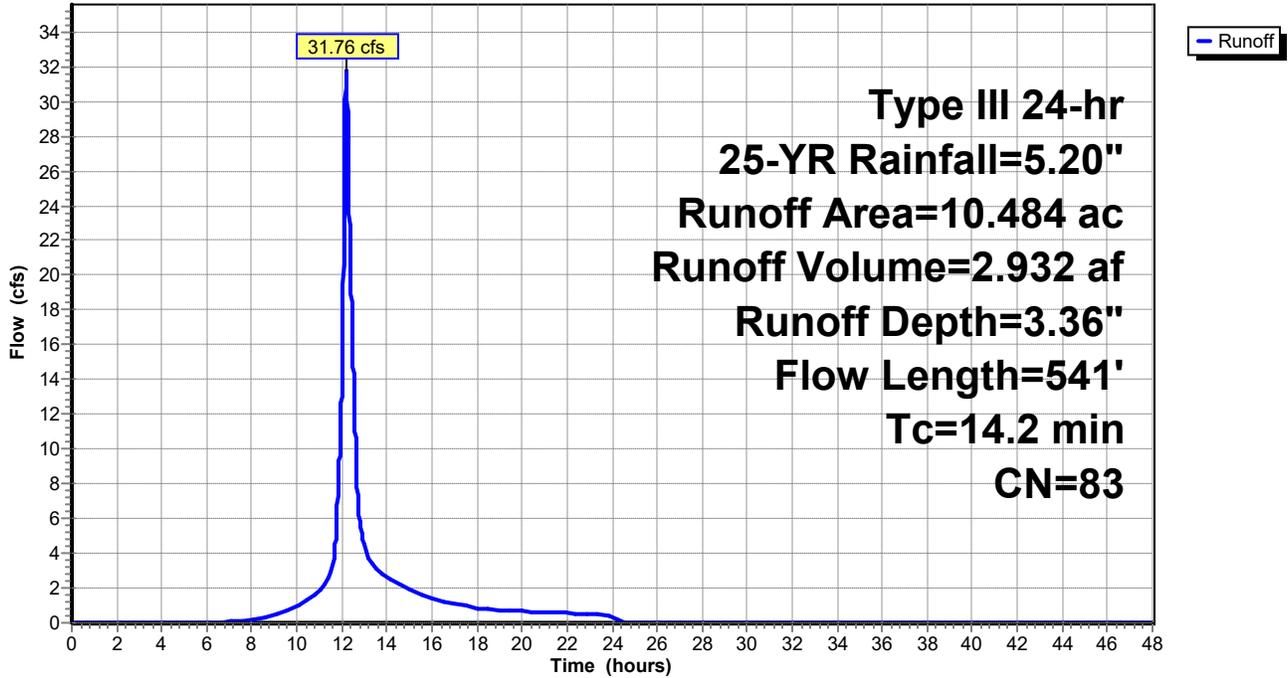
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

Area (ac)	CN	Description
4.773	80	>75% Grass cover, Good, HSG D
2.592	73	Brush, Good, HSG D
0.065	91	Gravel roads, HSG D
0.461	96	Gravel surface, HSG D
0.996	98	Paved parking, HSG D
1.593	98	Roofs, HSG D
0.003	98	Unconnected pavement, HSG D
10.484	83	Weighted Average
7.892		75.27% Pervious Area
2.593		24.73% Impervious Area
0.003		0.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0168	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
6.4	302	0.0128	0.79		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
1.4	167	0.0770	1.94		<b>Shallow Concentrated Flow, C</b>
					Short Grass Pasture Kv= 7.0 fps
0.1	22	0.3560	2.98		<b>Shallow Concentrated Flow, D</b>
					Woodland Kv= 5.0 fps
14.2	541	Total			

Subcatchment 20: Subcat 20

Hydrograph



**24002-HydroCAD-Proposed\_Conditions\_Flooding**

Type III 24-hr 25-YR Rainfall=5.20"

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**Summary for Subcatchment 30: Subcat 30**

Runoff = 13.78 cfs @ 12.16 hrs, Volume= 1.169 af, Depth= 3.16"  
 Routed to Reach DP-1 : DP-1

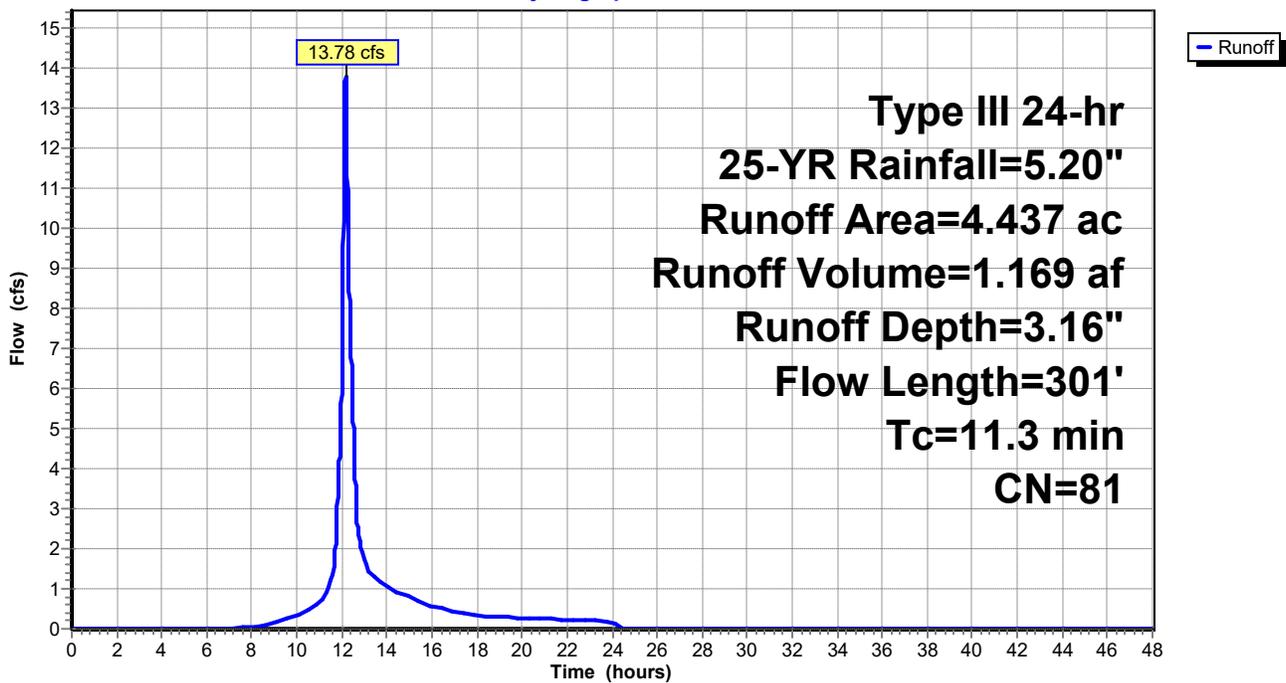
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.20"

Area (ac)	CN	Description
2.309	80	>75% Grass cover, Good, HSG D
1.360	73	Brush, Good, HSG D
0.496	96	Gravel surface, HSG D
0.273	98	Paved parking, HSG D
4.437	81	Weighted Average
4.165		93.85% Pervious Area
0.273		6.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0167	0.13		<b>Sheet Flow, A</b>
					Grass: Short n= 0.150 P2= 2.90"
4.9	251	0.0150	0.86		<b>Shallow Concentrated Flow, B</b>
					Short Grass Pasture Kv= 7.0 fps
11.3	301	Total			

**Subcatchment 30: Subcat 30**

Hydrograph



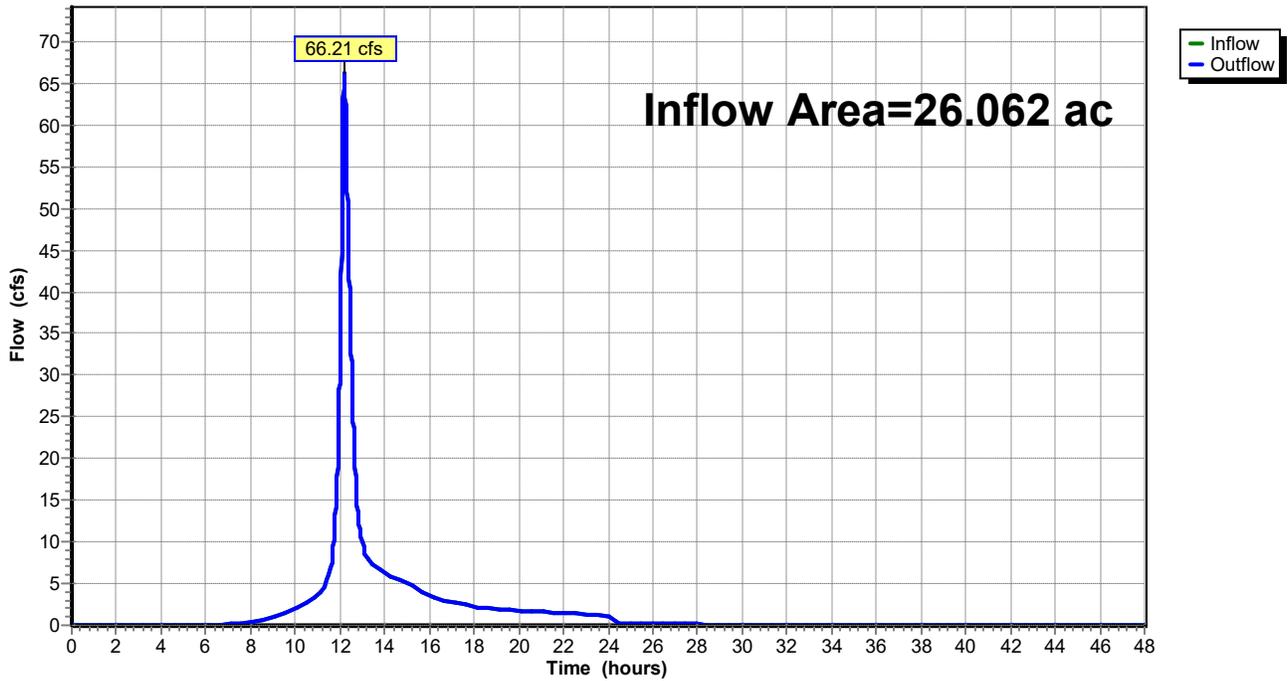
Summary for Reach DP-1: DP-1

Inflow Area = 26.062 ac, 33.08% Impervious, Inflow Depth = 3.11" for 25-YR event  
Inflow = 66.21 cfs @ 12.19 hrs, Volume= 6.763 af  
Outflow = 66.21 cfs @ 12.19 hrs, Volume= 6.763 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-1: DP-1

Hydrograph



**Summary for Pond 1P: Field Detention System**

Inflow Area = 3.228 ac, 100.00% Impervious, Inflow Depth = 4.96" for 25-YR event  
 Inflow = 13.72 cfs @ 12.15 hrs, Volume= 1.335 af  
 Outflow = 0.75 cfs @ 14.59 hrs, Volume= 0.424 af, Atten= 95%, Lag= 145.9 min  
 Discarded = 0.03 cfs @ 2.93 hrs, Volume= 0.114 af  
 Primary = 0.72 cfs @ 14.59 hrs, Volume= 0.310 af  
 Routed to Reach DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 135.26' @ 14.59 hrs Surf.Area= 36,513 sf Storage= 44,099 cf

Plug-Flow detention time= 607.2 min calculated for 0.424 af (32% of inflow)  
 Center-of-Mass det. time= 418.0 min ( 1,170.7 - 752.7 )

Volume	Invert	Avail.Storage	Storage Description
#1A	132.54'	27,327 cf	<b>115.00'W x 317.50'L x 3.04'H Field A</b> 111,059 cf Overall - 19,968 cf Embedded = 91,091 cf x 30.0% Voids
#2A	133.04'	19,968 cf	<b>Cultec C-100HD</b> x 1428 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 34 rows
#3	134.91'	694 cf	<b>Additional Field Storage</b> Listed below
		47,989 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
134.91	0	0
135.58	694	694

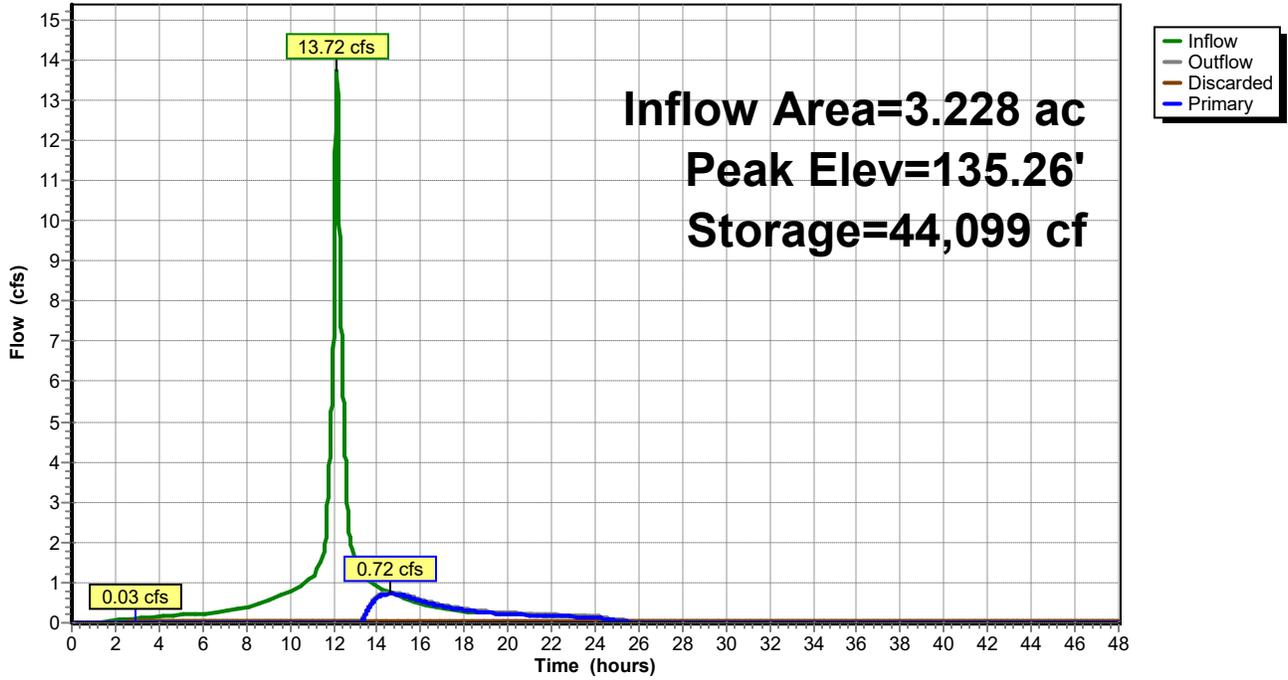
Device	Routing	Invert	Outlet Devices
#1	Discarded	132.54'	<b>0.03 cfs Exfiltration at all elevations</b>
#2	Primary	135.08'	<b>36.0" W x 6.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.03 cfs @ 2.93 hrs HW=132.57' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.72 cfs @ 14.59 hrs HW=135.26' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 0.72 cfs @ 1.35 fps)

### Pond 1P: Field Detention System

Hydrograph



**Summary for Pond 2P: Parking Lot Detention**

Inflow Area = 1.380 ac, 73.74% Impervious, Inflow Depth = 4.51" for 25-YR event  
 Inflow = 5.51 cfs @ 12.16 hrs, Volume= 0.518 af  
 Outflow = 5.61 cfs @ 12.16 hrs, Volume= 0.525 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.20 cfs @ 12.16 hrs, Volume= 0.279 af  
 Routed to Reach DP-1 : DP-1  
 Secondary = 5.40 cfs @ 12.16 hrs, Volume= 0.247 af  
 Routed to Reach DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 4  
 Peak Elev= 113.30' @ 12.16 hrs Surf.Area= 3,240 sf Storage= 4,207 cf

Plug-Flow detention time= 135.1 min calculated for 0.518 af (100% of inflow)  
 Center-of-Mass det. time= 147.4 min ( 925.8 - 778.4 )

Volume	Invert	Avail.Storage	Storage Description
#1A	109.93'	1,727 cf	<b>60.00'W x 54.00'L x 2.54'H Field A</b> 8,235 cf Overall - 2,479 cf Embedded = 5,756 cf x 30.0% Voids
#2A	110.43'	2,479 cf	<b>Cultec R-150XLHD x 90 Inside #1</b> 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 18 rows
#3	112.47'	1 cf	<b>Custom Stage Data (Prismatic) Listed below (Recalc)</b>
		4,207 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.47	1	0	0
114.00	0	1	1

Device	Routing	Invert	Outlet Devices
#1	Primary	109.43'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Secondary	112.33'	<b>15.0" Round Culvert X 2.00</b> L= 78.0' Ke= 0.900 Inlet / Outlet Invert= 112.33' / 109.00' S= 0.0427 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=0.20 cfs @ 12.16 hrs HW=113.30' (Free Discharge)

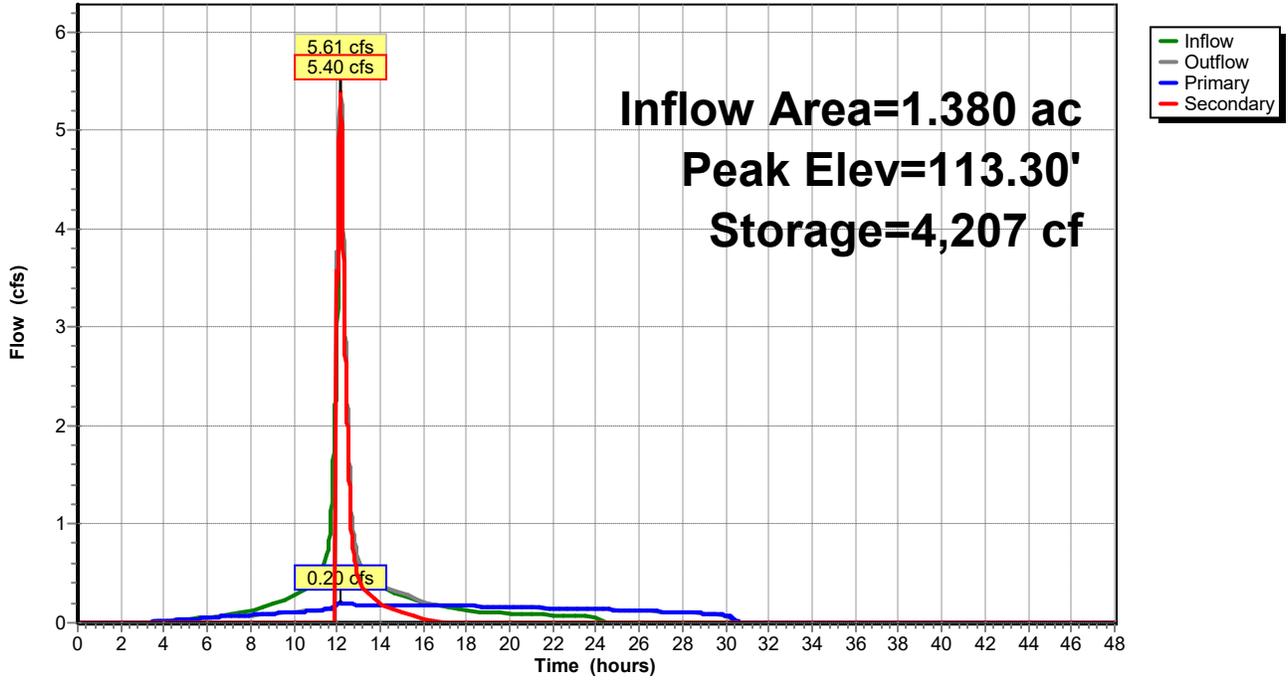
↑**1=Orifice/Grate** (Orifice Controls 0.20 cfs @ 9.37 fps)

**Secondary OutFlow** Max=5.40 cfs @ 12.16 hrs HW=113.30' (Free Discharge)

↑**2=Culvert** (Inlet Controls 5.40 cfs @ 2.65 fps)

### Pond 2P: Parking Lot Detention

Hydrograph



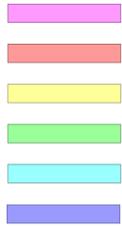
**WATER QUALITY ATTACHMENTS**

**EXISTING CONDITIONS PLAN NOTES**

1. EXISTING CONDITIONS INFORMATION OBTAINED FROM PUBLICLY AVAILABLE HISTORICAL AERIAL INFORMATION, AERIAL DATED MAY 8, 1996.

**EXISTING CONDITIONS POLLUTANT IMPACT RATING LEGEND**

- POLLUTANT IMPACT RANKING: 0
- POLLUTANT IMPACT RANKING: 1
- POLLUTANT IMPACT RANKING: 2
- POLLUTANT IMPACT RANKING: 3
- POLLUTANT IMPACT RANKING: 4
- POLLUTANT IMPACT RANKING: 5



CONSULTANTS

WETLAND DELINEATION -  
HALEY WARD, INC.

SURVEY -  
E.S. COFFIN ENGINEERING & SURVEYING, INC.

GEOTECHNICAL ENGINEER -  
HALEY & ALDRICH, INC.

**RSU 71 BELFAST AREA  
HIGH SCHOOL**  
Belfast, ME

Site Location of Development Act

Permitting Documents  
April 25, 2025

REVISIONS:

NO.	DATE	DESCRIPTION

SCALE: 1"=100'-0"  
 PROJECT NO.: 24002.00  
 FILE: 24002.00-EX\_CONDITIONS.dwg  
 DRAWN: BJM  
 CHECKED: SRC/HG

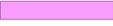
SEAL:

SHEET TITLE:  
EXISTING POLLUTANT  
IMPACT RATING PLAN  
(1997)

SHEET NO:

PROPOSED CONDITIONS NOTES PROPOSED CONDITIONS POLLUTANT IMPACT RATING LEGEND

- 1. EXISTING CONDITIONS IS A COMPILATION OF A SURVEY PERFORMED BY E.S. COFFIN DATED AUGUST 26, 2024 AND WBRG "BELFAST AREA HIGH SCHOOL ADDITION & RENOVATION" DESIGN DRAWINGS DATED OCTOBER 1, 2019.
- 2. ELEVATION DATA OUTSIDE OF THE EXISTING CONDITIONS SURVEY LIMITS SUPPLEMENTED WITH PUBLICLY AVAILABLE NOAA LIDAR DATA.

POLLUTANT IMPACT RANKING: 0 

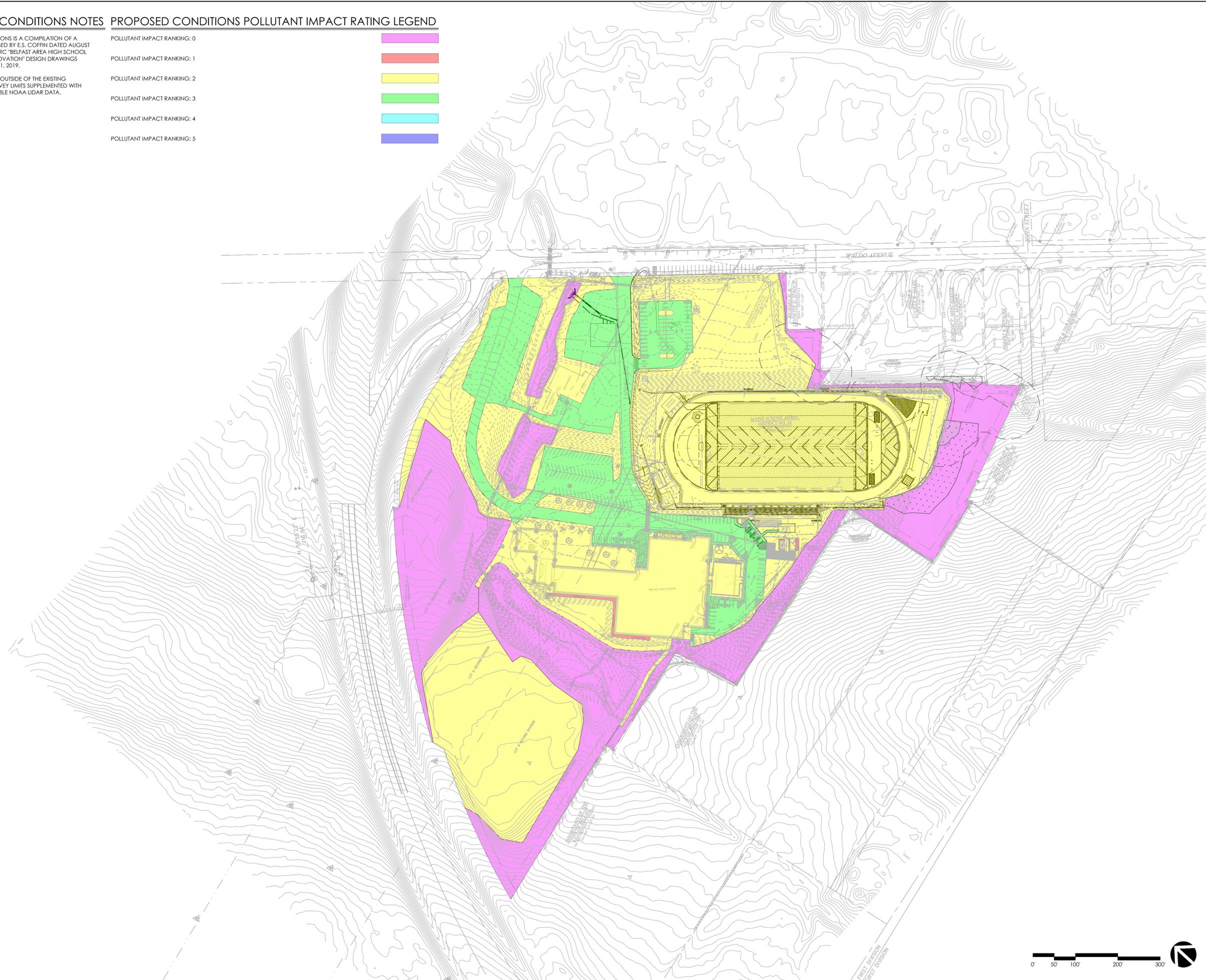
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POLLUTANT IMPACT RANKING: 2 

POLLUTANT IMPACT RANKING: 3 

POLLUTANT IMPACT RANKING: 4 

POLLUTANT IMPACT RANKING: 5 



**CONSULTANTS**

WETLAND DELINEATION -  
HALEY WARD, INC.

SURVEY -  
E.S. COFFIN ENGINEERING & SURVEYING, INC.

GEOTECHNICAL ENGINEER -  
HALEY & ALDRICH, INC

**RSU 71 BELFAST AREA  
HIGH SCHOOL**  
 Belfast, ME  
 Site Location of Development Act

Permitting Documents  
April 25, 2025

REVISIONS:

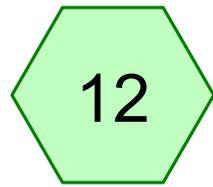
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 PROJECT NO.: 24002.00  
 FILE: 24002.00-EX\_CONDITIONS.dwg  
 DRAWN: BJM  
 CHECKED: SRC/HG

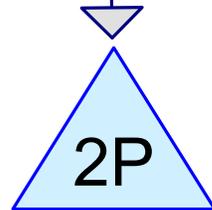
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SHEET TITLE:  
**PROPOSED POLLUTANT  
IMPACT RATING PLAN**

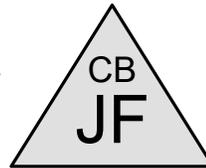
SHEET NO:  
**12-5**



Subcat 12



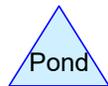
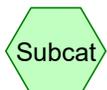
Parking Lot Detention



TREATMENT



DP-1



## 24002-HydroCAD-Proposed\_Conditions\_Water\_Quality

Prepared by Activitas, Inc

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Page 2

### Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Inch	Type III 24-hr		Default	24.00	1	1.00	2

**24002-HydroCAD-Proposed\_Conditions\_Water\_Quality** Type III 24-hr 1-Inch Rainfall=1.00"

Prepared by Activitas, Inc

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Page 3

Time span=0.00-49.00 hrs, dt=0.01 hrs, 4901 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 12: Subcat 12**

Runoff Area=1.380 ac 73.74% Impervious Runoff Depth=0.50"  
Flow Length=645' Tc=12.5 min CN=94 Runoff=0.66 cfs 0.058 af

**Reach DP-1: DP-1**

Inflow=0.11 cfs 0.058 af  
Outflow=0.11 cfs 0.058 af

**Pond 2P: Parking Lot Detention**

Peak Elev=110.58' Storage=882 cf Inflow=0.66 cfs 0.058 af  
Primary=0.11 cfs 0.058 af Secondary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.058 af

**Pond JF: TREATMENT**

Peak Elev=109.69' Inflow=0.11 cfs 0.058 af  
Outflow=0.11 cfs 0.058 af

**Total Runoff Area = 1.380 ac Runoff Volume = 0.058 af Average Runoff Depth = 0.50"**  
**26.26% Pervious = 0.362 ac 73.74% Impervious = 1.017 ac**

**Summary for Subcatchment 12: Subcat 12**

Runoff = 0.66 cfs @ 12.18 hrs, Volume= 0.058 af, Depth= 0.50"  
 Routed to Pond 2P : Parking Lot Detention

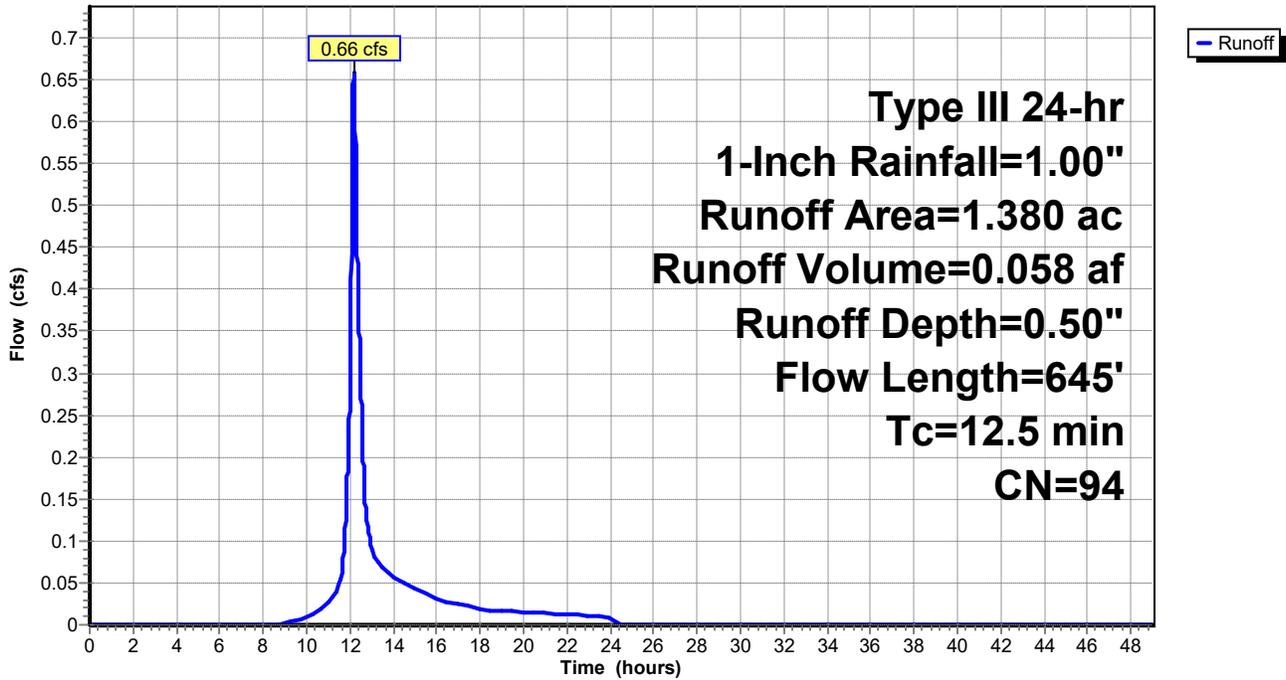
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-49.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Inch Rainfall=1.00"

Area (ac)	CN	Description
0.260	80	>75% Grass cover, Good, HSG D
0.103	96	Gravel surface, HSG D
1.017	98	Paved parking, HSG D
0.000	98	Roofs, HSG D
1.380	94	Weighted Average
0.362		26.26% Pervious Area
1.017		73.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0063	0.09		<b>Sheet Flow, A</b> Grass: Short n= 0.150 P2= 2.90"
0.1	4	0.0063	0.56		<b>Shallow Concentrated Flow, B</b> Short Grass Pasture Kv= 7.0 fps
0.8	212	0.0470	4.40		<b>Shallow Concentrated Flow, C</b> Paved Kv= 20.3 fps
0.6	87	0.1290	2.51		<b>Shallow Concentrated Flow, D</b> Short Grass Pasture Kv= 7.0 fps
1.6	292	0.0360	3.05		<b>Shallow Concentrated Flow, E</b> Unpaved Kv= 16.1 fps
12.5	645	Total			

Subcatchment 12: Subcat 12

Hydrograph



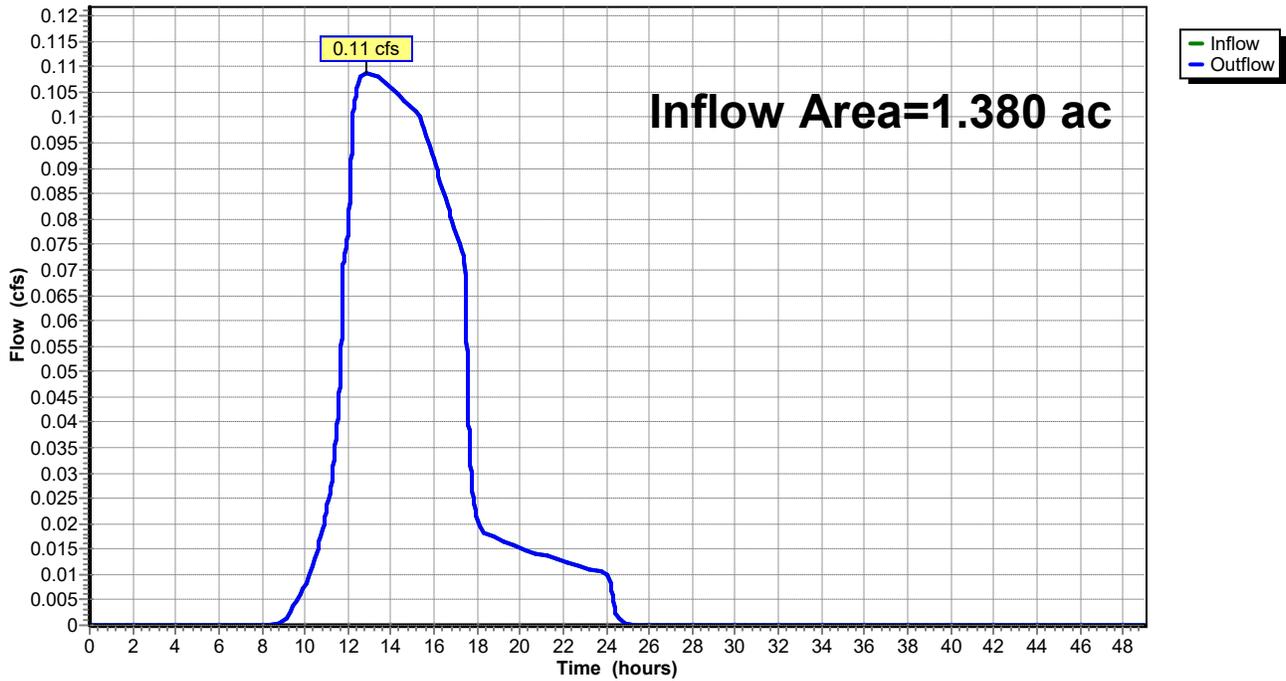
### Summary for Reach DP-1: DP-1

Inflow Area = 1.380 ac, 73.74% Impervious, Inflow Depth = 0.50" for 1-Inch event  
Inflow = 0.11 cfs @ 12.86 hrs, Volume= 0.058 af  
Outflow = 0.11 cfs @ 12.86 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-49.00 hrs, dt= 0.01 hrs

### Reach DP-1: DP-1

#### Hydrograph



**Summary for Pond 2P: Parking Lot Detention**

Inflow Area = 1.380 ac, 73.74% Impervious, Inflow Depth = 0.50" for 1-Inch event  
 Inflow = 0.66 cfs @ 12.18 hrs, Volume= 0.058 af  
 Outflow = 0.11 cfs @ 12.86 hrs, Volume= 0.058 af, Atten= 83%, Lag= 41.1 min  
 Primary = 0.11 cfs @ 12.86 hrs, Volume= 0.058 af  
 Routed to Pond JF : TREATMENT  
**Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af**  
 Routed to Reach DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-49.00 hrs, dt= 0.01 hrs / 4  
 Peak Elev= 110.58' @ 12.86 hrs Surf.Area= 3,240 sf Storage= 882 cf

Plug-Flow detention time= 70.1 min calculated for 0.058 af (100% of inflow)  
 Center-of-Mass det. time= 70.1 min ( 909.0 - 838.8 )

Volume	Invert	Avail.Storage	Storage Description
#1A	109.93'	1,727 cf	<b>60.00'W x 54.00'L x 2.54'H Field A</b> 8,235 cf Overall - 2,479 cf Embedded = 5,756 cf x 30.0% Voids
#2A	110.43'	2,479 cf	<b>Cultec R-150XLHD x 90 Inside #1</b> 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 18 rows
#3	112.47'	1 cf	<b>Custom Stage Data (Prismatic) Listed below (Recalc)</b>
		4,207 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.47	1	0	0
114.00	0	1	1

Device	Routing	Invert	Outlet Devices
#1	Primary	109.43'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Secondary	112.33'	<b>15.0" Round Culvert X 2.00</b> L= 78.0' Ke= 0.900 Inlet / Outlet Invert= 112.33' / 109.00' S= 0.0427 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=0.11 cfs @ 12.86 hrs HW=110.58' (Free Discharge)

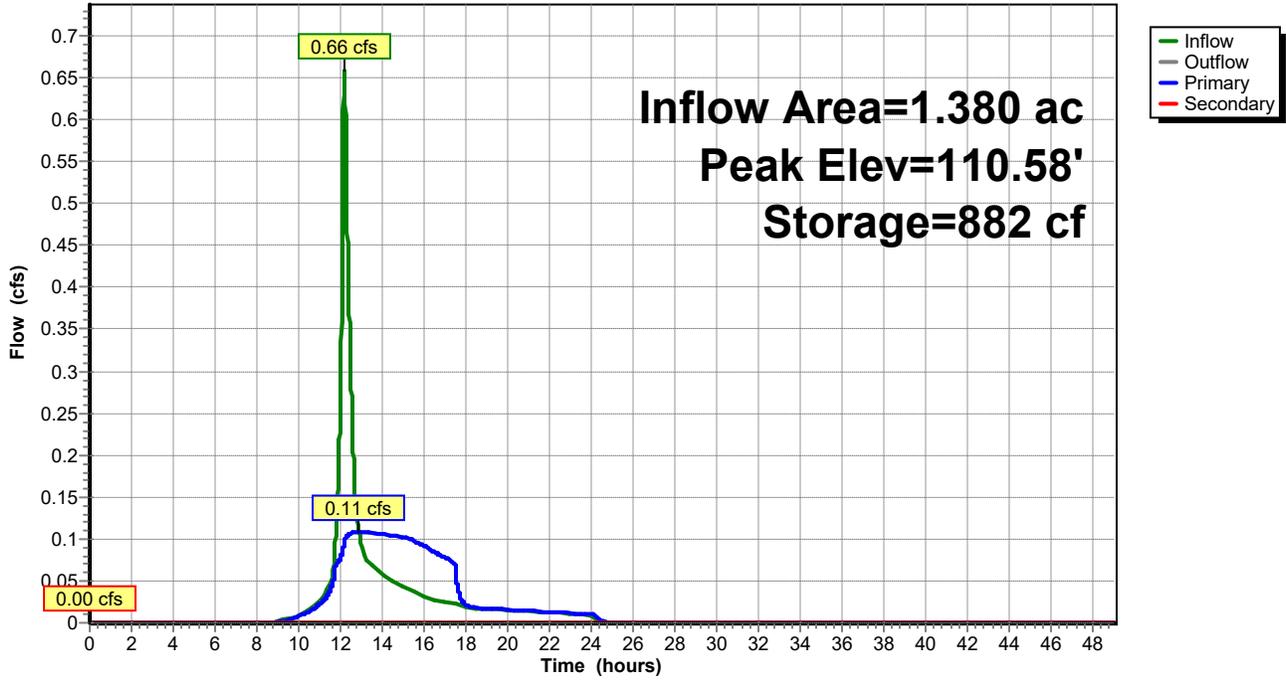
↑**1=Orifice/Grate** (Orifice Controls 0.11 cfs @ 4.98 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=109.93' (Free Discharge)

↑**2=Culvert** ( Controls 0.00 cfs)

### Pond 2P: Parking Lot Detention

Hydrograph



**Stage-Area-Storage for Pond 2P: Parking Lot Detention**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
109.93	0	110.45	538	110.97	1,836
109.94	10	110.46	564	110.98	1,860
109.95	19	110.47	590	110.99	1,884
109.96	29	110.48	615	111.00	1,908
109.97	39	110.49	641	111.01	1,932
109.98	49	110.50	667	111.02	1,956
109.99	58	110.51	692	111.03	1,980
110.00	68	110.52	718	111.04	2,004
110.01	78	110.53	744	111.05	2,028
110.02	87	110.54	769	111.06	2,051
110.03	97	110.55	794	111.07	2,075
110.04	107	110.56	820	111.08	2,099
110.05	117	110.57	845	111.09	2,122
110.06	126	110.58	870	111.10	2,146
110.07	136	110.59	896	111.11	2,169
110.08	146	110.60	921	111.12	2,193
110.09	156	110.61	946	111.13	2,216
110.10	165	110.62	971	111.14	2,239
110.11	175	110.63	996	111.15	2,262
110.12	185	110.64	1,021	111.16	2,286
110.13	194	110.65	1,046	111.17	2,309
110.14	204	110.66	1,071	111.18	2,332
110.15	214	110.67	1,096	111.19	2,355
110.16	224	110.68	1,121	111.20	2,377
110.17	233	110.69	1,146	111.21	2,400
110.18	243	110.70	1,171	111.22	2,423
110.19	253	110.71	1,196	111.23	2,446
110.20	262	110.72	1,221	111.24	2,468
110.21	272	110.73	1,246	111.25	2,491
110.22	282	110.74	1,271	111.26	2,513
110.23	292	110.75	1,295	111.27	2,535
110.24	301	110.76	1,320	111.28	2,558
110.25	311	110.77	1,345	111.29	2,580
110.26	321	110.78	1,370	111.30	2,602
110.27	330	110.79	1,395	111.31	2,624
110.28	340	110.80	1,419	111.32	2,646
110.29	350	110.81	1,444	111.33	2,667
110.30	360	110.82	1,469	111.34	2,689
110.31	369	110.83	1,494	111.35	2,711
110.32	379	110.84	1,518	111.36	2,732
110.33	389	110.85	1,543	111.37	2,754
110.34	399	110.86	1,567	111.38	2,775
110.35	408	110.87	1,592	111.39	2,796
110.36	418	110.88	1,616	111.40	2,817
110.37	428	110.89	1,641	111.41	2,838
110.38	437	110.90	1,665	111.42	2,859
110.39	447	110.91	1,690	111.43	2,880
110.40	457	110.92	1,714	111.44	2,900
110.41	467	110.93	1,739	111.45	2,921
110.42	476	110.94	1,763	111.46	2,941
110.43	486	110.95	1,787	111.47	2,962
110.44	512	110.96	1,811	111.48	2,982

**Stage-Area-Storage for Pond 2P: Parking Lot Detention (continued)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
111.49	3,002	112.01	3,757	112.53	4,206
111.50	3,022	112.02	3,767	112.54	4,206
111.51	3,042	112.03	3,777	112.55	4,206
111.52	3,061	112.04	3,787	112.56	4,206
111.53	3,081	112.05	3,796	112.57	4,206
111.54	3,100	112.06	3,806	112.58	4,206
111.55	3,119	112.07	3,816	112.59	4,206
111.56	3,138	112.08	3,825	112.60	4,206
111.57	3,157	112.09	3,835	112.61	4,206
111.58	3,176	112.10	3,845	112.62	4,206
111.59	3,194	112.11	3,855	112.63	4,206
111.60	3,213	112.12	3,864	112.64	4,206
111.61	3,231	112.13	3,874	112.65	4,206
111.62	3,249	112.14	3,884	112.66	4,206
111.63	3,267	112.15	3,893	112.67	4,206
111.64	3,285	112.16	3,903	112.68	4,206
111.65	3,302	112.17	3,913	112.69	4,206
111.66	3,319	112.18	3,923	112.70	4,206
111.67	3,336	112.19	3,932	112.71	4,206
111.68	3,353	112.20	3,942	112.72	4,206
111.69	3,370	112.21	3,952	112.73	4,206
111.70	3,386	112.22	3,962	112.74	4,206
111.71	3,402	112.23	3,971	112.75	4,206
111.72	3,418	112.24	3,981	112.76	4,206
111.73	3,433	112.25	3,991	112.77	4,206
111.74	3,448	112.26	4,000	112.78	4,206
111.75	3,462	112.27	4,010	112.79	4,206
111.76	3,477	112.28	4,020	112.80	4,206
111.77	3,491	112.29	4,030	112.81	4,206
111.78	3,504	112.30	4,039	112.82	4,206
111.79	3,518	112.31	4,049	112.83	4,206
111.80	3,531	112.32	4,059	112.84	4,206
111.81	3,544	112.33	4,068	112.85	4,206
111.82	3,556	112.34	4,078	112.86	4,206
111.83	3,568	112.35	4,088	112.87	4,206
111.84	3,580	112.36	4,098	112.88	4,206
111.85	3,592	112.37	4,107	112.89	4,206
111.86	3,603	112.38	4,117	112.90	4,206
111.87	3,615	112.39	4,127	112.91	4,207
111.88	3,626	112.40	4,136	112.92	4,207
111.89	3,637	112.41	4,146	112.93	4,207
111.90	3,648	112.42	4,156	112.94	4,207
111.91	3,659	112.43	4,166	112.95	4,207
111.92	3,669	112.44	4,175	112.96	4,207
111.93	3,680	112.45	4,185	112.97	4,207
111.94	3,689	112.46	4,195	112.98	4,207
111.95	3,699	112.47	4,205	112.99	4,207
111.96	3,709	112.48	4,206	113.00	4,207
111.97	3,719	112.49	4,206	113.01	4,207
111.98	3,728	112.50	4,206	113.02	4,207
111.99	3,738	112.51	4,206	113.03	4,207
112.00	3,748	112.52	4,206	113.04	4,207

**Stage-Area-Storage for Pond 2P: Parking Lot Detention (continued)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
113.05	4,207	113.57	4,207
113.06	4,207	113.58	4,207
113.07	4,207	113.59	4,207
113.08	4,207	113.60	4,207
113.09	4,207	113.61	4,207
113.10	4,207	113.62	4,207
113.11	4,207	113.63	4,207
113.12	4,207	113.64	4,207
113.13	4,207	113.65	4,207
113.14	4,207	113.66	4,207
113.15	4,207	113.67	4,207
113.16	4,207	113.68	4,207
113.17	4,207	113.69	4,207
113.18	4,207	113.70	4,207
113.19	4,207	113.71	4,207
113.20	4,207	113.72	4,207
113.21	4,207	113.73	4,207
113.22	4,207	113.74	4,207
113.23	4,207	113.75	4,207
113.24	4,207	113.76	4,207
113.25	4,207	113.77	4,207
113.26	4,207	113.78	4,207
113.27	4,207	113.79	4,207
113.28	4,207	113.80	4,207
113.29	4,207	113.81	4,207
113.30	4,207	113.82	4,207
113.31	4,207	113.83	4,207
113.32	4,207	113.84	4,207
113.33	4,207	113.85	4,207
113.34	4,207	113.86	4,207
113.35	4,207	113.87	4,207
113.36	4,207	113.88	4,207
113.37	4,207	113.89	4,207
113.38	4,207	113.90	4,207
113.39	4,207	113.91	4,207
113.40	4,207	113.92	4,207
113.41	4,207	113.93	4,207
113.42	4,207	113.94	4,207
113.43	4,207	113.95	4,207
113.44	4,207	113.96	4,207
113.45	4,207	113.97	4,207
113.46	4,207	113.98	4,207
113.47	4,207	113.99	4,207
113.48	4,207	114.00	<b>4,207</b>
113.49	4,207		
113.50	4,207		
113.51	4,207		
113.52	4,207		
113.53	4,207		
113.54	4,207		
113.55	4,207		
113.56	4,207		

### Summary for Pond JF: TREATMENT

Inflow Area = 1.380 ac, 73.74% Impervious, Inflow Depth = 0.50" for 1-Inch event  
 Inflow = 0.11 cfs @ 12.86 hrs, Volume= 0.058 af  
 Outflow = 0.11 cfs @ 12.86 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.11 cfs @ 12.86 hrs, Volume= 0.058 af  
 Routed to Reach DP-1 : DP-1

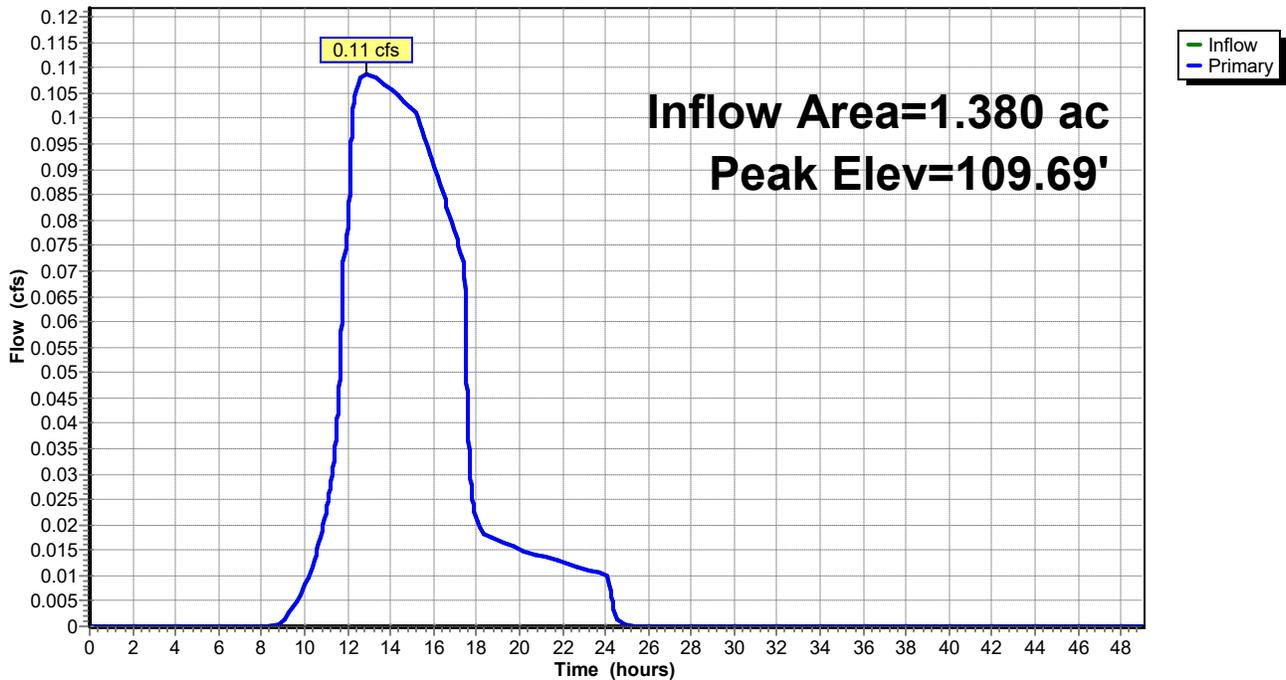
Routing by Stor-Ind method, Time Span= 0.00-49.00 hrs, dt= 0.01 hrs / 3  
 Peak Elev= 109.69' @ 12.86 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	109.00'	<b>JF CSV File</b> Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 0.58 0.67 0.75 0.83 0.92 1.00 1.08 1.17 1.25 1.33 1.42 1.50 2.00 3.00 4.00 Disch. (cfs) 0.000 0.005 0.010 0.015 0.020 0.025 0.030 0.064 0.099 0.134 0.168 0.203 0.238 0.272 0.307 0.342 0.376 0.411 0.446 0.446 0.446 0.446

Primary OutFlow Max=0.11 cfs @ 12.86 hrs HW=109.69' (Free Discharge)  
 ↳1=JF CSV File (Custom Controls 0.11 cfs)

### Pond JF: TREATMENT

Hydrograph



April 25, 2025

Ben McDonough, EIT  
Activitas Inc.  
Sixteen School Street  
Dedham, MA 02026

RE: RSU 71 Belfast Area High School (Contech Reference No. 831455)  
Review of Jellyfish Design

Dear Mr. McDonough,

The purpose of this letter is to document review of the plans and the proposed application of the Jellyfish water quality unit for the RSU 71 Belfast Area High School project.

Contech Engineered Solutions (Contech) has reviewed the Jellyfish Filter design for the project. We believe the Jellyfish Filter is an appropriate water quality solution for this site. The Jellyfish system is approved for use by MEDEP meeting the General Standards of the Stormwater Rules (Chapter 500) if designed, installed, and maintained in accordance with the provisions noted in the January 21, 2015 approval letter from the MEDEP.

The engineer of record reports a drainage area of 1.42 acres, of which, 1.16 acres is impervious, with the Jellyfish structure downstream of a detention system. The Jellyfish is designed in accordance with the tested hydraulic and sediment loading rate of the 54-inch Hi-Flo cartridges at 80 gpm and Drain Down cartridge at 40 gpm. In order to adequately treat the runoff from this area, Contech recommends a Jellyfish 48" Manhole with 54" cartridges (2 Hi-Flo and 1 Drain Down) with model designation JF4-2-1 (54" cartridges).

Our systems require periodic maintenance to continue operating properly. Given typical runoff pollutant loading rates, Contech recommends maintenance inspections on an annual basis. Maintenance should be performed when sediment depth reaches 12" of accumulation.

This system is expected to operate in accordance with Contech's design intent. Please feel free to contact me if you have any questions or concerns.

Sincerely,



David Adams, PE  
Project Engineer  
Contech Engineered Solutions LLC  
[dave.adams@conteches.com](mailto:dave.adams@conteches.com)



# Jellyfish Filter Design Calculation

Contech Engineered Solutions, LLC Engineer:  
Date Prepared:

DRA  
4/25/2025

## Site Information

Project Name	RSU 71 Belfast Area High School
Project State	Belfast
Project City	ME
Site Designation	JF
Total Drainage Area, Ad	1.42 ac
Post Development Impervious Area, Ai	1.16 ac
Pervious Area, Ap	0.26 ac
% Impervious	82%
Runoff Coefficient, Rc	0.79
Upstream pretreatment credit	50%

## Mass Loading Calculations

Mean Annual Rainfall, P	48 in
Agency Required % Removal	80%
Percent Runoff Capture	90%
Mean Annual Runoff, Vt	174,701 ft <sup>3</sup>
Event Mean Concentration of Pollutant, EMC	70 mg/l
Annual Mass Load, M total	763 lbs

## Filter System

Filtration Brand	JellyFish
Cartridge Length	54 in

## Jelly Fish Sizing

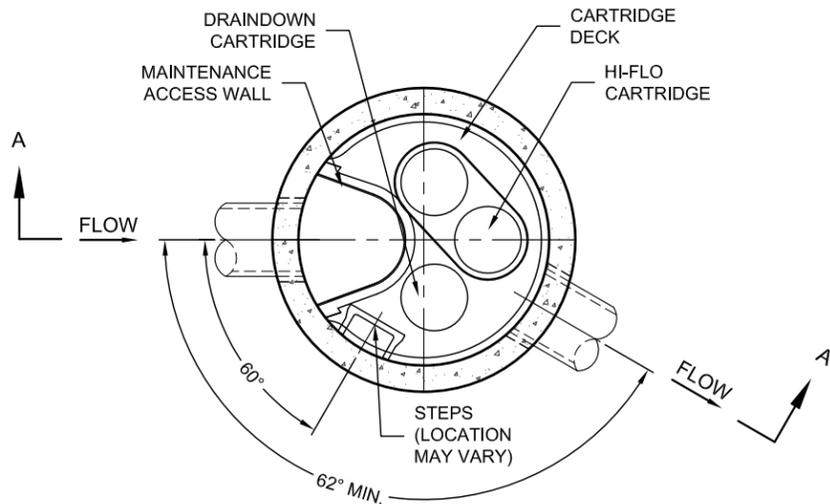
Mass removed by pretreatment system	381 lbs
Mass load to filters after pretreatment	381 lbs
Mass to be Captured by System	305 lbs
Water Quality Flow	0.10 cfs

## Method to Use

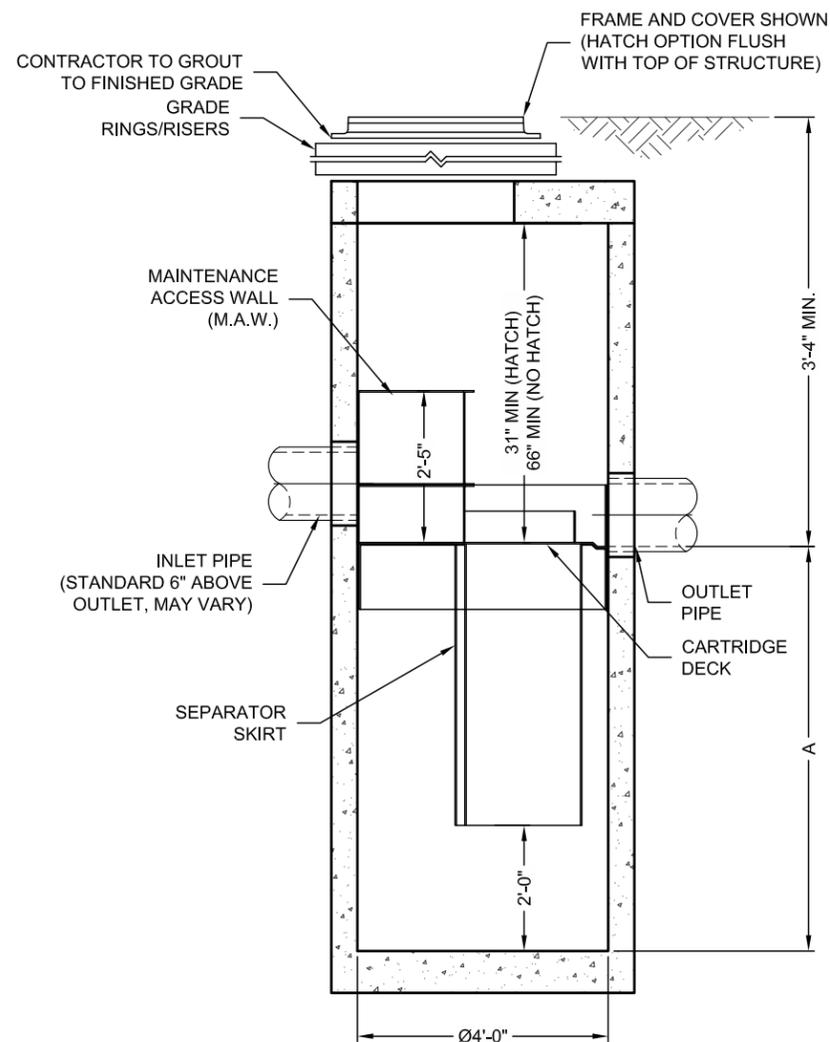
## MASS LOADING

Summary		
Mass	Treatment Mass	313 lbs
	Required Size	JFPD0406-2-1
	WQ Flow provided	0.45 cfs

I:\COMMON\CAD\TREATMENT\13 JELLYFISH FILTER\40 STANDARD DRAWINGS\OFFLINE\DWG\JF4-OFFLINE-DTL.DWG 5/11/2017 3:54 PM



**PLAN VIEW**



**SECTION A-A**

**Jellyfish® Filter**

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENT NO. 8,287,726, 8,221,618 & US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

**JELLYFISH DESIGN NOTES**

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø48" MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 0.45 CFS. IF THE SITE CONDITIONS EXCEED 0.45 CFS AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

**CARTRIDGE SELECTION**

CARTRIDGE DEPTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-5"	5'-3"	4'-2"	3'-2"
FLOW RATE HIGH-FLO / DRAINDOWN (cfs) (per cart)	0.18 / 0.09	0.13 / 0.065	0.09 / 0.045	0.05 / 0.025
MAX. CARTS HIGH-FLO / DRAINDOWN	2 / 1			

**SITE SPECIFIC DATA REQUIREMENTS**

STRUCTURE ID	*
WATER QUALITY FLOW RATE (cfs)	*
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED (HF / DD)	* / *
CARTRIDGE SIZE	*

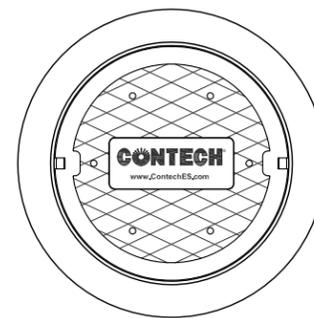
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	*	*	*
INLET PIPE #2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION \_\_\_\_\_ \*

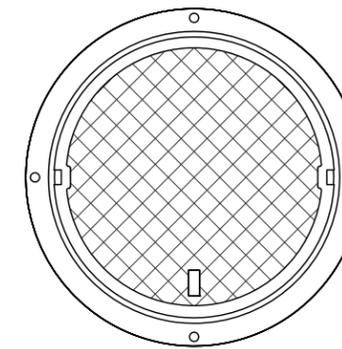
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

\* PER ENGINEER OF RECORD



**FRAME AND COVER**  
(DIAMETER VARIES)  
N.T.S.



**HATCH**  
(Ø36" CAST INTO SLAB)  
N.T.S.

**GENERAL NOTES:**

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. [www.ContechES.com](http://www.ContechES.com)
- JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
- STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
- NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

**INSTALLATION NOTES**

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
- CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
- CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.



[www.ContechES.com](http://www.ContechES.com)  
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069  
800-338-1122 513-645-7000 513-645-7993 FAX

**JELLYFISH JF4  
STANDARD DETAIL  
OFFLINE CONFIGURATION**



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

January 21, 2015

CONTECH Engineered Solutions LLC  
71 US Route 1, Suite F  
Scarborough, ME 04074  
ATTN: Derek Berg

Dear Mr. Berg:

This letter is to inform you that the Department of Environmental Protection (Department) will review and approve, on a case-by-case basis, applicants' requests to use the Jellyfish Filter, manhole or vault housing, a cartridge deck supporting membrane filtration cartridges, as a low flow rate filter meeting the requirements of the General Standards (Section 4.B.) of the Stormwater Management Rules (Chapter 500) when sized, installed and maintained in accordance with the following provisions:

1. The Jellyfish Filter must be sized in accordance with the tested hydraulic loading rate, and is approved for a maximum rate of 80 gallons per minute (gpm) for each 54-inch long membrane filter cartridge (1.48 gpm per inch of cartridge length). The structure must include at least one draindown cartridge, which is approved for a hydraulic loading rate of 40 gpm per 54" cartridge (0.74 gpm per inch of cartridge length).
2. Upstream storage must be provided for the water quality/channel protection volume (WQv) consisting of the first 1.0 inch of runoff from impervious areas and 0.4 inch of runoff from lawns and landscaped areas. The WQv should be hydraulically isolated from any additional storage provided onsite by weirs or other means so that only the WQv is routed through the Jellyfish Filter. Additionally, the WQv must be detained for a minimum of 24 hours and a maximum of 48 hours (emptying time). Storage can typically be provided in an underground facility such as corrugated metal pipe, polypropylene chambers, concrete vaults or similar means.
3. All storage systems must include sufficient maintenance access for the removal of accumulated sediment and debris. It is desirable that a pretreatment structure be located upstream of the WQv storage to facilitate capture of coarse solids and trash.
4. The Jellyfish Filter must be delivered to the site and installed under the supervision of the manufacturer's representative.
5. The system must be inspected at least once every six months, and the filters maintained yearly per the manufacturer's guidelines to maintain the established efficiency for pollutant removal. A five-year binding inspection and maintenance contract must be provided prior to review and approval by the Department, and must be renewed before contract expiration.
6. The overall stormwater management design must meet all Department criteria and sizing specifications and shall be reviewed and approved by the Department prior to use.
7. Review and approval by the manufacturer for the proposed use and sizing of the Jellyfish Filter at each specific project is required to ensure conformance with the manufacturer's design specifications.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

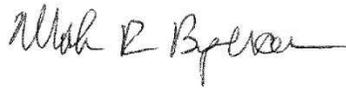
PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769  
(207) 764-0477 FAX: (207) 760-3143

8. This approval is conditional to on-the-ground experience confirming that the Jellyfish Filter's pollutant removal efficiency and sizing are appropriate. The "permit shield" provision (Section 14) of the Chapter 500 rules will apply, and the Department will not require the replacement of the system if pollutant removals do not satisfy the General Standard Best Management Practices.

We look forward to working with you as these stormwater management structures are installed on new projects. And, we hope that this stormwater BMP will be included in our manual in the near future.

Questions concerning this decision should be directed to Marianne Hubert at (207) 215-6485 or Jeff Dennis at (207) 215-6376.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark R. Bergeron". The signature is fluid and cursive, with a long horizontal stroke at the end.

Mark Bergeron, P.E.  
Director, Division of Land Resource Regulation  
Bureau of Land & Water Quality

C: Don Witherill, Maine DEP

**SECTION 14: BASIC STANDARDS**

## SECTION 14

### BASIC STANDARDS

The Belfast Regional High School campus does not have known erosion issues. All of the finished surfaces across campus are stabilized. The remainder of this section discusses the proposed track and field renovation and other site stormwater BMP installation.

- A. Narrative. The proposed track and field renovation construction will require the implementation of temporary and permanent erosion control measures. These measures will be implemented in accordance with the Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual, prior to removal of any vegetation or soil disturbance.

The proposed location and use of erosion control measures on the project site are shown on the project plans included in this application.

- B. Completion Date. Track and Field Renovations – June 2026. Site Stormwater BMP Installation – Anticipated Fall 2027.
- C. Site Features. Refer to project plans included in this application for site features.
- D. Temporary and Permanent Erosion Control Measures. Refer to the project plans included in this application for temporary and permanent erosion control measures.
- E. Limits of Disturbed Areas. The areas of disturbance are outlined in the project plans included in this application.
- F. Design Drawings and Specifications. Details for the proposed erosion control measures are included in the project plans. The following specifications will be used by the contractor during construction.

## **EROSION CONTROL PLAN SPECIFICATIONS**

### PART 1 – GENERAL

#### 1.01 GENERAL REQUIREMENTS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 00 00 - GENERAL REQUIREMENTS, which are hereby, made a part of this Section of the Specifications.
- B. Examine all other Sections of the Specifications for requirements, which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

#### 1.02 DESCRIPTION OF WORK

- A. This Section specifies equipment and materials for an erosion and sediment control program for minimizing erosion and siltation during the construction phase of the project. The erosion and sediment control provisions, including but not limited to wire backed silt fence, straw wattle, silt sacks, and other items detailed on the Drawings and specified herein are the minimum requirements for an erosion control program. The Contractor shall provide additional erosion and sediment control materials and methods as required to affect the erosion and siltation control principles specified herein.
- B. Contractor shall be responsible for applying for a NPDES Permit with the EPA. A draft SWPPP that reflects the Erosion Control Plans shall be provided to the awarded Contractor. The Contractor will need to update the SWPPP and shall coordinate the submission with the Landscape Architect/Civil Engineer.

#### 1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Site Preparation
- B. Bituminous Concrete Paving
- C. Loam and Seed
- D. Storm Drainage System

#### 1.04 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
- B. Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual.

#### 1.05 SUBMITTALS

- A. Proposed methods, materials to be employed, and schedule for effecting erosion and siltation control and preventing erosion damage shall be submitted for approval. Submittals shall include:
  - 1. Proposed methods for effecting erosion control including 1" = 30' scale plans (or other appropriate scale as approved by the Landscape Architect/Civil Engineer) indicating location of erosion control devices and siltation basins.
  - 2. List of proposed materials including manufacturer's product data.
  - 3. Schedule of erosion control program indicating specific dates from implementing programs in each major area of work.
  - 4. Copy of SWPPP.

#### 1.06 EROSION CONTROL PRINCIPLES

- A. The Contractor shall implement all soil erosion and sediment control devices prior to excavation within the site.
- B. The following erosion control principles shall apply to the land grading and construction phases:
  - 1. Stripping of vegetation, grading, or other soil disturbance shall be done in a manner that will minimize soil erosion.
  - 2. Whenever feasible, natural vegetation shall be retained and protected.
  - 3. Extent of area, which is exposed and free of vegetation, and duration of its exposure shall be kept within practical limits.
  - 4. Temporary seeding, mulching, or other suitable stabilization measures shall be used to protect exposed critical areas during prolonged construction or other land disturbance.
  - 5. Drainage provisions shall accommodate increased runoff resulting from modifications of soil and surface conditions during and after development or disturbance. Such provisions shall be in addition to existing requirements.
  - 6. Sediment shall be retained on-site.
  - 7. Erosion control devices shall be installed as early as possible in the construction sequence prior to start of clearing and grubbing operations and excavation work.
- C. Cut and fill slopes and stockpiled materials shall be protected to prevent erosion. Slopes shall be protected with permanent erosion protection when erosion exposure period is expected to be greater than or equal to six months, and temporary erosion protection when erosion exposure period is expected to be less than six months.
  - 1. Permanent erosion protection shall be accomplished by seeding with grass and covering with an erosion protection material, as appropriate for prevailing conditions.
  - 2. Temporary erosion protection shall be accomplished by covering with an erosion protection material appropriate for prevailing conditions.
  - 3. Except where specified slope is indicated on Drawings, fill slopes shall be limited to a grade of 3:1 (horizontal: vertical) cut slopes shall be limited to a grade of 2:1.

## PART 2 - PRODUCTS

2.01 EROSION CONTROL STRAW WATTLE

- A. Elongated tubes of compacted straw that shall have a minimum diameter of twelve (12") inches and shall be installed with wooden stakes.

2.02 SILT FENCE

- A. Shall be a woven polypropylene geotextile stabilized to resist degradation due to ultraviolet exposure and is non-biodegradable. Silt fence shall be a minimum of 24" wide and installed with wooden stakes.

2.03 SILT SACK

- A. Silt sack shall be manufactured from a specially designed woven polypropylene geotextile and sewn by a double needle machine, using a high strength nylon thread, and manufactured by ACF Environmental, Inc., 2831 Cardwell Road, Richmond, VA 23234 (800) 448-3636, or approved equal.

2.04 STRAW BLANKET

- A. Straw Blanket to be used on seeded 3:1 - 4:1 slopes shall be equivalent to Model ECS-1B Single Net Straw Biodegradable Rolled Erosion Control Product as manufactured by East Coast Erosion Control, 443 Bricker Road, Bernville, PA 19506.

PART 3 - EXECUTION

3.01 MAINTENANCE AND REMOVAL OF EROSION CONTROL DEVICES

- A. Drainage swales adjacent to construction activities shall be monitored twice each month for evidence of silt intrusion and other adverse environmental impacts, which shall be corrected immediately upon discovery.
- B. Culverts and drainage ditches shall be kept clean and clear of obstructions during construction period.
- C. Erosion Control Devices
  1. Sediment behind the erosion control device shall be checked twice each month and after each heavy rain. Silt shall be removed if greater than 6 in. deep.
  2. Condition of erosion control device shall be checked twice each month or more frequently as required. Damaged and/or deteriorated items shall be replaced. Erosion control devices shall be maintained in place and in effective condition.
  3. Hay bales shall be inspected frequently and maintained or replaced as required to maintain both their effectiveness and essentially their original condition. Underside of bales shall be kept in close contact with the earth below at all times, as required to prevent water from washing beneath bales.
  4. Sediment shall be removed from the retention ponds at the completion of the

Project and periodically during construction. Sediment deposits shall be removed when sediment has accumulated to a depth of 12 in. or as directed.

5. Sediment deposits shall be disposed of off- site, in a location and manner which will not cause sediment nuisance elsewhere.

D. Removal of Erosion Control Devices

1. Erosion control devices shall be maintained until all disturbed earth has been paved or vegetated, at which time they shall be removed. After removal, areas disturbed by these devices shall be regraded and seeded.
2. Erosion control netting shall be kept securely anchored until start of permanent turf construction.
3. Erosion protection material shall be kept securely anchored until acceptance of completed slope or entire Project, whichever is later.

3.02 EROSION CONTROL STRAW WATTLE

- A. Straw wattle shall be furnished and installed as indicated on the Drawings prior to the start of clearing and grubbing operations.
- B. Straw wattles shall be installed as indicated in the Drawings and shall be with stakes at a maximum 4' on center.
- C. Straw wattle shall remain in working order until the site is stabilized. Additional erosion controls shall be installed, as needed to prevent silt from leaving the site, at no additional cost to the Owner.

3.03 SILT FENCE

- A. Install in accordance with the Project Drawings.

3.04 SILT SACK

- A. Silt sack shall be installed per the manufacturer's recommendations.
- B. Silt sack shall be emptied when full and is reusable.

3.05 STRAW BLANKET

- A. Straw blanket shall be installed per the manufacturer's recommendations.

## INSPECTION AND MAINTENANCE

The following Maintenance Plan will be employed for the facility. RSU71 or their assigns will be responsible for all maintenance. Erosion control measures for the site were designed by:

Holly Ganser, PE  
Activitas, Inc  
70 Milton Street  
Dedham, MA 02026  
hcg@activitas.com

The inspection and maintenance plan for the proposed project was developed using MaineDEP's Stormwater Management for Maine: Best Management Practices (2006) and Chapter 500: Stormwater Management.

During Construction. Refer to the project drawings for details for inspection and maintenance during construction.

Post Construction. RSU71 or their assigns will be responsible for the inspection and maintenance of all the stormwater management system components.

The following standards must be met after construction.

- A. Inspection and corrective action. All measures must be maintained in effective operation condition. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.
  1. Inspect vegetated areas, particularly slope and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to onsite areas able to withstand the concentrated flows.
  2. Inspect ditches, swales and other open stormwater channels in the spring, in late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also

be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side-slopes.

3. Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit, and to repair any erosion damage at the culvert's inlet and outlet.
4. Inspect and clean out catch basins. Clean-out must include the removal and legal disposal of any accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins. If the basin outlet is designed to trap floatable materials, then remove the floating debris and any floating oils.
5. Inspect each manufactured system installed on the site, including the system's inlet, treatment chamber(s), and outlet at least once per year, or in accordance with the maintenance guidelines recommended by the manufacturer based on the estimated runoff and pollutant load expected to the system from the project. Remove and dispose of accumulated sediments, debris, and contaminated waters from the system and, if applicable, remove and replace any clogged or spent filter media.

B. Regular Maintenance.

1. Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Grading of gravel roads, or grading of the gravel shoulders of gravel or paved roads, must be routinely performed to ensure that stormwater drains immediately off the road surface to adjacent stable areas, and is not impeded by accumulations of graded material on the road shoulder or by excavation of false ditches in the shoulder.

- C. Documentation. Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Department staff and a copy provided to the Department upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization.
- D. Recertification. Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the Department.
1. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
  2. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the facilities.
  3. The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the department, and the maintenance log is being maintained.





**INSPECTION AND MAINTENANCE PLAN FOR  
STORMWATERMANAGEMENT STRUCTURES (BMPS)**

	<b>INSPECTION SCHEDULE</b>	<b>CORRECTIVE ACTIONS</b>
<b>VEGETATED AREAS</b>	Annually early spring and after heavy rains	Inspect all slopes and embankments and replant areas of bare soil or with sparse growth
		Aarmor rill erosion areas with riprap or divert the runoff to a stable area
		Inspect and repair down-slope of all spreaders and turn-outs for erosion
		Mow vegetation as specified for the area
<b>DITCHES, SWALES AND OPEN STORMWATER CHANNELS</b>	Annually spring and late fall and after heavy rains	Remove obstructions, sediments or debris from ditches, swales and other open channels
		Repair any erosion of the ditch lining
		Mow vegetated ditches
		Remove woody vegetation growing through riprap
		Repair any slumping side slopes
		Repair riprap where underlying filter fabric or gravel is showing or if stones have dislodged
<b>CULVERTS</b>	Spring and late fall and after heavy rains	Remove accumulated sediments and debris at the inlet, outlet, or within the conduit
		Remove any obstruction to flow
		Repair any erosion damage at the culvert's inlet and outlet
<b>CATCHBASINS</b>	Annually in the spring	Remove sediments and debris from the bottom of the basin and inlet grates
		Remove floating debris and oils (using oil absorptive pads) from any trap
<b>ROADWAYS AND PARKING AREAS</b>	Annually in the spring or as needed	Clear and remove accumulated winter sand in parking lots and along roadways
		Sweep pavement to remove sediment
		Grade road shoulders and remove accumulated winter sand
		Grade gravel roads and gravel shoulders
		Clean-out the sediment within water bars or open-top culverts
		Ensure that stormwater runoff is not impeded by false ditches of sediment in the shoulder
<b>FILTRATION AND INFILTRATION BASINS</b>	Annually in the spring and late fall	Clean the basin of debris, sediment and hydrocarbons
		Provide for the removal and disposal of accumulated sediments within the basin
		Renew the basin media if it fails to drain within 72 hours after a one-inch rainfall event
		Till, seed and mulch the basin if vegetation is sparse
		Repair riprap where underlying filter fabric or gravel is showing or where stones have dislodged
<b>PROPRIETARY DEVICES</b>	As specified by manufacturer	Contract with a third-party for inspection and maintenance
		Follow the manufacturer's plan for cleaning of devices
<b>OTHER PRACTICES</b>	As specified for devices	Contact the department for appropriate inspection and maintenance requirements for other drainage control and runoff treatment measures.

### **HOUSEKEEPING**

Please refer to the notes page of the project plans for the house keeping plan developed in accordance with the MaineDEP Stormwater Standards.

**SECTION 15: GROUNDWATER**

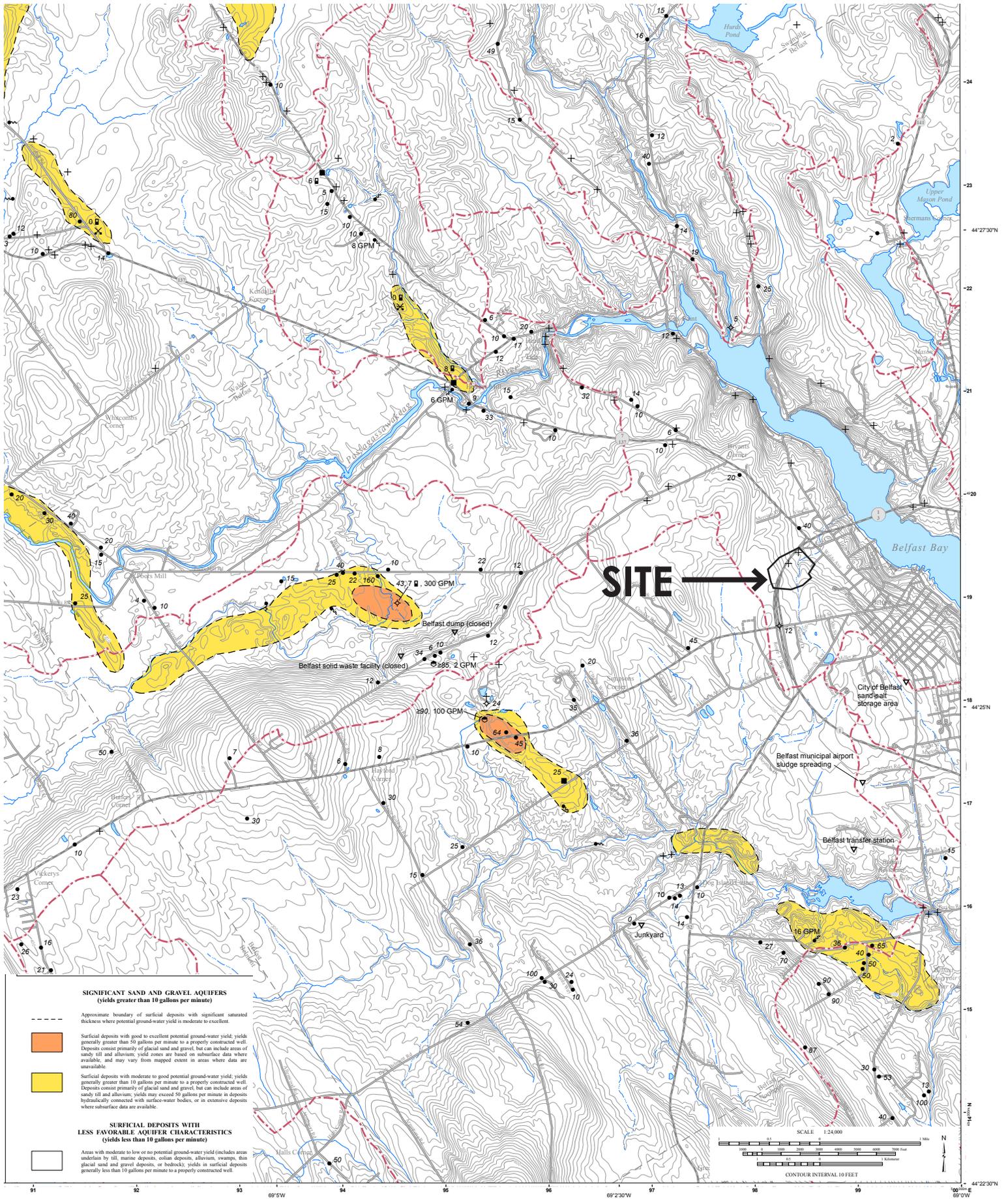
## SECTION 15

### GROUNDWATER

The Belfast Regional High School campus is not located over any mapped significant sand and gravel aquifers.

There is no historic evidence to indicate that the Belfast Regional High School development has had an unreasonable impact on ground water quality or quantity.

There will be no proposed impact to the groundwater associated with the track and field renovation project. No groundwater use or extraction is proposed. There will be no storage of chemicals or petroleum on the project site. While the proposed stormwater BMPs are located below finish grade, it has been designed to provide adequate separation from the estimated groundwater level. Please refer to the stormwater management section for discussion.



**FIGURE 15-1**  
**Significant Sand and Gravel Aquifers**

Belfast Regional High School - Belfast, ME

**ACTIVITAS**  
landscape architecture | civil engineering

70 Milton Street | Dedham, MA 02026-2915  
(781) 326-2600 | activitas.com

APRIL 25, 2025



Data Source: ME DACF  
Maine Geological Survey

**SECTION 16: WATER SUPPLY**

## SECTION 16

### WATER SUPPLY

The Belfast Regional High School development water is supplied by the Belfast public water supply and the currently supply is sufficient for the development.

The track and field renovation project is not proposing any new water supplies to be provided to that area of the development and will not be changing the current water demand of the campus development.

**SECTION 17: WASTE WATER DISPOSAL**

## SECTION 17

### WASTE WATER DISPOSAL

The Belfast Regional High School development waste water disposal system is via the Town of Belfast sewer infrastructure and the system is sufficient to handle the flows for the development.

The track and field renovation project is not proposing any new waste water disposal connections and will not be changing the current demand on the existing sewer system of the campus development.

**SECTION 18: SOLID WASTE**

## SECTION 18

### SOLID WASTE

The Belfast Regional High School currently has dumpsters on site that are serviced by the City of Belfast Public Works which are sufficient for the school use.

The proposed track and field renovations will not generate any more solid waste as a result of the project. During construction, the chosen contractor will hire a dumpster specific for construction solid waste and will be responsible for offsite disposal of said waste.

**SECTION 19: FLOODING**

## SECTION 19

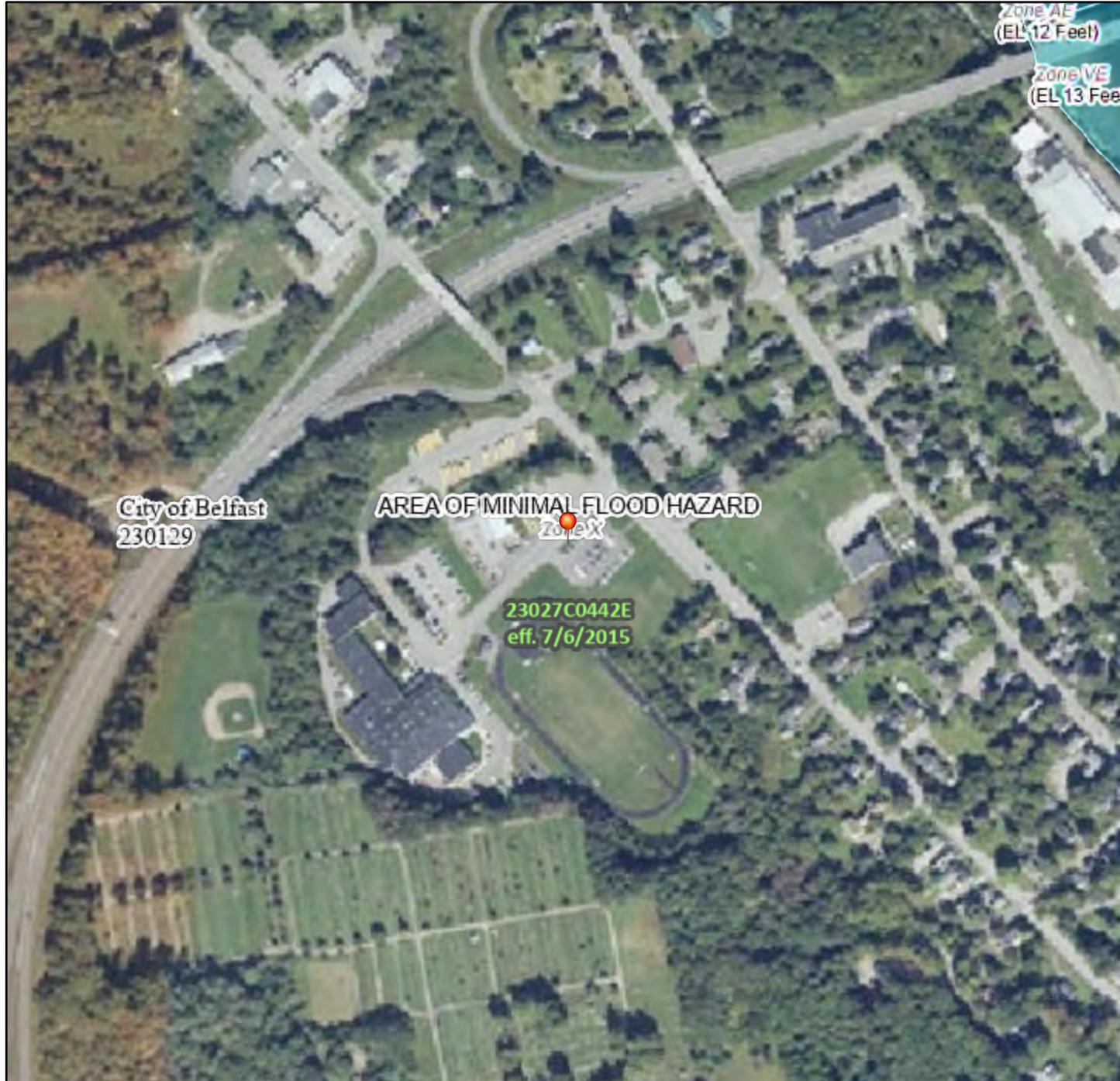
### FLOODING

The Belfast Regional High School development is not located within the 100-year flood zone. The development is located in Flood Zone "X", which is defined as areas of minimal flood hazard. The project is not at risk for flooding and as demonstrated by Section 12 will not increase flooding risk on adjacent properties.

# National Flood Hazard Layer FIRMMette



69°1'19"W 44°25'59"N



1:6,000

69°0'41"W 44°25'34"N

Basemap Imagery Source: USGS National Map 2023

## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/25/2024 at 9:39 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**SECTION 20: BLASTING**

## SECTION 20

### BLASTING

The proposed track and field project does not require blasting of any areas within or around the project site limits. The proposed project will take place at the existing track and field with no significant changes to the existing topography.

**SECTION 21: AIR EMISSIONS**

## SECTION 21

### AIR EMISSIONS

The Belfast Regional High School campus does not produce point source air emissions. Non-point source air emissions associated with the campus include vehicular driveways and parking areas and exhaust from the heating and cooling systems of the school buildings. However, these non-point sources are typical with a school development and do not present a concern for air quality.

The proposed track and field renovations will not generate any new point source or non-point source air emissions.

**SECTION 22: ODORS**

## SECTION 22

### ODORS

The Belfast Regional High School does not generate any significant odors.

The proposed track and field project is not proposing any new odor producers and will not create a change from the current condition of the campus.

**SECTION 23: WATER VAPOR**

## SECTION 23

### WATER VAPOR

The Belfast Regional High School campus does not emit any large-scale water vapor on the development.

The proposed track and field renovation will not generate any water vapor.

**SECTION 24: SUNLIGHT**

## SECTION 24

### SUNLIGHT

The Belfast Regional High School campus does not have any structures that block any surrounding structures' access to direct sunlight.

The track and field renovations will not be proposing any structures that will block access to direct sunlight on the campus's existing structures or any structures on adjacent properties.

**SECTION 25: NOTICES**

# Public Notices

## WALDO COUNTY

**OFFICE CLOSING**  
**As of 3/27/2025, Dr. James Delehanty's office is closed.**  
 After that date call 207-338-2413 to arrange to obtain records. Leave a message and you will be contacted.

**TOWN OF FRANKFORT Invitation to Bid**  
 The Town of Frankfort is taking bids for municipal mowing. Areas of mowing are the Frankfort/Post Office, Memorial Park, Frankfort Recreation Fields/ball field for regular mowing through out the mowing season. There are 4 cemeteries that need mowing only 3 times a season. Proof of insurance and workers' comp (or a predetermination letter from the State of Maine) are required. Please contact the town office for bid form, 207-223-5546. The Selectmen have the right to accept or deny any or all bids. All bid forms are due to town office by April 14, 2025 by 6:00 pm.

**STATE OF MAINE**  
 WALDO COUNTY PROBATE COURT  
 PROBATE NOTICES  
 TO ALL PERSONS INTERESTED IN ANY OF THE MATTERS LISTED BELOW:  
 An application has been filed by the applicant, listed below, to probate the will and to have a Personal Representative appointed for this estate. This application has been granted. If you disagree with the probate of the will and the appointment of personal representatives, you may begin a formal proceeding in this court. Notice is hereby given to the unknown heirs of this estate, pursuant to Maine Rules of Probate Procedure Rule 4(d)(1)(A) and Rule 4 (e)(1).  
**2025-0070 ESTATE OF EUGENE D. HALEY, SR.**, late of Troy, deceased. Sharon Mitchell, P.O. Box 324, Unity, Maine 04988, applicant and Personal Representative. **THIS NOTICE IS FURTHER DIRECTED TO JUDITH ANN THOMAS (HALEY), HEIR OF THIS ESTATE, WHOSE CURRENT WHEREABOUTS ARE UNKNOWN AND CANNOT BE ASCERTAINED BY DUE DILIGENCE.**  
 Dated: March 20, 2025 /s/ Sharon W. Peavey Register of Probate

**TOWN OF STOCKTON SPRINGS LEGAL NOTICE**  
 Nomination papers for the following positions are available at the Stockton Springs Town Office beginning March 3, 2025 during regular office hours Monday through Thursday 9am-5pm. All nomination papers are due back no later than 5pm on Monday, April 14, 2025 in preparation for the June 11, 2025 Election.  
 • Stockton Springs Select Board for a three-year term being July 1, 2025 through June 30, 2028  
 • Stockton Springs Fire Chief for a one-year term being July 1, 2025 through June 30, 2026  
 Diane Reynolds, Town Clerk Stockton Springs, Maine

**STATE OF MAINE**  
 WALDO COUNTY PROBATE COURT  
**NOTICE TO CREDITORS 18-C M.R.S. §3-801(1)**  
 The following Personal Representatives have been appointed in the Estates noted. The first publication date of this notice is April 3, 2025. If you are a creditor of an Estate listed below, you must present your claim within four months of the first publication date of this Notice to Creditors or be forever barred.  
 You may present your claim by filing a written statement of your claim on a proper form with the Register of Probate of this Court or by delivering or mailing to the Personal Representative listed below at the address published by the Personal Representative's name a written statement of the claim indicating the basis therefore, the name and address of the claimant and the amount claimed or in such other manner as the law may provide. See 18-C M.R.S. §3-804.  
**2025-0070 EUGENE D. HALEY, SR.**, late of Troy, deceased. Sharon Mitchell, P. O. Box 324, Unity, ME 04988, appointed Personal Representative.  
 Dated: March 28, 2025 /s/ Sharon W. Peavey Register of Probate

**NOTICE OF PUBLIC HEARING CITY OF BELFAST PLANNING BOARD**  
 The City of Belfast Planning Board, at its meeting of Wednesday, April 9, 2025, beginning at 6:00 P.M. in the Council Chambers of Belfast City Hall, which is located at 131 Church Street, shall conduct a public hearing regarding a proposed Subdivision Amendment #2 submitted by Ben Hooper of B & B Midcoast Properties LLC. The Applicant proposes utilizing subsurface wastewater systems instead of previously proposed municipal sewer for the 48 lot Little River Drive residential Subdivision located at Map 4 Lot 62-G at the end of Little River Drive. This proposed change requires Planning Board approval as stipulated on adopted Conditions of Approval and pursuant to Chapter 102 Zoning, Chapter 98 Technical Standards, and Chapter 94 Subdivisions. Written comments should be sent to the City of Belfast, Planning and Codes Dept, 131 Church St. Belfast, ME 04915. Email comments can be sent to Bub Fournier, Planning and Codes Director, at directorplanning@cityofbelfast.org. All written comments must be received before the Planning Board meeting.  
 The Planning and Codes Department has a copy of the application available for public inspection at the Department's offices in Belfast City Hall, located at 131 Church St., between the hours of 7:00 A.M. and 6:00 P.M. Monday thru Thursday. An electronic copy of the application may be on the Planning and Codes page of the city website, www.cityofbelfast.org. Questions regarding the application may be directed to Bub Fournier, Planning and Codes Director, at directorplanning@cityofbelfast.org.

Visit us online for more!

**STATE OF MAINE**  
 WALDO COUNTY PROBATE COURT  
**NOTICE TO CREDITORS 18-C M.R.S. §3-801(1)**  
 The following Personal Representatives have been appointed in the Estates noted. The first publication date of this notice is April 3, 2025. If you are a creditor of an Estate listed below, you must present your claim within four months of the first publication date of this Notice to Creditors or be forever barred.  
 You may present your claim by filing a written statement of your claim on a proper form with the Register of Probate of this Court or by delivering or mailing to the Personal Representative listed below at the address published by the Personal Representative's name a written statement of the claim indicating the basis therefore, the name and address of the claimant and the amount claimed or in such other manner as the law may provide. See 18-C M.R.S. §3-804.  
**2025-0068 BRIAN MALOON**, late of Searsport, deceased. Lance M. Palmer, 88 Savery Road, Searsport, ME 04974, appointed Personal Representative.  
**2025-0064 KENNETH A. MARSTON**, late of Unity, deceased. Kerri P. Marston, 5713 West Blvd., Youngstown, OH 44512, appointed Personal Representative.  
**2025-0072 VICTORIA YORK**, late of Stockton Springs, deceased. Danielle York, 5 Green Valley Road, Stockton Springs, ME 04981, appointed Personal Representative.  
**2025-0073 RONALD I. MOULTON, SR.**, late of Searsport, deceased. Ronald I. Moulton, Jr., 131 Loop Road, Searsport, ME 04974, appointed Personal Representative.  
**2025-0074 MARILYN FAY BAILEY**, late of Troy, deceased. Susan F. Dixon, 3030 W Coldspring Road, Greenfield, WI 53221, appointed Personal Representative.  
**2025-0079 CONRAD WARREN GRANT**, late of Winterport, deceased. Alice L. Grant, 61 Beach Bluff Terrace, Cape Elizabeth, ME 04107, appointed Personal Representative.  
**2025-0077 WESLEY ERNEST STORER**, late of Morrill, deceased. Alicia Valenzuela, 267 Poland Woods Rd., Morrill, Maine 04952, appointed Personal Representative.  
**2025-0081 MAUREEN T. FARLEY**, late of Northport, deceased. Sean Farley, 55 Pit Road, Lincolnville, ME 04849, appointed Personal Representative.  
**2025-0080 LESLIE R. HILLS**, late of Belmont, deceased. Monica L. Sprowl, 10 Main Street North, P.O. Box 62, Searsmont, Maine 04973, appointed Personal Representative.  
**2025-0084 KEITH D. GRANT**, late of Searsmont, deceased. Lisa G. Stanford, 17 Woodland Way, Searsmont, ME 04973, appointed Personal Representative.  
**2025-0083 RICHARD A. O'DONNELL JR.**, late of Belmont, deceased. Richard A. O'Donnell Sr., 437 Sam Page Road, Acton, Maine 04001, appointed Personal Representative.  
**2025-0085 RITA A. NELSON**, late of Winterport, deceased. Jeffrey D. Nelson, 129 Main Road South, Hampden, ME 04444, appointed Personal Representative.  
**2025-0086 JOAN C. BALKUS**, late of Islesboro, deceased. Frank James Knight, 89 Baxter Road, Williamstown, MA 01267, appointed Personal Representative.  
**2025-0087 LYNNETTE D. SPROCH**, late of Belmont, deceased. Emily Sproch, 129 West Passaic Ave., Bloomfield, NJ 07003, appointed Personal Representative.  
**2025-0027 MARSHALL A. HARRIMAN**, late of Waldo, deceased. Jean M. Tripp, 25 Rolerson Road, Belfast, ME 04915, appointed Personal Representative.  
**2025-0088 DARYN C. DYER**, late of Palermo, deceased. Leslie A. Dyer, 51 Dyer Straits, Palermo, ME 04354, appointed Personal Representative.  
**2025-0087 JUDITH K. WICK**, late of Belfast, deceased. Sharlene W. John, 185 Flye Point Rd., Brooklin, ME 04616, appointed Personal Representative.  
**2025-0091 CALVIN T. SWIFT**, late of Stockton Springs, deceased. Pamela J. Swift, 445 Turner Ridge Road, Palermo, ME 04354, appointed Personal Representative.  
**2025-0092 JOANNE T. SWIFT**, late of Stockton Springs, deceased. Pamela J. Swift, 445 Turner Ridge Road, Palermo, ME 04354, appointed Personal Representative.  
**2025-0093 PETER D. HADDOCK**, late of Searsport, deceased. Jennifer L. Haddock, 54 Camden Street, Rockport, ME 04856, appointed Personal Representative.  
**2025-0094 BARBARA A. TILLEY**, late of Prospect, deceased. Lisa A. Sutherland, P.O. Box 774, Bucksport, ME 04416 & Rosemarie E. Webster, 60 Stillman Street, Lewiston, ME 04240, appointed Personal Representatives.  
**2025-0097 RUTH M. MERRIFIELD**, late of Searsmont, deceased. Patricia A. Fuller, P.O. Box 154, Searsmont, Maine 04973, appointed Personal Representative.  
 Dated: March 27, 2025 /s/ Sharon W. Peavey Register of Probate

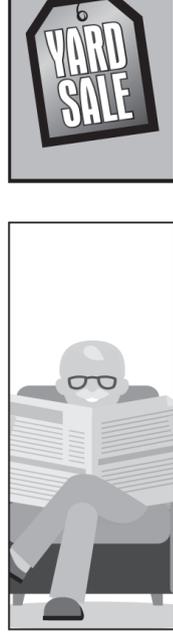
**NOTICE OF PUBLIC HEARING CITY OF BELFAST PLANNING BOARD**  
 The City of Belfast Planning Board, at its meeting of Wednesday, April 9th, 2025, beginning at 6:00 pm in the Belfast City Hall Council Chambers, located at 131 Church Street, Belfast, ME 04915, shall conduct a public hearing on a Site Plan Amendment #1 for a proposed food truck park at the former Wentworth Event Center location at 139 Searsport Avenue Map 26, Lot 12. Kristine Wentworth, Applicant, is proposing to add additional buildings on the food truck park portion of the parcel, and to add infrastructure to support a single-family residential portion of the parcel closest to the shore. The Planning Board will review the proposed amendments and determine compliance with standards identified in the City Code of Ordinances, Chapter 90 Site Plan, Chapter 102 Zoning and Chapter 98 Technical Standards.  
 The public is invited to attend the hearings in person at Belfast City Hall, to watch the meeting on BeTV or live stream at cityofbelfast.org. Comments can be offered to the Board during the public hearing period. The Public may also provide written comments to the Planning Board. Comments can be mailed to the City of Belfast, Planning and Codes Department 131 Church St., Belfast, ME 04915, or emailed to directorplanning@cityofbelfast.org. All written comments must be received by 12pm noon on April 9th before the Planning Board meeting.  
 A copy of the application available for public inspection is available at Belfast City Hall between the hours of 7:00 am and 6:00 pm Monday through Thursday. Questions regarding the application can be directed to Bub Fournier Director of Planning and Codes, at 338-3370 ext. 125, or by email at directorplanning@cityofbelfast.org.

*Be sure to check out this week's YARD SALES!*  
 On Page 1!

**GET THE JOB YOU WANT!**  
 Check out the HELP WANTEDS

**PUBLIC NOTICE: NOTICE OF INTENT TO FILE AND PUBLIC INFORMATION MEETING**  
 Please take notice that RSU 71, 41 Lions Way, Belfast, ME 04915 is intending to file a Permit Application with the Maine Department of Environmental Protection pursuant to the Site Location of Development Act under the provisions of 38 M.R.S.A. §§ 481 thru 490 on or about April 25th, 2025.  
 The application is an after the fact filing for the Belfast Area High School Development located at 25 Lions Way, Belfast, ME 04915 as it is subject to Site Location of Development Law Act. The application includes future redevelopment at the existing track and field. Future improvements include expansion of the track oval and conversion of the existing natural grass field within the oval to a synthetic turf surface. Other site improvements include upgrading the existing athletic lighting, new spectator seating, other site and drainage improvements.  
 An informational meeting will be held to discuss the project and its anticipated environmental impacts as well as to educate the public about the opportunities for public comment on the project. The meeting will be held:  
**Monday, April 14th, 2025, at 4:00pm at Belfast Area High School (25 Lions Way, Belfast, Maine)**  
 A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.  
 The application will be filed for public inspection at the Department of Environmental Protection's office in Augusta during normal working hours. A copy of the application may also be seen at the municipal offices in Belfast, Maine.  
 Written public comments may be sent to the regional office in Augusta where the application is filed for public inspection: **MDEP, Central Main Regional Office, 28 Tyson Drive, Augusta, Maine 04333.**

**STATE OF MAINE**  
 WALDO COUNTY PROBATE COURT  
 PROBATE NOTICES  
 TO ALL PERSONS INTERESTED IN ANY OF THE MATTERS LISTED BELOW:  
 Notice is hereby given by the respective Petitioners that they have filed formal petitions concerning the following matters. These matters will be heard at 9:45 AM or as soon thereafter as they may be, on April 22, 2025. The requests may be made on or after the hearing date, if no sufficient objection be heard. This notice complies with the requirements of 18-C M.R.S. § 3-403 and Maine Probate Rule 4. (List shall show name of Petitioner and address and telephone number at which Petitioner or his attorney may be reached).  
**2025-0078 WILLIAM L. HARNISH, III**, late of Winterport, deceased. Petition for Formal Probate of Will and Appointment of Personal Representative presented by William L. Harnish, IV, petitioner and proposed personal representative, 67 Back Winterport Road, Winterport, ME 04496, (207) 659-3665.  
**2024-0308 LAWRENCE RUDOLPH GERING**, late of Belfast, deceased. Petition for Formal Probate of Will and Appointment of Personal Representative presented by Benjamin M. Gering, petitioner and proposed personal representative. Attorney for the petitioner is Haley B. Hall, Esq., P. O. Box 404, Belfast, ME 04915, (207)338-1110. **THIS NOTICE IS FURTHER DIRECTED TO SHANNON MCCARTHY, HEIR, WHOSE WHEREABOUTS ARE UNKNOWN AND CANNOT BE SERVED BY OTHER METHODS OF SERVICE.**  
**2025-0071 CHRISTINA ASHWORTH**, late of Prospect, deceased. Petition for Formal Probate of Will and Appointment of Personal Representative presented by Kayla Marie Ashworth, petitioner and proposed Personal Representative, 27 Quarry Rd., Prospect, Maine 04981, (207)322-9807.  
 Dated: March 20, 2025 /s/ Sharon W. Peavey Register of Probate



**NIE Newspapers in Education**

**Newspapers in Education**

The Ellsworth American, Mount Desert Islander and Midcoast Villager provide FREE print and digital newspapers to over 3,800 students each week in Hancock, Knox and Waldo Counties.

Our NIE program is funded in part by the generous donations from local businesses, subscribers, and community members who value expanding students' educational opportunities through exposure to local journalism.

Approximately 150 classrooms currently take advantage of this service.

REGISTRATION STATS		
<b>Classroom Enrollment</b>	<b>Student Reach</b>	<b>Print and Digital Copies</b>
Hancock County: 95 classrooms	Hancock County: 2260 students	Ellsworth American: 1485 copies
Knox County: 37 classrooms	Knox County: 1130 students	Mount Desert Islander: 775 copies
Waldo County: 15 classrooms	Waldo County: 420 students	Midcoast Villager: 1550 copies

Teachers can register at any time during the school year.  
 To enroll your classroom, please visit [mainstaymedia.com/NIE](http://mainstaymedia.com/NIE) and click the **ENROLL MY CLASSROOM** button.  
 For more information or to donate, visit [mainstaymedia.com/NIE](http://mainstaymedia.com/NIE) and click **DONATE NOW**.

## **PUBLIC NOTICE:**

### **NOTICE OF INTENT TO FILE AND PUBLIC INFORMATION MEETING**

Please take notice that RSU 71, 41 Lions Way, Belfast, ME 04915 is intending to file a Permit Application with the Maine Department of Environmental Protection pursuant to the Site Location of Development Act under the provisions of 38 M.R.S.A. §§ 481 thru 490 on or about April 25<sup>th</sup>, 2025.

The application is an after the fact filing for the Belfast Area High School Development located at 25 Lions Way, Belfast, ME 04915 as it is subject to Site Location of Development Law Act. The application includes future redevelopment at the existing track and field. Future improvements include expansion of the track oval and conversion of the existing natural grass field within the oval to a synthetic turf surface. Other site improvements include upgrading the existing athletic lighting, new spectator seating, other site and drainage improvements.

An informational meeting will be held to discuss the project and its anticipated environmental impacts as well as to educate the public about the opportunities for public comment on the project. The meeting will be held:

**Monday, April 14<sup>th</sup>, 2025, at 4:00pm at Belfast Area High School (25 Lions Way, Belfast, Maine)**

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office in Augusta during normal working hours. A copy of the application may also be seen at the municipal offices in Belfast, Maine.

Written public comments may be sent to the regional office in Augusta where the application is filed for public inspection: **MDEP, Central Main Regional Office, 28 Tyson Drive, Augusta, Maine 04333.**

**BELFAST AREA HIGH SCHOOL  
25 LIONS WAY BELFAST, ME  
1000' ABUTTER LIST**

<b>MAP-LOT</b>	<b>NAME AND MAILING ADDRESS</b>
005-010	CENTRAL MAINE POWER ONE CITY CENTER 5TH FLOOR PORTLAND, ME 04101
005-014	REN-BRO INC 731 ROUTE 1 NEWCASTLE, ME 04553-3923
013-050-A	KULIK, ANTHONY C 265 HIGH STREET BELFAST, ME 04915
011-093	HUNT, WILLIAM 229 HIGH STREET BELFAST, ME 04915
011-094	SINCLAIR, ELLEN M 227 HIGH STREET BELFAST, ME 04915
011-095	MCCASLIN, FRANCES CATHERINE 802 LONDON AVE PORT ROYAL, SC 29935
011-096	PRIMROSE HILL LLC 38 RODICK STREET BAR HARBOR, ME 04609
011-102	HOLBROOK, DAVID 70 MAIN ST. LIBERTY, ME 04949
005-116	AUTOZONE INC AUTOZONE #3210 PO BOX 2198, DEPT 8088 MEMPHIS, TN 38101-9842
012-046	HANSTEIN, BARRY W 215 MAIN ST BELFAST, ME 04915
012-047	PENDLETON, DANIEL E 209 MAIN STREET BELFAST, ME 04915
012-048	SUTHERLAND, JESSICA L 203 MAIN STREET BELFAST, ME 04915
012-049	PHILLIPS, RICHARD H 199 MAIN STREET BELFAST, ME 04915
012-050	CITY OF BELFAST 131 CHURCH ST BELFAST, ME 04915
013-001	GATES, LISA M PO BOX 482 BELFAST, ME 04915

013-002	WOOD, ALAN M 179 MAIN STREET BELFAST, ME 04915
013-003	FEYLER, KATHY J 52 WALDO AVE BELFAST, ME 04915
013-004	EMERSON, CANDACE 54 WALDO AVENUE BELFAST, ME 04915
013-005	MCTAGGART, SHANE P 230 HIGH ST BELFAST, ME 04915
013-005	MCTAGGART, SHANE P 230 HIGH ST BELFAST, ME 04915
013-006	BOULIER, ROBERT B 819 WATERVILLE ROAD WALDO, ME 04915-3110
013-007	MERCADANTE, DOMINIC P 68 WALDO AVE BELFAST, ME 04915
013-008	OLSSON, KARNA B., LIVING TRUST 20 SHORELAND DRIVE BELFAST, ME 04915
013-009	FRIEL, BRIAN A 78 WALDO AVE BELFAST, ME 04915
013-009	FRIEL, BRIAN A 78 WALDO AVE BELFAST, ME 04915
013-011	HUMMER REAL ESTATE HOLDINGS 90 CITY POINT ROAD BELFAST, ME 04915
013-012	REGIONAL SCHOOL UNIT NO. 71 PO BOX 325 BELFAST, ME 04915
013-012	REGIONAL SCHOOL UNIT NO. 71 PO BOX 325 BELFAST, ME 04915
013-015	BELFAST AREA CHILDREN CNTR INC STARRETT CENTER 73 WALDO AVENUE BELFAST, ME 04915-1530
013-016	MORRISON, DAVID A 71 WALDO AVE BELFAST, ME 04915
013-017	FINN, CATHERINE FKA BARNABY, CATHERINE 51 WALDO AVENUE BELFAST, ME 04915
013-018	BROWNE, JESSICA S 15 PRIMROSE STREET BELFAST, ME 04915

013-020	MCTAGGART, SHANE P 230 HIGH ST BELFAST, ME 04915
013-020-A	HODSDON, MICHAEL A 28 CEDAR STREET BELFAST, ME 04915
013-021	MCTAGGART, SHANE P 230 HIGH ST BELFAST, ME 04915
013-022	McTaggart, John L, Jr. and Catherine S. TTEE's 900 SPENCER AVENUE CLEARWATER, FL 33756
013-023	MCTAGGART, JOHN L, JR. & CATHERINE S. TTEE's 900 SPENCER AVENUE CLEARWATER, FL 33756
013-024	MONROE, JOHN F P.O. BOX 466 BELFAST, ME 04915
013-025	240 HIGH STREET LLC PO BOX 952 ROCKLAND, ME 04841
013-026	LEGERE, RICHARD M 14 JOHN STREET BELFAST, ME 04915
013-027	B.L.F.I. LLC 85 HOPE STREET ROCKPORT, ME 04856
013-028	SPIGEL, KEVIN M PO BOX 243 BELFAST, ME 04915
013-029	HOLZ, BEN 7 JOHN STREET BELFAST, ME 04915
013-030	SPENCER, ROBERT 48 BARNESTOWN ROAD CAMDEN, ME 04943
013-031	FLORY, SUSAN H 250 HIGH STREET BELFAST, ME 04915
013-032	WATERFALL ARTS 256 HIGH STREET BELFAST, ME 04915
013-033	CARTER, PETER L 270 HIGH STREET BELFAST, ME 04915
013-034	WAKEMAN, ANDREW B 278 HIGH STREET BELFAST, ME 04915
013-034-B	BEERS, JANE HOUCK 274 HIGH STREET BELFAST, ME 04915
013-035	VETERANS OF FOREIGN WARS RANDALL COLLINS POST #3108 34 FIELD STREET BELFAST, ME 0419

013-036	MARTIN, RICHARD W 113 WALDO AVE BELFAST, ME 04915
013-037	BOYNTON, GARY E 37 FIELD STREET APT 2 BELFAST, ME 04915
013-038	SANDERSON, GUY JUSTIN 575 BLUFF ROAD NORTHPORT, ME 04849
013-039	MERCER, CHRISTOPHER M 292 HIGH STREET BELFAST, ME 04915
013-040	DYKE, PATRICIA E 33 FIELD STREET BELFAST, ME 04915
013-041	CONNORS, CAROLYN H PO BOX 182 TENANTS HARBOR, ME 04860
014-050	HALL, DUANE (LE) 302 HIGH STREET BELFAST, ME 04915
014-049	HAFFORD, WILLIAM 107 CEDAR STREET BELFAST, ME 04915
013-045	TIDAL BAY MANAGEMENT, LLC 73 LOCHAN WAY, ATTN: JOHN MCKEITH SWEDEN, ME 04040
013-047	KIEF, ELAINE M 6 FIELD STREET BELFAST, ME 04915
013-048	SILAR, THATCHER E PO BOX 437 LINCOLNVILLE, ME 04849
013-050	HAFFORD, WILLIAM T 107 CEDAR ST BELFAST, ME 04915
013-049	WALDO COMMUNITY ACTION PARTNERS (FKA) WALDO COUNTY COMM SOC ACTION PO BOX 130 BELFAST, ME 04915
013-051	DEMING, KENNETH 263 HIGH ST., SUITE 1 BELFAST, ME 04915
013-052	VIERA, ARTHUR L 672 OCEAN AVENUE PORTLAND, ME 04103
013-053	SPENCER, ROBERT 48 BARNESTOWN ROAD CAMDEN, ME 04943
013-055	ESTEY, DAVID R 16 PIERCE ST BELFAST, ME 04915
013-057	COREY, HENRY G 8 CROWN HILL ROAD ATKINSON, NH 03811

013-058	SUTHERLAND, FRED W 8 RIVER AVE BELFAST, ME 04915
013-060	VAUGHN, GUSSIE I 12 RIVER AVENUE BELFAST, ME 04195
013-061	WISE SOLUTIONS, LLC. 23 PEARL STREET BELFAST, ME 04915
013-062	WISE SOLUTIONS, LLC. 23 PEARL STREET BELFAST, ME 04915
013-072	PAGE, BRUCE C 19 PIERCE ST BELFAST, ME 04915
013-073	139 SEARSPORT AVENUE LLC 12 STOVER LANE BELFAST, ME 04915
013-074	GUTHRIE, SUSAN 249 HIGH STREET BELFAST, ME 04915
013-075	ORF, INC. 58 COBB ROAD BELFAST, ME 04915
011-196-A	Northern N E Telephone Operations LLC C/O TAX DEPT. 2116 SOUTH 17TH STREET MATTOON, IL 61938
011-197	SMITH, TERRANCE 208 HIGH ST BELFAST, ME 04915
011-198	HUPPER FAMILY TRUST PO BOX 98 TENANTS HARBOR, ME 04860
011-199	GAZITUA, ANDREW S 2201 BOLSOVER STREET HOUSTON, TX 77005
011-200	BLAIR, JAMES M 79 MOOSEHEAD TRAIL HWY BROOKS, ME 04921
011-201	STUMPPFF, ROLAND G 151 HEALD CAMP RD TROY, ME 04987
011-202	STUDWELL, KERRY M 219 CARILLON DRIVE PITTSBORO, NC 27312
011-203	DECOTEAU, MATTHEW J 31 WALDO AVE BELFAST, ME 04915
011-208	BECKFORD, RACHEL J 26 WALDO AVE BELFAST, ME 04915
011-209	PIEL, THOMAS E 30 WALDO AVE BELFAST, ME 04915

011-212	HEWLETT, DANE C 42 WALDO AVE BELFAST, ME 04915
011-213	HOUGHTON LIVING TRUST, GRAHAM W 101 KALER ROAD BELFAST, ME 04915-1115
011-213-A	BIROCCO, JOSHUA E 193 MAIN STREET BELFAST, ME 04915
011-214	INGERSOLL, WILLIAM E 187 MAIN STREET BELFAST, ME 04915
011-218	FREEMAN, MORGAN CJ 29 BRIDGE STREET #4 BELFAST, ME 04915
011-218-A	POWER, CLIFTON H 6 CHARLES STREET EXT BELFAST, ME 04915
011-219	DECOTEAU, MAURICE LEO 12 CHARLES ST BELFAST, ME 04915-1111
011-220	MERRILL, DAWN M 18 CHARLES ST BELFAST, ME 04915
011-221	SMITH, KAREN E 22 CHARLES ST BELFAST, ME 04915
013-075	ORF, INC. 58 COBB ROAD BELFAST, ME 04915
013-076	BRANN, ELIZABETH P 237 HIGH STREET BELFAST, ME 04915
013-077	HOWE, SHARON L 235 HIGH STREET BELFAST, ME 04915
013-078	MORRISON, CAROLYN A 7 GREEN STREET BELFAST, ME 04915
014-002	WEBBER, BLAINE S 136 WALDO AVE BELFAST, ME 04915
014-002	WEBBER, BLAINE S 136 WALDO AVE BELFAST, ME 04915
014-003	BELFAST ROUTE 137 PROPERTY, LLC 61 HIGH STREET, APT 1 BELFAST, ME 04915
014-012-A	BEYOND THE METER INC. 27290 SCOTT ROAD MENIFEE, CA 92584
014-013-A	BUZZELL, RAYMOND 129 WALDO AVE BELFAST, ME 04915

014-013	EATON, EBEN RAINEY 125 WALDO AVENUE BELFAST, ME 04915
014-014	KSW FEDERAL CREDIT UNION 222 COLLEGE AVENUE WATERVILLE, ME 04901
014-015	THE LLOYD WENTWORTH REVOCABLE TRUST DATED NOVEMBER 5, 2008 17 WEST MOORES SHORE LANE SWANVILLE, ME 04915
014-016	FALVEY, NANCY J 316 HIGH ST BELFAST, ME 04915
014-020	BEYOND THE METER, INC. 27290 SCOTT ROAD MENIFEE, CA 92584
014-020-A	RILEY, MOLLY B 6 VINE STREET BELFAST, ME 04915
014-021	MARYJEAN VAINO CROWE REVOCABLE LIVING TRUST 12 VINE STREET BELFAST, ME 04915
014-022	YTURREGUI, RICARDO MARK 14 VINE STREET BELFAST, ME 04915
014-045	DOW, JULIANE M 321 HIGH STREET BELFAST, ME 04915
014-046	HOWARD, IAN N 309 HIGH STREET BELFAST, ME 04915
011-210	HERWIG, CAROL 34 WALDO AVENUE BELFAST, ME 04915
014-003-A	WENTWORTH, JOHN P 142 WALDO AVENUE BELFAST, ME 04915
013-019	CARTHAGE, PHILIP G 224 HIGH STREET BELFAST, ME 04915
013-056	ZEGEL, HELEN KAY 20 PIERCE STREET BELFAST, ME 04915
014-016-A	BEYOND THE METER, INC. 27290 SCOTT ROAD MENIFEE, CA 92584
014-016-A	BEYOND THE METER, INC. 27290 SCOTT ROAD MENIFEE, CA 92584
013-048-A	TIDAL BAY MANAGEMENT, LLC 73 LOCHAN WAY, ATTN: JOHN MCKEITH SWEDEN, ME 04040

013-033-A	MDP LLC C/O AMY MARNECHECK-WICH 54 HIGH STREET BELFAST, ME 04915
011-218-B	CHASE, ADDISON B 623 NORTH PALERMO ROAD FREEDOM, ME 04941
013-005-B	HORNE, KENNETH COLBY 79 MAIN STREET BELFAST, ME 04915
014-048-A	STOVER, ROBERT D 7 STOVER LANE BELFAST, ME 04915
014-047-A	KRISTINE WENTWORTH, TRUSTEE 12 STOVER LN BLEFAST, ME 04915
013-005-A	KNIGHT, JANIE 389 MUZZY RIDGE ROAD SEARSMONT, ME 04973
013-037-A	BOYNTON, GARY E 37 FIELD STREET APT 2 BELFAST, ME 04915
014-046-A	PALUGHI, DONALD JR 350 MAJESTIC CIRCLE DALLASTOWN, PA 17313
005-011-A	DOWN EAST WHOLESALERS, INC. 731 ROUTE 1 NEWCASTLE, ME 04553
013-005-D	KNIGHT, JANEY 389 MUZZY RIDGE ROAD SEARSMONT, ME 04973
013-005-C	REDMAN III, ARLO 389 MUZZY RIDGE ROAD SEARSMONT, ME 04973
013-080-A	KLIMEK, DANIEL E 46 BRIDGE STREET BELFAST, ME 04915
013-032-A	REGIONAL SCHOOL UNIT NO. 71 PO BOX 325 BELFAST, ME 04915
013-005-E	JANEY, KNIGHT 389 MUZZY RIDGE ROAD SEARSMONT, ME 04973
013-027-A	PETERS, ROSAMOND C 112 E WALDO ROAD WALDO, ME 04915