HALEY WARD

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION

TO THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

Applicant:

Hammond Ridge Development Company, LLC

PO Box 669

Millinocket, ME 04462

JANUARY 10, 2025

JN: 12596.004

APPLICATION PREPARED BY:

Haley Ward, Inc.

One Merchants Plaza, Suite 701 | Bangor, Maine 04401

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DRAWINGS

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C204	Road Plan and Profile Sta: 0+00 To 9+50
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APPLICATION

Agent Authorization
Submissions Checklist

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901
***

FOR DEP USE
ATS #_____
L- _____
Total Fees: _____
Date: Received _____

FORM A PAGE 1 **04/08**

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☒ 20-acre development ☐ Planning Permit ☐ Metallic Mining	☐ Marine Oil Terminal ☐ Structure ☒ Subdivision	☐ Major Amendment ☐ Minor Amendment

1. Name of Applicant:	HAMMOND RIDGE DEVELOPMENT COMPANY, LLC (ATTN: MATTHEW POLSTEIN)	**6. Name of Agent: (if applicable)**	HALEY WARD, INC. (ATTN: CHIP HASKELL)
2. Applicant's Mailing Address:	PO BOX 669 MILLINOCKET, ME 04462	**7. Agent's Mailing Address:**	ONE MERCHANTS PLAZA, SUITE 701 BANGOR, ME 04401
3. Applicant's Daytime Phone #:	207-723-5438	**8. Agent's Daytime Phone # :**	207-989-4824
4. Applicant's Fax #: (if available)		**9. Agent's Fax # :**	207-989-4881
5. Applicant's *e-mail address*: (license will be sent via e-mail)	MATT.POLSTEIN@GMAIL.COM	**10. Agent's *e-mail address* (license will be sent via e-mail**	CHASKELL@HALEYWARD.COM

PROJECT INFORMATION

11. Name of Development:	HAMMOND RIDGE DEVELOPMENT						
12. Map and Lot #'s:	**Map #:** 1	**Lot #:** 1.2	**13. Deed Reference #'s:**	**Book #:** Book 10256		**Page #:** 1	
14. Location of Project Town/City	T1 R8 WELS, T1 R9 WELS	**15. County:**	PENOBSCOT & PISCATAQUIS	**16. UTM Northing**	5062656.33	**17. UTM Easting**	514958.10
18. Brief Description of Project including total parcel size:	THE HAMMOND RIDGE DEVELOPMENT IS A MULTI-USE DEVELOPMENT FEATURING 41 SINGLE-FAMILY SUBDIVIDED LOTS, 9 MIXED-USE LOTS, 1 COMMERCIAL LOT, AN APPROXIMATELY 9,000 SF ACTIVITY CENTER, AND AN APPROXIMATELY 10,000 SF EVENT CENTER. THE PROJECT IS LOCATED ON AN APPROXIMATELY 1,424 ACRE PARCEL.						

19. Type of Direct Watershed: (Check all that apply)	☒ Lake not most at risk ☐ Lake most at risk ☐ Lake most at risk, severely blooming	☐ River, stream, or brook ☐ Urban impaired stream ☐ Freshwater wetland	☐ Coastal wetland ☐ Wellhead or public water
19. Name of Waterbody Project Site drains to:	MILLINOCKET LAKE, PEMADUMCOOK LAKE, AND SMITH (LITTLE) POND		

21. Amount of Developed Area:	Total acres: 37.41	Existing Developed area: 4.44	New Developed area: 32.97
22. Amount of Impervious Area:	Total acres: 22.14	Existing Impervious area: 4.44	New Impervious area: 17.70

23. Development started prior to obtaining a license?	☒ Yes * prior development completed through LUPC Permitting ☐ **No**				
24. Development or any portion of the site subject to enforcement action?	☐ Yes ☒ **No**	**If yes**, name of enforcement staff involved?			
25. Common scheme of development?	☒ **Yes** ☐ **No**	**26. Title, Right or Interest:**	☒ own ☐ lease	☐ **purchase option** ☐ **written agreement**	
27. Natural Resources Protection Act permit required?	☐ **Yes** ☒ **No**	**If yes:**	☐ **PBR**	☐ **Tier 1** ☐ **Full Permit** ☐ **Tier 2**	
28. Existing DEP Permit number (if applicable):	N/A				
29. Names of DEP staff person(s) present at the pre-application meeting:	JESSICA DAMON				
30. Does agent have an interest in project? If yes, what is the interest?	☐ Yes ☒ **No**				

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

08/08

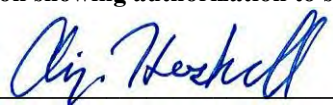
IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following:

CERTIFICATIONS / SIGNATURES

"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.

Signed:  **Title** PROJECT MANAGER (AGENT) **Date:** 01/10/2025

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed**  **Date:** 0/10/2025

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: 

Name (print): CHIP HASKELL, PE, AGENT

Date: 01/10/2025

Re/Cert/Lic No.: 13314
Engineer X
Geologist _____
Soil Scientist _____
Land Surveyor _____
Site Evaluator _____
Active Member of the Maine Bar _____
Professional Landscape Architect _____
Other _____

"I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #5 for the applicant and #10 for the agent). ***Do not sign if you elect to "opt out" or receive the decision via regular mail.***

Signed (Applicant) _____ ***Date:*** _____

and/or

Signed (Agent)  ***Date:*** 01/10/2025

HALEY WARD

ENGINEERING | ENVIRONMENTAL | SURVEYING

January 2, 2025

To Whom It May Concern:

Please be advised that Haley Ward, Inc. is hereby authorized to act on behalf of Hammond Ridge Development Company, LLC, regarding State permitting for the Hammond Ridge Development in T1 R8, WELS.

MATTHEW A. GOLSTEIN MEMBER

Printed Name and Title

Signature

1/2/2025

Date

One Merchants Plaza, Suite 701, Bangor, ME 04401
T: 207.989.4824 | HALEYWARD.COM

FORM D

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

A. Narrative

X 1. Objectives and details

X 2. Existing facilities (with dates of construction)

B. Topographic map

X 1. Location of development boundaries

X 2. Quadrangle name

C. Construction plan

X 1. Outline of construction sequence (major aspects)

2. Dates

D. Drawings

____ 1. Development facilities

____ a. Location, function and ground area

____ b. Length/cross-sections for roads

____ 2. Site work (nature and extent)

____ 3. Existing facilities (location, function ground area and floor area)

____ 4. Topography

X a. Pre- and post-development (contours 2 ft or less)

____ b. Previous construction, facilities and lot lines

X **Section 2. Title, right or interest** (copy of document)

Section 3. Financial capacity

X A. Estimated costs

B. Financing

X 1. Letter of commitment to fund

2. Self-financing

____ a. Annual report

____ b. Bank statement

3. Other

____ a. Cash equity commitment

____ b. Financial plan

____ c. Letter

____ 4. Affordable housing information

Section 4. Technical ability (description)

X A. Prior experience (statement)

X B. Personnel (documents)

Section 5. Noise

X A. Developments producing a minor noise impact (statement)

X 1. Residential developments

X 2. Certain non-residential subdivisions

____ 3. Schools and hospitals

____ 4. Other developments

____ a. Type, source and location of noise

____ b. Uses, zoning and plans

____ c. Protected locations

____ d. Minor nature of impact

____ e. Demonstration
N/A B. Developments producing a major noise impact (full noise study)
____ 1. Baseline
____ a. Uses, zoning and plans
____ b. Protected locations
____ c. Quiet area
____ 2. Noise generated by the development
____ a. Type, source and location of noise
____ b. Sound levels
____ c. Control measures
____ d. Comparison with regulatory limits
____ e. Comparison with local limits

X **Section 6. Visual quality and scenic character**(narrative, description, visual impact analysis)

X **Section 7. Wildlife and fisheries** (narrative)

X **Section 8. Historic sites** (narrative)

X **Section 9. Unusual natural areas** (narrative)

Section 10. Buffers
X A. Site plan and narrative

Section 11. Soils
X A. Soil survey map and report
X 1. Soil investigation narrative
X 2. Soil survey map
X B. Soil survey intensity level by development type
1. Class A (High Intensity) Soil Survey
2. Class B (High Intensity) Soil Survey
3. Class C (Medium High-Intensity) Soil Survey
4. Class D (Medium Intensity) Soil Survey
C. Geotechnical Investigation
____ D. Hydric soils mapping

Section 12. Stormwater management
____ A. Narrative
X 1. Development location
____ 2. Surface water on or abutting the site
X 3. Downstream ponds and lakes
X 4. General topography
X 5. Flooding
____ 6. Alterations to natural drainage ways
____ 7. Alterations to land cover
X 8. Modeling assumptions
9. Basic standard
X 10. Flooding standard
X 11. General standard
X 12. Parcel size
13. Developed area
14. Disturbed area
15. Impervious area
____ B. Maps
____ 1. U.S.G.S. map with site boundaries
____ 2. S.C.S. soils map with site boundaries
X C. Drainage Plans (a pre-development plan and a post-development plan)

X 1. Contours
X 2. Plan elements
X 3. Land cover types and boundaries
X 4. Soil group boundaries
X 5. Stormwater quantity subwatershed boundaries
X 6. Stormwater quality subwatershed boundaries
X 7. Watershed analysis points
X 8. Hydrologic flow lines (w/flow types and flow lengths labeled)
9. Runoff storage areas
X 10. Roads and drives
X 11. Buildings, parking lots, and other facilities
X 12. Drainage system layout for storm drains, catch basins, and culverts
X 13. Natural and man-made open drainage channels
X 14. Wetlands
15. Flooded areas
16. Benchmark
17. Stormwater detention, retention, and infiltration facilities
X 18. Stormwater treatment facilities
19. Drainage easements
20. Identify reaches, ponds, and subwatersheds matching stormwater model
21. Buffers

X D. Runoff analysis (pre-development and post development)
X 1. Curve number computations
X 2. Time of concentration calculations
X 3. Travel time calculations
X 4. Peak discharge calculations
X 5. Reservoir routing calculations

X E. Flooding Standard
X 1. Variance submissions (if applicable)
X a. Submissions for discharge to the ocean, great pond, or major river
X i. Map
ii. Drainage plan
iii. Drainage system design
iv. Outfall design
v. Easements
X b. Insignificant increase
i. Downstream impacts

c. Submissions for discharge to a public stormwater system
i. Letter of permission
ii. Proof of capacity
ii. Outfall analysis and design (pictures)
2. Sizing of storm drains and culverts
3. Stormwater ponds and basins
a. Impoundment sizing calculations
b. Inlet calculations
c. Outlet calculations
d. Emergency spillway calculations
e. Subsurface investigation report
f. Embankment specifications
g. Embankment seepage controls
h. Outlet seepage controls
i. Detail sheet
j. Basin cross sections
k. Basin plan sheet
4. Infiltration systems
a. Well locations map
b. Sand and gravel aquifer map
c. Subsurface investigation report with test pit or boring logs

____ d. Permeability analysis
____ e. Infiltration structure design
____ f. Pollutant generation and transport analysis
____ g. Monitoring and operations plan
____ i. Locations of storage points of potential contaminants
____ ii. Locations of observation wells and infiltration monitoring plan
____ iii. Groundwater quality monitoring plan
____ 5. Drainage easement declarations.
X F. Stormwater quality treatment plan peak discharge calculations
X 1. Basic stabilization plan
X a. Ditches, swales, and other open channel stabilization
X b. Culvert and storm-drain outfall stabilization
____ c. Earthen slope and embankment stabilization
X d. Disturbed area stabilization
____ e. Gravel roads and drives stabilization

X 2. General Standard
X a. Calculations for sizing BMP
X b. Impervious area calculation
X c. Developed area calculation
X d. Summary spreadsheet of calculations

X 3. Phosphorus control plan
X a. Calculations for the site's allowable phosphorus export
X b. Calculations for determining the developed site's phosphorus export
X c. Calculations for determining any phosphorus compensation fees
____ 4. Offset Credits
____ a. Urban impaired stream
____ Offset credit calculation
X b. Phosphorus credit determination
____ i. Location map
____ ii. Scaled plan
____ iii. Title and right
____ iv. Demolition plan
____ v. Vegetation plan
____ vi. Offset credit calculation
____ vii. Calculation for the new allowable export
X 5. Runoff treatment measures
____ a. structural measures
____ i. Design drawings and specifications
____ ii. Design calculations
____ iii. Maintenance plan
____ iv. TSS removal or phosphorus treatment factor determinations
____ v. Stabilization plan
X b. Vegetated buffers
____ i. Soil survey
____ ii. Buffer plan
____ iii. Turnout and level spreader designs
____ iv. Deed restrictions
____ 6. Control plan for thermal impacts to coldwater fisheries
____ 7. Control plan for other pollutants
____ 8. Engineering inspection of stormwater management facilities

X G. Maintenance of common facilities or property
X 1. Components of the maintenance plan
X A. Maintenance of facilities by owner or operator
X 1. Site owner or operator (name legally responsible party)
X 2. Contact person responsible for maintenance
X 3. Transfer mechanism

X 4. List of facilities to be maintained
X 5. List of inspection and maintenance tasks for each facility
X 6. Identifications of any deed covenants, easements, or restrictions
X 7. Sample maintenance log
X 8. Copies of any third-party maintenance contracts
N/A B. Maintenance of facilities by homeowner's association
1. Incorporation documents for the association
2. Membership criteria
3. Association officer responsible for maintenance
4. Establishment of fee assessment for maintenance work
5. Establishment of lien system
6. Reference to department order(s) in association charter
7. Transfer mechanism from developer to association
8. List of facilities to be maintained
9. Identification of any deed covenants, easements, or restrictions
10. Renewal of covenants and leases
11. List of inspection and maintenance tasks for each facility
12. Sample maintenance log
13. Copies of any third-party maintenance contracts
N/A C. Maintenance of facilities by municipality or municipal district
1. Identification of the municipal department or utility district
2. Contact person responsible for maintenance
3. Evidence of acceptance of maintenance responsibility
4. Transfer mechanism from developer
5. List of facilities to be maintained
6. List of inspection and maintenance tasks for each facility
7. Identifications of any deed covenants, easements, or restrictions
8. Sample maintenance log
X 2. General inspection and maintenance requirements
a. Drainage easements
X b. Ditches, culverts, and catch-basin systems
X c. Roadways and parking surfaces
d. Stormwater detention and retention facilities
1. Embankment inspection and maintenance
2. Outlet inspection and clean-out
3. Spillway maintenance
4. Sediment removal and disposal
e. Stormwater infiltration facilities
1. Sediment protection plan
2. Infiltration rehabilitation plan
3. Sediment removal and disposal
4. Groundwater monitoring plan
f. Proprietary treatment devices
X g. Buffers
h. Other practices and measures

Section 13. Urban Impaired Stream Submissions

N/A 1. Off-site credits
N/A 2. Compensation fees (Urban Impaired Stream/Phosphorus)
N/A 3. Development impacts

Section 14. Basic Standards

X A. Narrative
X 1. Soil types
X 2. Existing erosion problems
X 3. Critical areas
X 4. Protected natural resources
X 5. Erosion control measures

X 6. Site stabilization
X B. Implementation schedule
X C. Erosion and sediment control plan
X 1. Pre-development and post-development contours
X 2. Plan scale and elements
X 3. Land cover types and boundaries
X 4. Existing erosion problems
X 5. Critical areas
X 6. Protected natural resources
X 7. Locations (general)
X 8. Locations of controls
X 9. Disturbed areas
10. Stabilized construction entrance
X D. Details and specifications (for both temporary and permanent measures)
X E. Design calculations
X F. Stabilization plan
X 1. Temporary seeding
X 2. Permanent seeding
X 3. Sodding
X 4. Temporary mulching
X 5. Permanent mulching
X G. Winter construction plan
X 1. Dormant seeding
X 2. Winter mulching
N/A H. Third-party inspections
_____ 1. Inspector's name, address, and telephone number
_____ 2. Inspector's qualifications
_____ 3. Inspection schedule
_____ 4. Contractor contact
_____ 5. Reporting protocol

Section 15. Groundwater

X A. Narrative
X 1. Location and maps
X 2. Quantity
X 3. Sources
X 4. Measures to prevent degradation
N/A B. Groundwater protection plan
N/A C. Monitoring plan
_____ 1. Monitoring points
_____ 2. Monitoring frequency
_____ 3. Background conditions
_____ 4. Monitoring parameters
_____ 5. Personnel qualifications
_____ 6. Proof of training
_____ 7. Equipment and methods
_____ 8. Quality assurance/quality control
_____ 9. Reporting requirements
_____ 10. Remedial action plan
N/A D. Monitoring well installation report
_____ 1. Well location map
_____ 2. Elevation data
_____ 3. Well installation data
_____ 4. Well construction details
_____ 5. Borehole logs
_____ 6. Summary of depth measurements
_____ 7. Characteristics of subsurface strata
_____ 8. Well installation contract

____ 9. Schematic cross-sections
____ 10. Monitoring point summary table
____ 11. Protective casing
____ 12. On-site well identification

Section 16. Water supply

X A. Water supply method
X 1. Individual wells (evidence of sufficient/healthful supply)
X a. Support of findings by well drillers
X b. Support of findings by geologist
X 2. Common well(s) (reports)
X a. Hydrogeology report
X b. Engineering report
X c. Well installation report
X d. Long-term safe yield and zone of influence determination
X e. Public water supply
____ i. Proposed well or wells
____ ii. Existing well or wells
____ iii. Water quality analysis
X 3. Well construction in shallow-to-bedrock areas
____ 4. Additional information
____ 5. Off-site utility company or public agency
____ 6. Other sources
X B. Subsurface wastewater disposal systems (locations of systems and wells)
X C. Total usage (statement re: total anticipated water usage)

Section 17. Wastewater disposal

X A. On-site subsurface wastewater disposal systems (investigation results)
____ 1. Site plan
2. Soil conditions summary table
X 3. Logs of subsurface explorations
4. Additional test pits, borings or probes
____ a. Soil conditions A
____ b. Soils with Profiles 8 and 9 parent material
____ c. Soil conditions D
____ d. Disposal field length 60 feet or greater
____ 5. 3-bedroom design
____ 6. Larger disposal systems
a. System design details
____ b. Plan view
____ c. Cross sections
____ d. Test pit data
____ e. Mounding analysis
N/A B. Nitrate-nitrogen impact assessment
____ 1. When required
____ a. Exempted____
i. Conventional systems meeting certain setbacks
____ ii. Denitrification systems
____ b. Special conditions and other exemptions
____ 2. Assumptions
____ a. Initial concentration
____ b. Background concentration
____ c. Contribution from development
____ d. Mixing and dilution
____ e. Severe-drought scenario
____ f. Wastewater flow to subsurface wastewater disposal fields

3. Assessment report minimum requirements
    a. Narrative and calculations
    b. Site plan
        i. Well locations
        ii. 10 mg/l and 8 mg/l isocons
        iii. Groundwater contours and groundwater flow divides
    c. References

N/A 4. Denitrification systems
    a. Design plans and specifications
    b. Installation information
    c. Monitoring plan
    d. Maintenance
    e. Backup system

N/A D. Municipal facility or utility company letter

E. Storage or treatment lagoons

X **Section 18. Solid waste** (list: type, quantity, method of collection and location)

A. Commercial solid waste facility (final disposal location)

B. Off-site disposal of construction/demolition debris (final disposal location)

C. On-site disposal of woodwaste/land clearing debris

1. Applicability of rules (evidence re: applicability of rules)

2. Burning of wood wastes
    a. Delineation on site plan
    b. Plans for handling unburned woodwaste and woodash
    c. Evidence of capacity to accept waste (approved facility)
    d. Usage of materials
    e. Data on mixing ratios and application rates

D. Special or Hazardous Waste

Section 19. Flooding

X A. Explanation of flooding impact

N/A B. Site plan showing 100-year flood elevation

X C. Hydrology analysis

N/A D. FEMA flood zone map with site boundaries

Section 20. Blasting

N/A A. Site Plan or map

N/A B. Report
1. Assessment
2. Blasting plan

Section 21. Air emissions (narrative and summary)

N/A A. Point and non-point sources identified

N/A B. Emission components (point sources)

Section 22. Odors

N/A A. Identification of nature/source

N/A B. Estimate of areas affected

N/A C. Methods of control)

N/A **Section 23. Water vapor** (narrative)

N/A **Section 24. Sunlight** (statement and drawing, if required)

Section 25. Notices

X A. Evidence that notice sent

X B. List of abutters for purposes of notice

SECTION 1

DEVELOPMENT DESCRIPTION

Location Map

SECTION 1

DEVELOPMENT DESCRIPTION

Objective and Details

The goal of this project is to design, develop, and operate a signature resort for Maine and New England on and around Hammond Ridge and Millinocket Lake. The purpose of the Hammond Ridge Development Plan is to allow for the development of a range of complementary uses as a mixed-use growth area capitalizing on a year-round network of interconnected recreational trails. Well planned nodes of mixed residential forms and ownership models will support destination scale non-residential development, highlighting the arts, events, motorized and non-motorized recreation, local culture, and food.

The proposed development is located on a 1,424-acre parcel identified by Map 1 Lot 1.2. In 2021, the site was rezoned from D-GN: General Zone, M-GN, and Protection Zones to create a D-PD: Planned Development Zone for the purpose of implementing a Master Plan with recreation trail development, activity centers, lodging, and other recreational opportunities.

The project is proposing the development of 41 single-family residential lots, nine mixed-use lots for multi-family rental units and small commercial uses, one lot for community space, one lot for a maintenance building, and the existing facilities listed below. Development up to this point has only required Land Use Planning Commission (LUPC) approval. Permits with the LUPC were received prior to constructing any development requiring approval. With the addition of the subdivided lots and new roads, this site now requires a Site Location of Development Act (SLODA) Permit with the Maine Department of Environmental Protection (MDEP) in addition to a Use Certification and Subdivision Permit with the LUPC. The following application is intended to prove the proposed development satisfies the applicable MDEP and LUPC standards.

The project has been sited to cluster development and manage development patterns in a way that will minimize environmental impacts. This includes the construction of buildings that fit harmoniously with the natural environment and minimize the footprint on the land.

Existing Facilities

As mentioned above, several of the facilities proposed throughout this application have already been permitted through the LUPC and constructed. The Event Center and Activity Center included in this application were constructed in 2021. Utility infrastructure has also been constructed throughout the site; including a community solar array (2021), a cell tower (2019), and 5,210 linear feet of electric and fiber optic utilities. The site contains an existing network of roads and recreational trails and two gravel pits, one of

which will be the area where the new maintenance building is proposed. The owner of the Hammond Ridge Development Company, LLC, Matthew Polstein, also constructed a single-family home on the site in 2021. For a full tabulation of all the existing facilities on site, please refer to **Section 31** of this application.

Topographic Map

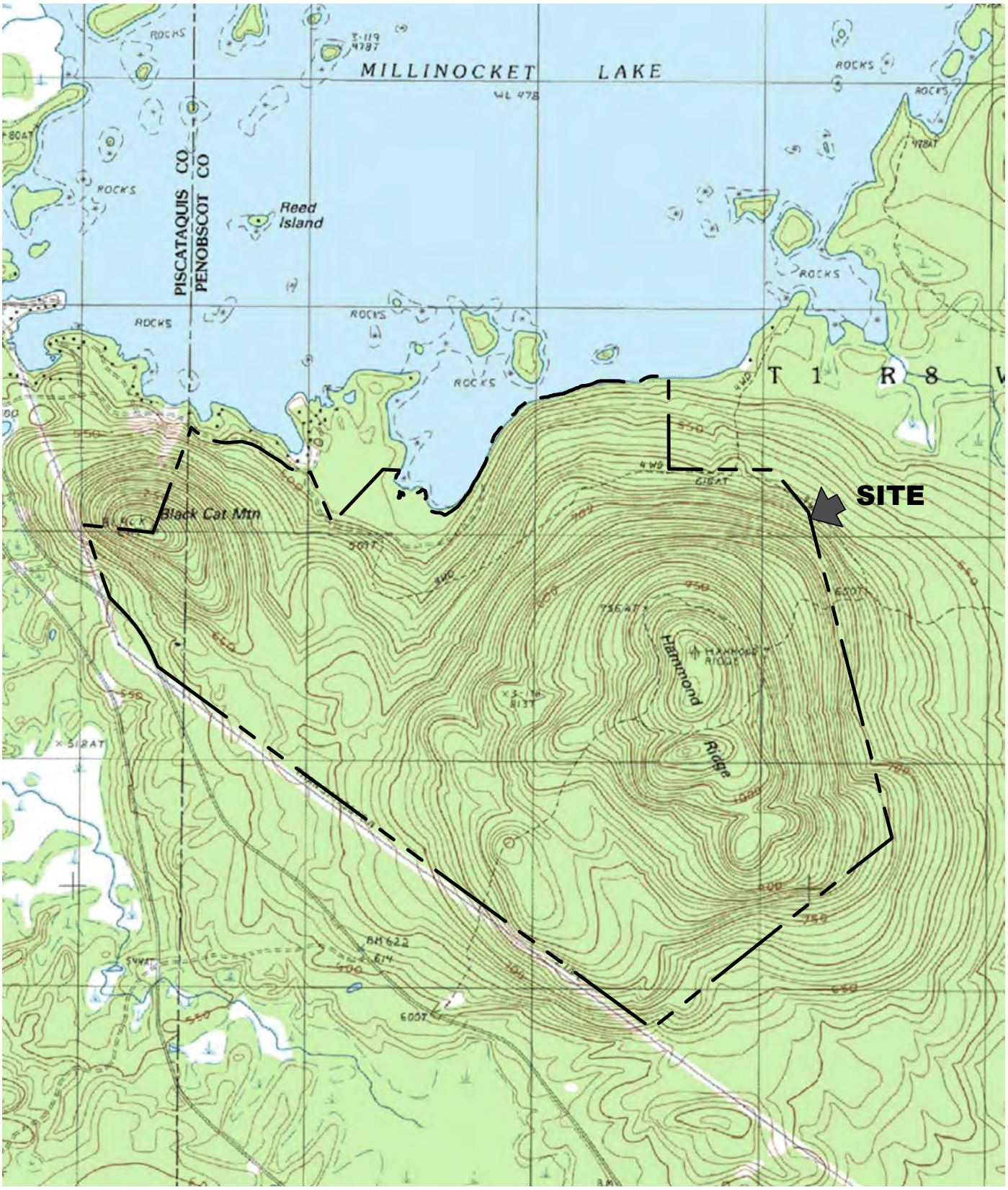
Please refer to the enclosed Location Map.

Construction Timeline

DESCRIPTION	DATE (TIME FRAME)
Site Clearing	Summer 2025
Install Erosion Control Measures	Summer 2025
Stormwater BMP Construction	Summer 2025 through Summer 2026
Utility Installation	Summer 2025 through Summer 2026
Road Construction	Summer 2025 through Summer 2026
Building Construction	Summer 2026 through Summer 2027
Semi-Permanent Erosion Control	Fall 2027 to Summer of 2028

Drawings

Please refer to the enclosed Site Plans and Details included at the end of this application.



SOURCE:
U.S.G.S. TOPOGRAPHIC QUADRANGLE
NORCROSS
@ 1:24,000

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE
LOCATION MAP

2024.06.19
12596.004

SECTION 2

TITLE, RIGHT, OR INTEREST

Deed – Katahdin Timberlands LLC
Penobscot County Registry Map
Deed – Hammond Ridge Development Company, LLC
Memorandum of Lease

SECTION 2

TITLE, RIGHT OR INTEREST

The property is owned by Hammond Ridge Development Company, LLC and Twin Pine Camps, LLC. The property is registered in the Penobscot Registry of Deeds as Book 10256, Page 1, Map File 2015-45 (Hammond Ridge Development, LLC) and approximately 15.5 acres were subdivided to Twin Pine Camps, LLC where the existing Activity Center and Event Center reside. An unsigned copy of the deed has been provided at this time. The property was simultaneously registered with the Penobscot Registry of Deeds. Please refer to the attached deeds. This section also includes a copy of the recorded access easement survey for the parcel and surrounding properties and existing lease for the cell tower.

Bk 10256 Pg1 #49873
12-29-2005 @ 08:21a

QUIT-CLAIM DEED WITH COVENANT

KATAHDIN TIMBERLANDS LLC, a Delaware limited liability company, with a mailing address of One Katahdin Avenue, Millinocket, ME, 04462 and KATAHDIN FOREST MANAGEMENT, LLC, a Delaware limited liability company, with a mailing address of One Katahdin Avenue, Millinocket, ME, 04462, hereinafter "Grantor", for consideration paid, grants to HAMMOND RIDGE DEVELOPMENT COMPANY, LLC, a Maine limited liability company whose mailing address is 1221 Medway Road, Millinocket, ME 04462, hereinafter "Grantee", with quit-claim covenants, certain lots or parcels of land, together with any of Grantor's improvements thereon and together with all rights and easements appurtenant thereto as specified herein, situated in Township 1 Range 8, WELS, Penobscot County, Maine, and Township 1 Range 9, WELS, Piscataquis County, Maine, bounded and described as follows:

SEE ATTACHED SCHEDULE A

Being a portion of those premises conveyed to the Grantors herein by the following deeds:

1-Maine Timberlands Company to Katahdin Timberlands, LLC, dated April 29, 2003, and recorded in the Penobscot County Registry of Deeds in Book 8702 Page 181; and 2-Katahdin Timberlands, LLC, et al to Katahdin Forest Management, LLC, dated February 26, 2004, and recorded in the Penobscot County Registry of Deeds in Book 9215 Page 177.

4572/3

This conveyance is subject to all conditions, easements, restrictions and reservations of record including the rights of Brascan Power New England, formerly known as Great Lakes Hydro America, LLC, and GNE, LLC, under its deed from Great Northern Paper, Inc., and Maine Timberlands Company dated January 31, 2002, and recorded in the Penobscot County Registry of Deeds in Book 8063 Page 98 (Piscataquis County – Book 1366 Page 1) as amended by deeds recorded in Book 9214, Page 303 (Piscataquis County – Book 1535 Page 255), Book 9349, Page 1 (Piscataquis County – Book 1561 Page 1) and Book 9349 Page 156 (Piscataquis County – Book 1561 Page 10).

This deed shall be construed according to the laws of the State of Maine.

Grantee agrees that the quitclaim covenants of Katahdin Timberlands, LLC, are limited to Parcels One, Two and Three and the quitclaim covenants of Katahdin Forest Management, LLC, are limited to Parcel Four.

Two originals of this deed have been executed for simultaneous recording in the Penobscot and Piscataquis County Registry of Deeds but the two originals shall constitute one and the same instrument.

IN WITNESS WHEREOF, Katahdin Timberlands, LLC, and Katahdin Forest Management, LLC, have caused this instrument to be executed by Marcia A. McKeague, President of each limited liability company, and hereunto duly authorized this 23rd day of December, 2005.

KATAHDIN TIMBERLANDS LLC

By: Marcia A. McKeague
Its: President

KATAHDIN FOREST MANAGEMENT LLC

By: Marcia A. McKeague
Its: President

STATE OF MAINE
PENOBSCOT, ss. December 28, 2005

Then personally appeared the above named Marcia A. McKeague, President of Katahdin Timberlands, LLC, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said limited liability company.

Before me,

~~Notary Public~~ Attorney at Law
Print Name: Dean A. Beaupain

STATE OF MAINE
PENOBSCOT, ss. December 28, 2005

Then personally appeared the above named Marcia A. McKeague, President of Katahdin Forest Management LLC, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said limited liability company.

Before me,

~~Notary Public~~ Attorney at Law
Print Name: Dean A. Beaupain

SCHEDULE A

Certain lots, or parcels of land, located in Township 1 Range 8, WELS, Penobscot County, Maine, and Township 1 Range 9, WELS, Piscataquis County, Maine, and more particularly described as follows:

Parcel One – Twin Pines Lease Lot situated in Township 1 Range 8, WELS, Penobscot County, Maine, and conveyed by Katahdin Timberlands, LLC

A certain lot or parcel of land with the improvements thereon situate on the southerly shore of Millinocket Lake, so called, in Township 1, Range 8, County of Penobscot, State of Maine, more particularly described as follows:

Beginning on the northerly side of the Black Cat Road, so called, at an iron rod found on the northerly line of Katahdin Timberlands, LLC, lease no. 2332;

Thence N 79° 45' 50" E by and along the northerly line of said lease no. 2332, a distance of 164.20 feet to an iron rod set;

Thence S 19° 25' 34" E by and along the easterly line of said lease no. 2332, a distance of 198.93 feet to an iron rod found;

Thence S 88° 21' 32" E, a distance of 59.53 feet to a point;

Thence S 20° 28' 28" E, a distance of 207.86 feet to a point;

Thence N 62° 15' 54" E, a distance of 258.63 feet to a point;

Thence N 22° 54' 04" W, a distance of 338.88 feet to an iron rod set;

Thence continuing N 22° 54' 04" W, a distance of 110.52 feet to an iron rod set, said iron rod being located N 66° 33' 45" E, a tie distance of 451.23 feet from the point of beginning;

Thence continuing N 22° 54' 04" W, a distance of 25 feet, more or less, to the high water mark of said Millinocket Lake;

Thence in a general northwesterly, southwesterly and southeasterly direction by and along said high water mark, a distance of 1640 feet, more or less, to a point on the northerly line of said Lease No. 2332;

Thence N 79° 45' 50" E by and along the northerly line of said lease no. 2332, a distance of 46 feet, more or less, to the point of beginning;

Containing 7 acres, more or less.

Bearings referenced herein are oriented to Grid North of the Maine State Coordinate System, East Zone, NAD 83.

Distances cited herein are grid distances referenced to the Maine State Coordinate System, East Zone, NAD 83.

Iron rods set referenced herein are capped ¾" rebar stamped "Plisga & Day PLS 2361".

The high water mark of said Millinocket Lake is defined as elevation 480 feet referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).

Said lot is identified as 'Parcel 1 Twin Pines' on a Survey Plan of a portion of the property of Katahdin Timberlands LLC and Katahdin Forest Management LLC by Plisga & Day, Land Surveyors, dated December 14, 2005, and recorded on December 14, 2005, in the Penobscot County Registry of Deeds in Plan Book 2005 Page 153 which survey, and the notes thereon, are hereby incorporated by reference.

The foregoing lot was created by lease prior to 1970.

This conveyance excludes any property within the project boundary of the Millinocket Lake Storage Development of the Penobscot Mills Project, FERC Project No. 2458, as determined by the Federal Energy Regulatory Commission in a license issued to Great Northern Paper, Inc., dated October 22, 1996, as amended by the FERC Order dated February 12, 2002, revising Shoreline Management Plan and Approving Exhibit G Drawings.

Excepting and reserving, however, to Katahdin Timberlands, LLC, and its assigns, a right of way, in common with Grantor, and its assigns, as a non exclusive appurtenant easement, in common with Grantee and its successors and assigns, for access and utilities to land of Katahdin Timberlands, LLC, identified as Lease Lot Number 1, Lease Lot Number 2, Lease Lot Number 3, Lease Lot Number 4 and Lease Lot Number 5 as shown on the survey plan recorded in Plan Book 2005 Page 153, subject to reasonable cost sharing with such Lease Lot owners, said easement being a 20 foot right of way, as presently used, including the right to install, maintain and operate utility services, as well as the right to convey such utility rights to public utility companies, said right of way extending from the west bound of Parcel One, in a generally northeasterly direction over the existing road to the east bound of Parcel One and across Parcel Three for access and utilities to said leased lots One, Two, Three and Four. Access to Leased Lot Five runs from said easement northwesterly along the west bound of Parcel One to the driveway servicing Lot 5. Said easements are shown on **the** survey plan recorded in Plan Book 2005 Page 153 attached hereto. The center line of said right of way runs along the center line of the existing roads and said right of way extends 10 feet on each side of the center line of said right of way. This easement includes the right, but not the obligation, to maintain said road and to plow and remove snow from said roadway. This easement also includes the right to maintain and operate utility services as presently laid out and shown on the survey plan recorded in Plan Book 2005 Page 153 even if such utilities are outside

of said 20 foot strip. This reserved right of way for access and utilities is subject to the right of Grantee and its successors and assigns to relocate said right of way and utilities within Parcels One and Three such that Katahdin Timberlands, LLC, and its successors and assigns have access and utility services to and for said leased lots, such relocation to be solely at the expense of Grantee and its successors and assigns.

Parcel Two – Former Katahdin Communications Lease Lot #5087 situated in Township 1 Range 8, WELS, Penobscot County, Maine, and conveyed by Katahdin Timberlands, LLC

A certain lot, or parcel of land, situated in Township 1, Range 8, WELS, Penobscot County, State of Maine, and being a three (3) acre parcel of land located approximately three quarters (3/4) of a mile southeast of Millinocket Lake on Hammond Ridge including a power line right of way approximately 2800 feet in length accessing the site from the northwest.

Also hereby conveying all of Grantor's right, title and interest to a strip of land under one certain power line constructed by Katahdin Communications, Inc., said line running from the preexisting power line on Parcel Four to the above described site. This conveyance includes all of Grantors' right title and interest in the power line facilities constructed within said strip.

Said lot is identified as 'Parcel 2 Hammond Ridge Radio Tower +/- 3 acres' on a Survey Plan of a portion of the property of Katahdin Timberlands LLC and Katahdin Forest Management LLC by Plisga & Day, Land Surveyors, dated December 14, 2005, and recorded on December 14, 2005, in the Penobscot County Registry of Deeds in Plan Book 2005 Page 153 which survey, and the notes thereon, are hereby incorporated by reference.

The foregoing lot was created by lease prior to 1990.

This lot is within Parcel Four as shown on Plan Book 2005 Page 153.

Parcel Three - Lot situated in Township 1 Range 8, WELS, Penobscot County, Maine, and conveyed by Katahdin Timberlands, LLC – Option 1 Lot

A certain lot or parcel of land with the improvements thereon situate on the southerly shore of Millinocket Lake, so called, in Township 1, Range 8 WELS , County of Penobscot, State of Maine, more particularly described as follows:

> Beginning at a point near the southerly shore of said Millinocket Lake, said point being located S 78° 48' 49" W, a tie distance of 1726.33 feet from an iron rod found near the shore of said Millinocket Lake on the westerly line of lands now or formerly of Kenneth A. and Karen F. Hansen as described in Volume 5927 Page 54;

Thence N 0° 30' 16" W through lands of the grantor, a distance of 50 feet, more or less, to the high water mark of said Millinocket Lake;

Thence in a southwesterly direction, by and along the high water mark of said Millinocket Lake, a distance of 2400 feet, more or less to a point on the easterly line of lands now or formerly of Great Lakes Hydro America, LLC;

Thence S 5° 07' 52" E by and along the easterly line of said lands of Great Lakes Hydro America, LLC, a distance of 5 feet, more or less, to an iron rod found, said iron rod being located S 41° 45' 28" W, a tie distance of 2241.46 feet from the point of beginning;

Thence continuing S 5° 07' 52" E by and along the easterly line of lands now or formerly of Great Lakes Hydro America, LLC, a distance of 106.56 feet to an iron rod found;

Thence continuing S 5° 07' 52" E by and along the easterly line of lands now or formerly of Great Lakes Hydro America, LLC, a distance of 93 feet, more or less to a point on a line offset 200 feet southerly of the high water mark of said Millinocket Lake;

Thence in a general northwesterly direction, by and along the southerly line of said lands of Great Lakes Hydro America, LLC and at all times 200 feet southerly of the high water mark of said Millinocket Lake, a distance of 1540 feet, more or less to a point;

Thence S 86° 12' 39" E by and along the westerly line of said lands of Great Lakes Hydro America, LLC, a distance of 105 feet, more or less, to an iron rod found, said iron rod being located N 47° 37' 28" W, a tie distance of 1149.10 feet from the last mentioned iron rod found;

Thence continuing S 86° 12' 39" E by and along the westerly line of said lands of Great Lakes Hydro America, LLC, a distance of 80.16 feet to an iron rod found;

Thence continuing S 86° 12' 39" E by and along the westerly line of said lands of Great Lakes Hydro America, LLC, a distance of 42 feet, more or less, to the high water mark of said Millinocket Lake;

Thence in a general northerly direction, by and along the high water mark of said Millinocket Lake, a distance of 1470 feet, more or less, to a point;

Thence N 48° 06' 56" W, a distance of 16 feet, more or less, to an iron pipe found, said iron pipe being located N 1° 40' 14" E, a tie distance of 1163.40 feet from the last mentioned iron rod found;

Thence continuing N 48° 06' 56" W, a distance of 186.19 feet to an iron rod set near the center of a gravel road;

Thence S 64° 52' 46" W, a distance of 362.68 feet to an iron rod set;

Thence continuing S 64° 52' 46" W, a distance of 80 feet, more or less, to the high water mark of said Millinocket Lake;

Thence in a general southwesterly direction, by and along the high water mark of said Millinocket Lake, a distance of 330 feet, more or less, to a point;

Thence S 5° 13' 05" W, a distance of 90 feet, more or less, to an iron pipe found, said pipe being located S 52° 59' 50" W, a tie distance of 381.33 feet from the last mentioned iron rod set;

Thence continuing S 5° 13' 05" W, a distance of 184.11 feet to an iron rod set;

Thence S 79° 56' 29" W, a distance of 127.52 feet to an iron rod set on the easterly line of Parcel One;

Thence S 22° 54' 04" E by and along the easterly line of Parcel One, a distance of 338.88 feet to a point;

Thence S 62° 15' 54" W by and along the southerly line of Parcel One, a distance of 258.63 feet to a point;

Thence S 18° 25' 02" W, a distance of 647.13 feet to a point;

Thence S 32° 48' 54" E, a distance of 494.12 feet to a point;

Thence S 79° 52' 52" E, a distance of 612.80 feet to a point;

Thence S 24° 03' 47" E, d distance of 407.63 feet to a point;

Thence S 89° 50' 45" E, a distance of 1135.15 feet to a point;

Thence N 45° 29' 55" E, a distance of 1780.64 feet to a point;

Thence N 0° 30' 16" W, a distance of 1007.53 feet to the point of beginning;

Containing 89 acres, more or less.

Bearings referenced herein are oriented to Grid North of the Maine State Coordinate System, East Zone, NAD 83.

Distances cited herein are grid distances referenced to the Maine State Coordinate System, East Zone, NAD 83.

Iron rods set referenced herein are capped ¾" rebar stamped "Plisga & Day PLS 2361".

All recorded documents referenced herein are recorded in the Penobscot County Registry of Deeds unless otherwise noted.

The high water mark of said Millinocket Lake is defined as elevation 480 feet referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).

Said lot is identified as 'Parcel 3 +/- 89 acres' on a Survey Plan of a portion of the property of Katahdin Timberlands LLC and Katahdin Forest Management LLC by Plisga & Day, Land Surveyors, dated December 14, 2005, and recorded on December 14, 2005, in the Penobscot County Registry of Deeds in Plan Book 2005 Page 153 which survey, and the notes thereon, are hereby incorporated by reference.

This lot is adjacent to Parcel One and Parcel Four as shown on Plan Book 2005 Page 153.

This conveyance excludes any property within the project boundary of the Millinocket Lake Storage Development of the Penobscot Mills Project, FERC Project No. 2458, as determined by the Federal Energy Regulatory Commission in a license issued to Great Northern Paper, Inc., dated October 22, 1996, as amended by the FERC Order dated February 12, 2002, revising Shoreline Management Plan and Approving Exhibit G Drawings.

Excepting and reserving, however, to Katahdin Timberlands, LLC, and its assigns, a right of way, in common with Grantor, and its assigns, as a nonexclusive appurtenant easement, in common with Grantee and its successors and assigns, for access and utilities to land of Katahdin Timberlands, LLC, identified as Lease Lot Number 1, Lease Lot Number 2, Lease Lot Number 3, and Lease Lot Number 4 as shown on the survey plan recorded in Plan Book 2005 Page 153, subject to reasonable cost sharing with such Lease Lot owners, said easement being a 20 foot right of way, as presently used, including the right to install, maintain and operate utility services, as well as the right to convey such utility rights to public utility companies, said right of way extending from the east bound of Parcel One, in a generally northeasterly direction over the existing road and driveways from the east bound of Parcel One and across Parcel Three for access and utilities to said leased lots. Said easement is shown on the survey plan recorded in Plan Book 2005 Page 153. The center line of said right of way runs along the center line of the existing roads and said right of way extends 10 feet on each side of the center line of said right of way. This easement includes the right, but not the obligation, to maintain said road and to plow and remove snow from said roadway. This easement also includes the right to maintain and operate utility services as presently laid out and shown on the survey plan recorded in Plan Book 2005 Page 153 even if such utilities are outside of said 20 foot strip. This reserved right of way for access and utilities is subject to the right of Grantee and its successors and assigns to relocate said right of way and utilities within Parcels One and

Three such that Katahdin Timberlands, LLC, and its successors and assigns have access and utility services to and for said leased lots, such relocation to be solely at the expense of Grantee and its successors and assigns.

Parcel Four- Lot situated in Township 1 Range 8, WELS, Penobscot County, Maine, and Township 1 Range 9, WELS, Piscataquis County, Maine, and conveyed by Katahdin Forest Management, LLC - Option 2 Lot

A certain lot or parcel of land with the improvements thereon situate on the southerly shore of Millinocket Lake, so called in Township 1 Range 8 WELS, County of Penobscot and Township 1 Range 9 WELS, County of Piscataquis, State of Maine, more particularly described as follows:

Beginning in Township 1 Range 8 WELS, County of Penobscot at an iron rod found near the shore of said Millinocket Lake on the westerly line of lands now or formerly of Kenneth A. and Karen F. Hansen as described in Volume 5927 Page 54;

Thence S 0° 02' 03" E by and along the westerly line of said lands of Hansen, a distance of 771.93 feet to an iron rod found at the northwesterly corner of lands now or formerly of Brian C. Atwood, as described in Volume 5765, Page 186;

Thence continuing S 0° 02' 03" E, by and along the westerly line of said lands of Atwood, a distance of 555.40 feet to an iron rod set;

Thence S 89° 31' 24" E by and along the southerly line of said lands of Atwood, a distance of 316.13 feet to an iron rod found at the southwesterly corner of lands now or formerly of Stephen A. Hart as described in Volume 9285, Page 2;

Thence continuing S 89° 31' 24" E by and along the southerly line of said lands of Hart, lands now or formerly of Jeffrey L and Madolin M. Hobbs as described in Volume 4862, Page 21 and lands now or formerly of Raymond K. and Muriel C. Woodworth as described in Volume 3348, Page 82, a distance of 1196.92 feet to an iron pipe found at the southeasterly corner of said lands of Woodworth;

Thence S 39° 49' 35" E, a distance of 787.28 feet to an iron rod set;

Thence S 14° 23' 12" E, a distance of 4868.38 feet to an iron rod set;

Thence S 51° 29' 50" W, a distance of 4431.63 feet to an iron rod set on the northeasterly line of a 200 foot wide electric transmission line right of way owned by Great Lakes Hydro America, LLC;

Thence N 53° 46' 16" W by and along the northeasterly line of said Great Lakes Hydro America, LLC transmission line right of way and crossing into Township 1 Range 9 WELS, County of Piscataquis, a distance of 8858.55 feet to an iron rod

set on the easterly sideline of the State Park Road as depicted on the Maine State Highway Commission Right of Way Map for State Aid Highway No. 1, S.H.C. File No. S-11-107 dated May 1968 and recorded in Map File #247 of the Piscataquis County Registry of Deeds;

Thence N 23° 34' 13" W by and along the easterly sideline of said State Park Road, a distance of 176.17 feet to a point of tangency;

Thence in a northerly direction by and along the easterly sideline of said State Park Road, along a curve to the left with a radius of 2155.01 feet, an arc distance of 812.35 feet to a non-tangent point, said curve having a chord bearing N 34° 22' 10" W, a chord distance of 807.54 feet;

Thence N 44° 13' 29" W by and along the easterly sideline of said State Park Road, a distance of 219.97 feet to a point;

Thence N 49° 49' 40" W, by and along the easterly sideline of said State Park Road, a distance of 22.36 feet to an iron rod set;

Thence N 19° 08' 46" W by and along the easterly line of said Great Lakes Hydro America, LLC transmission line right of way, a distance of 1108.25 feet to an iron rod set;

Thence S 83° 44' 36" E, a distance of 774.40 feet to an iron rod set near the top of Black Cat Mountain, so called;

Thence continuing S 83° 44' 36" E, a distance of 224.47 feet to a point near the top of said Black Cat Mountain;

Thence N 20° 01' 02" E, a distance of 205.52 feet to an iron rod set;

Thence continuing N 20° 01' 02" E, a distance of 1410.48 feet to an iron rod set on the southerly side of the Black Cat Road, so called, and the southerly edge of an easement 50 feet in width encompassing a portion of said road;

Thence S 48° 51' 49" E, a distance of 103.95 feet to a point southerly of said Black Cat Road;

Thence S 60° 13' 11" E, a distance of 101.59 feet to a wood post found on the Piscataquis/Penobscot County line and the Township 1 Range 9 WELS/Township 1, Range 8 WELS line southerly of said Black Cat Road;

Thence S 65° 20' 45" E, a distance of 171.90 feet to a point southerly of said Black Cat Road;

Thence S 78° 51' 58" E, a distance of 166.21 feet to a point southerly of said Black Cat Road;

Thence N 85° 05' 49" E, a distance of 246.50 feet to a point southerly of said Black Cat Road;

Thence S 74° 36' 27" E, a distance of 150.85 feet to a point southerly of said Black Cat Road;

Thence S 63° 21' 20" E, a distance of 116.50 feet to a point southerly of said Black Cat Road;

Thence S 56° 57' 13" E, a distance of 159.64 feet to a point southerly of said Black Cat Road;

Thence S 57° 56' 18" E, a distance of 224.76 feet to a point southerly of said Black Cat Road;

Thence S 49° 55' 49" E, a distance of 121.89 feet to a point southerly of said Black Cat Road;

Thence S 65° 59' 45" E, a distance of 135.43 feet to a point southerly of said Black Cat Road;

Thence S 80° 07' 00" E, a distance of 146.72 feet to a point southerly of said Black Cat Road;

Thence N 76° 12' 23" E, a distance of 55.58 feet to a point southerly of said Black Cat Road;

Thence N 39° 42' 58" E, a distance of 52.39 feet to a point southerly of said Black Cat Road;

Thence N 20° 48' 00" E, a distance of 293.84 feet to a point southerly of said Black Cat Road;

Thence N 7° 56' 24" E, a distance of 52.52 feet to an iron rod found southerly of said Black Cat Road;

Thence N 9° 35' 16" E, a distance of 124.51 feet to a point southerly of said Black Cat Road;

Thence S 88° 21' 32" E, a distance of 18.65 feet to a point;

Thence S 20° 28' 28" E, a distance of 207.86 feet to a point;

Thence S 18° 25' 02" W, a distance of 647.13 feet to a point;

Thence S 32° 48' 54" E, a distance of 494.12 feet to a point;

Thence S 79° 52' 52" E, a distance of 612.80 feet to a point;

Thence S 24° 03' 47" E, d distance of 407.63 feet to a point;

Thence S 89° 50' 45" E, a distance of 1135.15 feet to a point;

Thence N 45° 29' 55" E, a distance of 1780.64 feet to a point;

Thence N 0° 30' 16" W, a distance of 1007.53 feet to a point, said point being located S 78° 48' 49" W, a tie distance of 1726.33 feet from the point of beginning;

Thence continuing N 0° 30' 16" W, a distance of 50 feet, more or less, to the high water mark of said Millinocket Lake;

Thence in a general easterly direction, by and along the high water mark of said Millinocket Lake, a distance of 1770 feet, more or less, to its intersection with the westerly line of said lands of Hansen;

Thence S 0° 02' 03" E by and along the westerly line of said lands of Hansen, a distance of 10 feet, more or less, to the point of beginning;

Containing 1361 acres, more or less.

Bearings referenced herein are oriented to Grid North of the Maine State Coordinate System, East Zone, NAD 83.

Distances cited herein are referenced to the Maine State Coordinate System, East Zone, NAD 83.

Iron rods set referenced herein are capped ¾" rebar stamped "Plisga & Day PLS 2361".

All recorded documents referenced herein are recorded in the Penobscot County Registry of Deeds unless otherwise noted.

The high water mark of said Millinocket Lake is defined as elevation 480 feet referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).

Said lot is identified as 'Parcel 4 +/- 1361 acres' on a Survey Plan of a portion of the property of Katahdin Timberlands LLC and Katahdin Forest Management LLC by Plisga & Day, Land Surveyors, dated December 14, 2005, and recorded on December 14, 2005,

in the Penobscot County Registry of Deeds in Plan Book 2005 Page 153 which survey, and the notes thereon, are hereby incorporated by reference.

This conveyance excludes any property within the project boundary of the Millinocket Lake Storage Development of the Penobscot Mills Project, FERC Project No. 2458, as determined by the Federal Energy Regulatory Commission in a license issued to Great Northern Paper, Inc., dated October 22, 1996, as amended by the FERC Order dated February 12, 2002, revising Shoreline Management Plan and Approving Exhibit G Drawings.

This lot is adjacent to Parcels One, Two and Three as shown on Plan Book 2005 Page 153.

This conveyance is subject to one certain utility easement conveyed by Great Northern Nekoosa Corporation to Mark McVey and Lisa McVey dated January 7, 1987 and recorded in the Penobscot County Registry of Deeds in Book 5927 Page 53.

Parcel Five - Appurtenant Easements to Parcels One, Two, Three and Four

Right of Way Number One – Black Cat Road –

Also hereby conveying, in common with Grantor, its assigns, and others, as a perpetual non exclusive appurtenant easement for access and utilities to Parcels One, Two, Three and Four, a 50 foot right of way, for all purposes of a way, including the right to install, maintain and operate utility services, including underground utilities, but excluding gas, diesel, natural gas, fuel and any other petroleum products, as well as the right to convey such utility rights to public utility companies. Said easement encompassing a portion of the Black Cat Road, so called, and is situate near the southerly shore of Millinocket Lake, so called in Township 1 Range 8 WELS, County of Penobscot and Township 1 Range 9 WELS, County of Piscataquis, State of Maine, said right of way extending from the State Park Road, so-called, in a generally easterly direction along the south shore of Millinocket Lake and is over a portion of Fire Lane 20, also known as the Black Cat Road, so-called, a private way, for access and utilities to the west bound of Parcel One. Said easement is shown on the survey plan recorded in Plan Book 2005 Page 153. This easement includes the right, but not the obligation, to maintain said road and to plow and remove snow from said roadway. This easement also includes the right to maintain and operate utility services as presently laid out along said road even if such utilities are outside of said 50 foot strip. This easement is not limited to current uses of Parcels One, Two, Three and Four but includes future development of said parcels for residential and commercial purposes including hotel/resort and subdivision uses.

Said right of way and easement is over a strip of land 50 feet in width which is partially described as follows:

> Beginning at an iron rod set southerly of said Black Cat Road at the northwesterly corner of Parcel Four;

Thence S 48° 51' 49" E, a distance of 103.95 feet to a point southerly of said Black Cat Road;

Thence S 60° 13' 11" E, a distance of 101.59 feet to a wood post found on the Piscataquis/Penobscot County line and the Township 1 Range 9 WELS/Township 1, Range 8 WELS line southerly of said Black Cat Road;

Thence S 65° 20' 45" E, a distance of 171.90 feet to a point southerly of said Black Cat Road;

Thence S 78° 51' 58" E, a distance of 166.21 feet to a point southerly of said Black Cat Road;

Thence N 85° 05' 49" E, a distance of 246.50 feet to a point southerly of said Black Cat Road;

Thence S 74° 36' 27" E, a distance of 150.85 feet to a point southerly of said Black Cat Road;

Thence S 63° 21' 20" E, a distance of 116.50 feet to a point southerly of said Black Cat Road;

Thence S 56° 57' 13" E, a distance of 159.64 feet to a point southerly of said Black Cat Road;

Thence S 57° 56' 18" E, a distance of 224.76 feet to a point southerly of said Black Cat Road;

Thence S 49° 55' 49" E, a distance of 121.89 feet to a point southerly of said Black Cat Road;

Thence S 65° 59' 45" E, a distance of 135.43 feet to a point southerly of said Black Cat Road;

Thence S 80° 07' 00" E, a distance of 146.72 feet to a point southerly of said Black Cat Road;

Thence N 76° 12' 23" E, a distance of 55.58 feet to a point southerly of said Black Cat Road;

Thence N 39° 42' 58" E, a distance of 52.39 feet to a point southerly of said Black Cat Road;

Thence N 20° 48' 00" E, a distance of 293.84 feet to a point southerly of said Black Cat Road;

Thence N 7° 56' 24" E, a distance of 52.52 feet to an iron rod found southerly of said Black Cat Road;

Thence N 9° 35' 16" E, a distance of 124.51 feet to a point southerly of said Black Cat Road and on the westerly line of Parcel One;

Thence N 88° 22' 40" W by and along the westerly line of Parcel One and crossing said Black Cat Road, a distance of 40.87 feet to a point;

Thence N 19° 25' 34" W by and along the westerly line of said Parcel One, a distance of 19.61 feet to a point;

Thence S 9° 35' 16" W, a distance of 136.73 feet to a point northerly of said Black Cat Road;

Thence S 7° 56' 24" W, a distance of 47.60 feet to a point northerly of said Black Cat Road;

Thence S 20° 48' 00" W, a distance of 279.87 feet to a point northerly of said Black Cat Road;

Thence S 39° 42' 58" W, a distance of 27.58 feet to a point northerly of said Black Cat Road;

Thence S 76° 12' 23" W, a distance of 28.62 feet to a point northerly of said Black Cat Road;

Thence N 80° 07' 00" W, a distance of 130.05 feet to a point northerly of said Black Cat Road;

Thence N 65° 59' 45" W, a distance of 122.18 feet to a point northerly of said Black Cat Road;

Thence N 49° 55' 49" W, a distance of 118.33 feet to a point northerly of said Black Cat Road;

Thence N 57° 56' 18" W, a distance of 227.83 feet to a point northerly of said Black Cat Road;

Thence N 56° 57' 13" W, a distance of 162.00 feet to a point northerly of said Black Cat Road;

Thence N 63° 21' 20" W, a distance of 124.23 feet to a point northerly of said Black Cat Road;

Thence N 74° 36' 27" W, a distance of 164.73 feet to a point northerly of said Black Cat Road;

Thence S 85° 05' 49" W, a distance of 248.41 feet to a point northerly of said Black Cat Road;

Thence N 78° 51' 58" W, a distance of 153.24 feet to a point northerly of said Black Cat Road;

Thence N 65° 20' 45" W, a distance of 163.74 feet to a point northerly of said Black Cat Road;

Thence N 60° 13' 11" W crossing into Township 1, Range 9, Piscataquis County, a distance of 94.38 feet to a point northerly of said Black Cat Road;

Thence N 48° 51' 49" W, a distance of 118.29 feet to a point northerly of said Black Cat Road;

Thence S 20° 01' 02" W crossing said Black Cat Road, a distance of 53.60 feet to the point of beginning;

Bearings referenced herein are oriented to Grid North of the Maine State Coordinate System, East Zone, NAD 83.

Distances cited herein are grid distances referenced to the Maine State Coordinate System, East Zone, NAD 83.

Iron rods set referenced herein are capped ¾" rebar stamped "Plisga & Day PLS 2361".

Said 50 foot right of way, from its westerly terminus described above, runs westerly from such terminus over the existing Black Cat Road to the State Park Road and is located 25 feet on each side of the centerline of the existing roadway.

Right of Way Number One is subject to:
a-the terms and conditions of the Ripogenus Transmission Line Easement, which crosses said right of way as approximately shown on the survey plan recorded in Plan Book 2005 Page 153, as set out in the deed from Great Northern Paper, Inc., and Maine Timberlands, Inc., to GNE, LLC, dated January 31, 2002, and recorded in the Penobscot County Registry of Deeds in Book 8063 Page 98 (Piscataquis County – Book 1366 Page 1) as amended by deeds recorded in Book 9214, Page 303 (Piscataquis County – Book 1535 Page 255), Book 9349, Page 1 (Piscataquis County – Book 1561 Page 1) and Book 9349 Page 156 (Piscataquis County – Book 1561 Page 10); and
b-the terms and conditions of the Ripogenus Development, FERC Project No. 2572, as determined by the Federal Energy Regulatory Commission in a license issued to Great Northern Paper, Inc., dated October 22, 1996.

Right of Way Number Two – New Access Road –

Also hereby conveying, in common with Grantor, its assigns, and others, as a perpetual non exclusive appurtenant easement for access and utilities to Parcels One, Two, Three and Four, a 100 foot right of way, for all purposes of a way, including the right to install, maintain and operate utility services, including underground utilities, but excluding gas, diesel, natural gas, fuel and any other petroleum products, as well as the right to convey such utility rights to public utility companies, said right of way extending from the State Park Road, so-called, in a generally northeasterly direction for access and utilities to the southwest bound of Parcel Four. Said easement is shown on the survey plan recorded in Plan Book 2005 Page 153. This easement includes the right to construct a road and install utility services within said strip. Said road may be paved by Grantee with asphalt or a similar year round road surface. This easement includes the right, but not the obligation, to maintain said road and to plow and remove snow from said roadway. This easement is not limited to current uses of Parcels One, Two, Three and Four but includes future development of said parcels for residential and commercial purposes including hotel/resort and subdivision uses. This easement includes the right to erect signs within said strip at the intersection of the strip with the State Park Road. Grantee, by acceptance of this easement, assumes the obligation to construct and maintain the road leading to Parcel Four and agrees to construct and maintain said improvements in accordance with the standards, rules and requirements, including permitting requirements, of the Land Use Regulation Commission and/or any other governmental entity with land use jurisdiction over the area.

The centerline of said 100 foot strip is as follows:

Beginning at a point on the southwesterly line Parcel Four, said point being located N 53° 46' 16" W, a distance of 3783.16 feet from an iron rod set at the southwesterly corner of said parcel;

Thence S 45° 12' 03" W, a distance of 91.35 feet to a point;

Thence S 28° 44' 52" W, a distance of 123.73 feet to a point;

Thence S 46° 59' 49" W, a distance of 101.89 feet to a point;

Thence S 61° 19' 46" W, a distance of 137.91 feet to a point;

Thence S 32° 38' 08" W, a distance of 166.33 feet to a point;

Thence S 50° 32' 31" W, a distance of 238.41 feet to a point;

Thence S 30° 25' 58" W, a distance of 231.23 feet to a point;

Thence S 18° 27' 49" W, a distance of 172.09 feet to a point;

Thence S 37° 38' 54" W, a distance of 138.01 feet to a point;

Thence S 65° 47' 26" W, a distance of 238.94 feet to a point on the northeasterly sideline of said State Park Road as described in the Penobscot County Commissioner's layout dated April 1914 and recorded in Volume 14, Page 161 of said County Commissioner's records.

The sidelines of the 100 foot wide easement described herein extend northeasterly to intersect the southwesterly sideline of Parcel Four and extend southwesterly to intersect the northeasterly sideline of said State Park Road.

Bearings referenced herein are oriented to Grid North of the Maine State Coordinate System, East Zone, NAD 83.

Distances cited herein are referenced to the Maine State Coordinate System, East Zone, NAD 83.

Right of Way Number Two is subject to:
a-the terms and conditions of the Ripogenus Transmission Line Easement, which crosses said right of way as shown on the survey plan recorded in Plan Book 2005 Page 153, as set out in the deed from Great Northern Paper, Inc., and Maine Timberlands, Inc., to GNE, LLC, dated January 31, 2002, and recorded in the Penobscot County Registry of Deeds in Book 8063 Page 98 (Piscataquis County – Book 1366 Page 1) as amended by deeds recorded in Book 9214, Page 303 (Piscataquis County – Book 1535 Page 255), Book 9349, Page 1 (Piscataquis County – Book 1561 Page 1) and Book 9349 Page 156 (Piscataquis County – Book 1561 Page 10); and
b-the terms and conditions of the Ripogenus Development, FERC Project No. 2572, as determined by the Federal Energy Regulatory Commission in a license issued to Great Northern Paper, Inc., dated October 22, 1996.

Grantee, and its successors and assigns, by acceptance of this deed, covenant and agree with Grantor and its successors and assigns, that whether or not Grantor undertakes any maintenance or repair of roads or other property used to access the parcels and easements conveyed herein:

(a)Grantor makes no assurances that it will, nor shall Grantor otherwise have any duty or obligation to, keep such roadways or other property safe for entry or use by any person for any purpose, including, but not limited to, recreation or harvesting activities or for any other purpose or to give warning of any hazardous condition, use, structure, or activity thereon to any persons entering the parcels or easements conveyed hereby or the roadways, or other property, for any other purpose;

(b)Grantor does not owe any duty of care, nor does Grantor otherwise assume any other duty or responsibility to Grantee and its successors and assigns for any injury to persons or property suffered or incurred in connection with any use of or access to the parcels conveyed hereby in connection with any use of the parcels and easements conveyed hereby;

(c)With respect to Right of Way Number One, the easement over the Black Cat Road crossing land of Grantor is conveyed in common with Grantor and others. Grantee's use of such easement shall be subject to reasonable rules and regulations adopted by Grantor from time to time concerning use of the Black Cat Road crossing Grantor's lands, that do not interfere with the use of the easement, except temporarily as provided next below, including sharing the cost of maintaining such roads among all users of such roads. Such rules and regulations may provide for seasonal and temporary road closures for construction and maintenance purposes. Grantee acknowledges that Grantor reserves the right to use the Black Cat Road, to the extent that the Road is on Grantor's property, for any purpose including, but not limited to, use for timber harvesting, silviculture, use for the transportation of equipment, materials, wood and other forest products and use for forest management related purposes. Grantor is under no obligation to perform maintenance or improvements to the Black Cat Road as a result of granting this easement, but agrees to enter into reasonable cost sharing arrangements between Grantee and Grantor's leasees and assigns who use the road. Such arrangement shall be directly between Grantee and the road association formed by Grantor's leasees and/or assignees. Grantor reserves the right to relocate said road from time to time.

Grantee, by acceptance of this deed, acknowledges and agrees that the use of the Black Cat Road by the Grantee and its successors and assigns, shall be at their sole risk, cost and expense. Grantee, by acceptance of this deed, for itself and its successors and assigns, hereby covenants and agrees to indemnify and hold harmless the Grantor, its successors, assigns, parent entity and subsidiary entities, and the officers, directors, employees, shareholders, and the owners of any of the foregoing ("Indemnitees"), from and against any and all liability, cost and expense, including reasonable attorney fees, in connection with or related to the use or ownership of the Black Cat Road, by the Grantee, its successors, assigns, guests, invitees, licensees, or contractors; provided however, that Grantee, its successors and assigns shall have no duty to indemnify and hold the Indemnitees harmless from claims arising from conditions or conduct caused or allowed by Indemnitees.

(d)With respect to Right of Way Number Two, Grantee acknowledges that Grantor reserves the right to use the road to be built by Grantee on property of Grantor on said easement for any purpose including, but not limited to, use for timber harvesting, silviculture, use for the transportation of equipment, materials, wood and other forest products and use for forest management related purposes. Grantor shall be responsible for repairing damage to Grantee's road caused by Grantor's equipment and Grantor shall not use such road for timber harvesting or transportation of

harvesting equipment or commercial forestry products during such times as the State Park Road is posted against use by heavy loads.

Grantee, by acceptance of this deed, for itself and its successors and assigns, hereby covenants and agrees to indemnify and hold harmless the Grantor, its successors, assigns, parent entity and subsidiary entities, and the officers, directors, employees, shareholders, and the owners of any of the foregoing ("Indemnitees"), from and against any and all liability, cost and expense, including reasonable attorney fees, in connection with or related to the use or ownership of Right of Way Number Two by the Grantee, its successors, assigns, guests, invitees, licensees, or contractors; provided however, that Grantee, its successors and assigns shall have no duty to indemnify and hold the Indemnitees harmless from claims arising from conditions or conduct caused or allowed by Indemnitees.

Grantor and its successors and assigns agree to enter into reasonable cost sharing arrangements for Right of Way Number Two reflecting the respective use of the right of way by the parties.

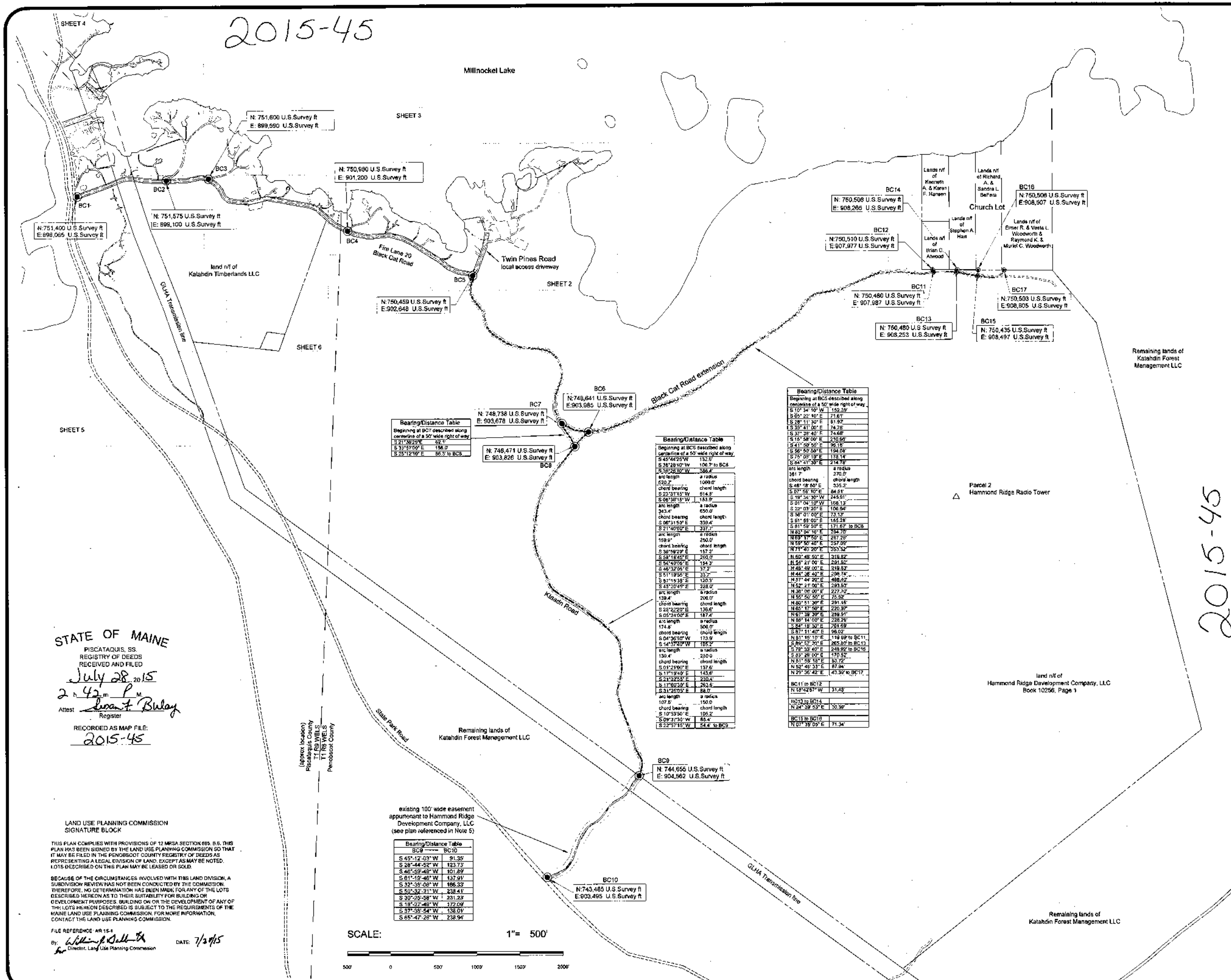
To the extent permitted by Grantee, its successors and assigns, the users of Right of Way Number Two may include, under the same terms and conditions as conveyed herein landowners adjacent to Parcels Three and Four, said landowners and/or parcels of land being identified on Plan Book 2005 Page 153 as Lot 1, Lot 2, Lot 3, Lot 4, Lands now or formerly of Kenneth A. and Karen F. Hansen Volume 5927 Page 54, Lands now or formerly of Stephen A. Hart Volume 9285 Page 2, Lands now or formerly of Jeffrey L. and Madolin M. Hobbs Volume 4862 Page 21, Lands now or formerly of Raymond K. and Muriel C. Woodworth Volume 3348 Page 82, and Lands now or formerly of Brian C. Atwood Volume 5765 Page 186, in connection with Grantee's conveyance to such parties/landowners of appurtenant access easements across Parcels Three and/or Four from such parcels of land to the State Park Road.

Right of Way Number One and Right of Way Number Two are identified as 'Fire Lane 20 Black Cat Road' and '100' wide easement' on a Survey Plan of a portion of the property of Katahdin Timberlands LLC and Katahdin Forest Management LLC by Plisga & Day, Land Surveyors, dated December 14, 2005, and recorded on December 14, 2005, in the Penobscot County Registry of Deeds in Plan Book 2005 Page 153 which survey, and the notes thereon, are hereby incorporated by reference.

Maine Real Estate
Transfer Tax Paid

PENOBSCOT COUNTY, MAINE
Susan F. Bulay
Register of Deeds

2015-45



Bearing/Distance Table	
Beginning at BC7 described along centerline of a 50' wide right of way	
S 21°38'25"E	62.1'
S 33°51'00" E	156.0'
S 25°12'10" E	86.3' to BC8

Bearing/Distance Table	
Beginning at BC6 described along centerline of a 50' wide right of way	
S 45°44'25"W	132.6'
S 36°28'10" W	100.7' to BC8
S 36°28'10" W	386.4'
arc length 620.7'	a radius 1000.0'
chord bearing S 23°31'15" W	chord length 614.8'
S 06°36'15" W	153.9'
arc length 343.4'	a radius 650.0'
chord bearing S 06°31'50" E	chord length 339.4'
S 21°40'00" E	337.7'
arc length 159.9'	a radius 250.0'
chord bearing S 39°59'20" E	chord length 157.2'
S 58°18'45" E	260.0'
S 54°40'05" E	154.3'
S 46°32'05" E	37.2'
S 51°19'55" E	33.7'
S 57°15'35" E	120.3'
S 45°20'45" E	228.0'
arc length 139.4'	a radius 200.0'
chord bearing S 25°22'20" E	chord length 136.6'
S 05°24'00" E	187.4'
arc length 174.8'	a radius 500.0'
chord bearing S 04°36'50" W	chord length 173.9'
S 14°37'40" W	105.2'
arc length 139.4'	a radius 250.0
chord bearing S 01°21'00" E	chord length 137.6'
S 17°19'40" E	143.8'
S 21°32'55" E	230.4'
S 17°00'30" E	263.6'
S 31°26'05" E	88.0'
arc length 107.6'	a radius 150.0
chord bearing S 10°53'50" E	chord length 105.2'
S 09°37'30" W	85.4'
S 22°57'15" W	54.4' to BC9

Bearing/Distance Table	
Beginning at BC5 described along centerline of a 50' wide right of way	
S 10° 34' 10" W	152.39'
S 05° 22' 10" E	71.61'
S 28° 11' 30" E	81.92'
S 39° 41' 00" E	74.76'
S 37° 38' 40" E	74.68'
S 16° 58' 00" E	210.66'
S 41° 50' 50" E	95.16'
S 56° 50' 50" E	194.08'
S 75° 05' 10" E	178.14'
S 84° 41' 30" E	214.78'
arc length 361.7'	a radius 270.0'
chord bearing S 46° 18' 50" E	chord length 335.3'
S 07° 56' 10" E	84.51'
S 19° 34' 30" W	249.91'
S 01° 04' 10" W	166.13'
S 22° 03' 20" E	100.94'
S 36° 01' 00" E	73.13'
S 61° 55' 00" E	155.28'
S 81° 58' 50" E	171.67' to BC6
N 83° 04' 10" E	204.70'
N 69° 17' 50" E	287.25'
N 59° 50' 40" E	257.09'
N 71° 40' 20" E	353.32'
N 60° 46' 50" E	316.82'
N 54° 21' 00" E	201.52'
N 46° 49' 00" E	219.83'
N 44° 36' 40" E	208.74'
N 57° 44' 20" E	488.40'
N 52° 21' 00" E	293.53'
N 38° 08' 00" E	227.70'
N 55° 50' 50" E	75.52'
N 80° 51' 30" E	291.15'
N 65° 17' 50" E	220.97'
N 67° 39' 30" E	259.91'
N 88° 14' 00" E	228.29'
S 84° 18' 30" E	791.69'
S 87° 11' 40" E	96.02'
N 81° 15' 10" E	119.69' to BC11
S 89° 57' 20" E	265.80' to BC13
S 78° 33' 40" E	248.92' to BC15
S 83° 28' 00" E	170.52'
N 81° 58' 18" E	53.72'
N 52° 46' 33" E	87.94'
N 29° 36' 42" E	43.39' to BC17
BC11 to BC12	
N 18°42'57" W	31.48'
BC13 to BC14	
N 24° 39' 53" E	30.39'
BC15 to BC16	
N 07° 35' 05" E	71.34'

Bearing/Distance Table	
BC9 —— BC10	
S 45°-12'-03" W	91.35'
S 28°-44'-52" W	123.73'
S 46°-59'-49" W	101.89'
S 61°-19'-46" W	137.91'
S 32°-39'-08" W	166.33'
S 50°-32'-31" W	238.41'
S 30°-25'-58" W	231.23'
S 18°-27'-48" W	172.09'
S 37°-38'-54" W	138.01'
S 65°-47'-26" W	238.94'

STATE OF MAINE
PISCATAQUIS, SS.
REGISTRY OF DEEDS
RECEIVED AND FILED
July 28 2015
2 h 42 m P M
Attest Susan F. Bulay
Register
RECORDED AS MAP FILE:
2015-45

LAND USE PLANNING COMMISSION
SIGNATURE BLOCK

THIS PLAN COMPLIES WITH PROVISIONS OF 12 MRSA SECTION 685. B.6. THIS PLAN HAS BEEN SIGNED BY THE LAND USE PLANNING COMMISSION SO THAT IT MAY BE FILED IN THE PENOBSCOT COUNTY REGISTRY OF DEEDS AS REPRESENTING A LEGAL DIVISION OF LAND. EXCEPT AS MAY BE NOTED. LOTS DESCRIBED ON THIS PLAN MAY BE LEASED OR SOLD.

BECAUSE OF THE CIRCUMSTANCES INVOLVED WITH THIS LAND DIVISION, A SUBDIVISION REVIEW HAS NOT BEEN CONDUCTED BY THE COMMISSION. THEREFORE, NO DETERMINATION HAS BEEN MADE FOR ANY OF THE LOTS DESCRIBED HEREON AS TO THEIR SUITABILITY FOR BUILDING OR DEVELOPMENT PURPOSES. BUILDING ON OR THE DEVELOPMENT OF ANY OF THE LOTS HEREON DESCRIBED IS SUBJECT TO THE REQUIREMENTS OF THE MAINE LAND USE PLANNING COMMISSION. FOR MORE INFORMATION, CONTACT THE LAND USE PLANNING COMMISSION.

FILE REFERENCE: AR 15-1

By: William J. Galbraith for Director, Land Use Planning Commission DATE: 7/29/15

2015-45

NOTES

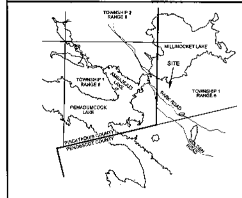
(1) Documents referenced on this plan are recorded in the Penobscot County Registry of Deeds unless otherwise noted.

(2) Bearings are oriented to Grid North of the Maine State Coordinate System, East Zone, NAD 83.

(3) Distances shown on this plan are grid distances referenced to the Maine State coordinate system, East Zone, NAD 83.

(4) Coordinates cited hereon are referenced to the Maine State Coordinate System, East Zone, NAD 83

(5) Reference is made to a plan by Plisga & Day Land Surveyors titled "Survey Plan of a portion of the property of Katahdin Timberlands LLC and Katahdin Forest Management LLC", dated December 14, 2005 in Plan File 2005 - 153.



SITE LOCATION MAP– NOT TO SCALE

ADAM N. ROBINSON NO. 2361

Survey Standard:

These plans were prepared from information obtained by a survey conforming substantially to the requirements of Technical Standards contained in Chapter 90, Part 2, of the Rules of the Board of Licensure for Professional Land Surveyors, effective April 1, 2001

Adam N. Robinson, Maine Licensed Professional Land Surveyor No. 2361

GRID NORTH MSCS EAST ZONE NAD 83
MAGNETIC

LEGEND:

- UTILITY POLE
- GUY/ANCHOR
- PROPERTY LINE
- OVERHEAD WIRES
- GRAVEL ROAD/DRIVEWAY
- LOCATION OF ACCESS POINTS

SHEET TITLE
Road Plan and Index

Township 1 Range 9 WELS
Piscataquis County, Maine

Township 1 Range 8 WELS
Penobscot County, Maine

Record Owners:

Katahdin Timberlands LLC,
4 Hill Street, Millinocket, Maine

Katahdin Forest Management LLC,
4 Hill Street, Millinocket, Maine

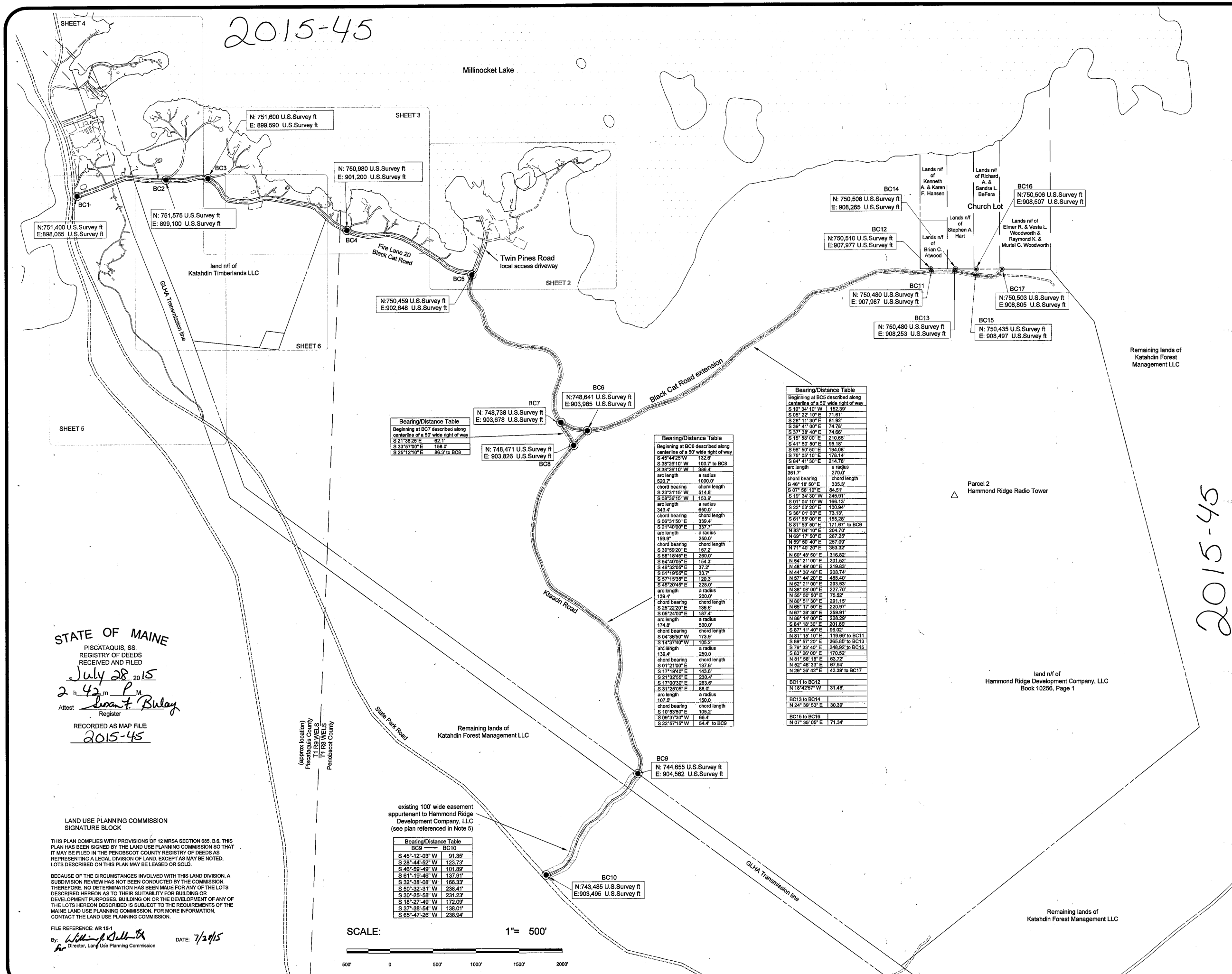
Twin Pine Camps, LLC,
T1R8, Penobscot County, Maine

Hammond Ridge Development Company, LLC,
T1R8, Penobscot County, Maine

PLISGA & DAY
LAND SURVEYORS
72 MAIN STREET
BANGOR, ME 04401
(207) 947-0019

DWG: 05237
DATE: July 15, 2015
SCALE: 1"=500'
SHEET: 1 OF 8

2015-45



Bearing/Distance Table	
Beginning at BC7 described along centerline of a 50' wide right of way	
S 21°38'25"E	62.1'
S 33°57'00" E	158.0'
S 25°12'10" E	86.3' to BC8

Bearing/Distance Table	
Beginning at BC6 described along centerline of a 50' wide right of way	
S 45°44'25"W	132.6'
S 38°26'10" W	100.7' to BC8
S 38°26'10" W	386.4'
arc length 520.7'	a radius 1000.0'
chord bearing S 23°31'15" W	chord length 514.8'
S 08°36'15" W	153.9'
arc length 343.4'	a radius 650.0'
chord bearing S 06°31'50" E	chord length 339.4'
S 21°40'00" E	337.7'
arc length 159.9"	a radius 250.0'
chord bearing S 39°59'20" E	chord length 157.2'
S 58°18'45" E	260.0'
S 54°40'05" E	154.3'
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S 51°19'55" E	33.7'
S 57°15'35" E	120.3'
S 45°20'45" E	228.0'
arc length 139.4'	a radius 200.0'
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S 05°24'00" E	187.4'
arc length 174.8'	a radius 500.0'
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chord bearing S 01°21'00" E	chord length 137.6'
S 17°19'40" E	143.6'
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S 17°00'30" E	263.6'
S 31°25'05" E	88.0'
arc length 107.5'	a radius 150.0
chord bearing S 10°53'50" E	chord length 105.2'
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S 22°57'15" W	54.4' to BC9

Bearing/Distance Table	
Beginning at BC5 described along centerline of a 50' wide right of way	
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S 37° 38' 40" E	74.66'
S 15° 58' 00" E	210.66'
S 41° 50' 50" E	95.18'
S 56° 50' 50" E	194.08'
S 75° 05' 10" E	178.14'
S 84° 41' 30" E	214.78'
arc length 361.7'	a radius 270.0'
chord bearing S 46° 18' 50" E	chord length 335.3'
S 07° 56' 10" E	84.51'
S 19° 34' 30" W	245.91'
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S 36° 01' 00" E	73.13'
S 61° 55' 00" E	155.28'
S 81° 59' 50" E	171.67' to BC6
N 83° 04' 10" E	204.70'
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N 59° 50' 40" E	257.09'
N 71° 40' 20" E	353.32'
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N 65° 17' 50" E	220.97'
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S 84° 18' 30" E	201.69'
S 87° 11' 40" E	96.02'
N 81° 15' 10" E	119.69' to BC11
S 89° 57' 20" E	265.80' to BC13
S 79° 33' 40" E	248.92' to BC15
S 83° 26' 00" E	170.52'
N 81° 58' 18" E	63.72'
N 52° 46' 33" E	67.94'
N 29° 36' 42" E	43.39' to BC17
BC11 to BC12	
N 18°42'57" W	31.48'
BC13 to BC14	
N 24° 39' 53" E	30.39'
BC15 to BC16	
N 07° 35' 05" E	71.34'

existing 100' wide easement appurtenant to Hammond Ridge Development Company, LLC (see plan referenced in Note 5)

Bearing/Distance Table	
BC9 ⟶ BC10	
S 45°-12'-03" W	91.35'
S 28°-44'-52" W	123.73'
S 46°-59'-49" W	101.89'
S 61°-19'-46" W	137.91'
S 32°-38'-08" W	166.33'
S 50°-32'-31" W	238.41'
S 30°-25'-58" W	231.23'
S 18°-27'-49" W	172.09'
S 37°-38'-54" W	138.01'
S 65°-47'-26" W	238.94'

SCALE: 1"= 500'

500' 0 500' 1000' 1500' 2000'

STATE OF MAINE
PISCATAQUIS, SS.
REGISTRY OF DEEDS
RECEIVED AND FILED
July 28 2015
2 h 42 m P M
Attest Susan F. Bulay
Register
RECORDED AS MAP FILE:
2015-45

LAND USE PLANNING COMMISSION
SIGNATURE BLOCK

THIS PLAN COMPLIES WITH PROVISIONS OF 12 MRSA SECTION 685, B.6. THIS PLAN HAS BEEN SIGNED BY THE LAND USE PLANNING COMMISSION SO THAT IT MAY BE FILED IN THE PENOBSCOT COUNTY REGISTRY OF DEEDS AS REPRESENTING A LEGAL DIVISION OF LAND. EXCEPT AS MAY BE NOTED, LOTS DESCRIBED ON THIS PLAN MAY BE LEASED OR SOLD.

BECAUSE OF THE CIRCUMSTANCES INVOLVED WITH THIS LAND DIVISION, A SUBDIVISION REVIEW HAS NOT BEEN CONDUCTED BY THE COMMISSION. THEREFORE, NO DETERMINATION HAS BEEN MADE FOR ANY OF THE LOTS DESCRIBED HEREON AS TO THEIR SUITABILITY FOR BUILDING OR DEVELOPMENT PURPOSES. BUILDING ON OR THE DEVELOPMENT OF ANY OF THE LOTS HEREON DESCRIBED IS SUBJECT TO THE REQUIREMENTS OF THE MAINE LAND USE PLANNING COMMISSION. FOR MORE INFORMATION, CONTACT THE LAND USE PLANNING COMMISSION.

FILE REFERENCE: AR 15-1

By: William J. Galbraith for Director, Land Use Planning Commission DATE: 7/28/15

NOTES

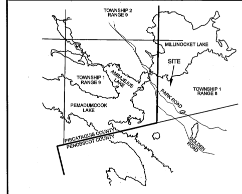
(1) Documents referenced on this plan are recorded in the Penobscot County Registry of Deeds unless otherwise noted.

(2) Bearings are oriented to Grid North of the Maine State Coordinate System, East Zone, NAD 83.

(3) Distances shown on this plan are grid distances referenced to the Maine State coordinate system, East Zone, NAD 83.

(4) Coordinates cited hereon are referenced to the Maine State Coordinate System, East Zone, NAD 83.

(5) Reference is made to a plan by Plisga & Day Land Surveyors titled "Survey Plan of a portion of the property of Katahdin Timberlands LLC and Katahdin Forest Management LLC", dated December 14, 2005 in Plan File 2005 - 153.



SITE LOCATION MAP– NOT TO SCALE

ADAM N. ROBINSON NO. 2361

Survey Standard:

These plans were prepared from information obtained by a survey conforming substantially to the requirements of Technical Standards contained in Chapter 90, Part 2, of the Rules of the Board of Licensure for Professional Land Surveyors, effective April 1, 2001.

Adam N. Robinson, Maine Licensed Professional Land Surveyor No. 2361

GRID NORTH MSCS EAST ZONE NAD 83
MAGNETIC 17°48'

LEGEND:

- Ø UTILITY POLE
- + GUY/ANCHOR
- PROPERTY LINE
- OVERHEAD WIRES
- GRAVEL ROAD/DRIVEWAY
- ◉ LOCATION OF ACCESS POINTS

2015-45

SHEET TITLE
Road Plan and Index

Township 1 Range 9 WELS
Piscataquis County, Maine

Township 1 Range 8 WELS
Penobscot County, Maine

Record Owners:

Katahdin Timberlands LLC,
4 Hill Street, Millinocket, Maine

Katahdin Forest Management LLC,
4 Hill Street, Millinocket, Maine

Twin Pine Camps, LLC,
T1R8, Penobscot County, Maine

Hammond Ridge Development Company, LLC,
T1R8, Penobscot County, Maine

PLISGA & DAY
LAND SURVEYORS
72 MAIN STREET
BANGOR, ME 04401
(207) 947-0019

DWG: 05237
DATE: July 15, 2015
SCALE: 1"=500'
SHEET: 1 OF 8

QUITCLAIM DEED WITH COVENANT

DLN: _____

HAMMOND RIDGE DEVELOPMENT COMPANY, LLC, a Maine limited liability company with a principal place of business in Millinocket, Maine, for consideration paid, grants to **TWIN PINE CAMPS, LLC**, a Maine limited liability company with a principal place of business in Millinocket, Maine, with a mailing address of P.O. Box 669, Millinocket, ME 04493, with quitclaim covenant, the land, together with any fixtures and improvements thereon, in **T1R8 WELS**, Penobscot County, Maine, described as follows:

PARCEL ONE (EVENT CENTER): A certain lot or parcel of land with the improvements thereon, situate on the northerly side of Hammond Ridge, so called, and southerly of Millinocket Lake, in Township 1, Range 8 WELS, County of Penobscot, State of Maine, being more particularly described as follows:

Beginning at a point located N 14º 14' 56" W, a tie distance of 5601.74 feet from an iron rod set in 2005 at the most southerly corner of lands now or formerly of Hammond Ridge Development Company, LLC as described in a deed from Katahdin Timberlands LLC and Katahdin Forest Management, LLC dated December 28, 2005 recorded in Volume 10256, Page 1, said point of beginning having coordinates N: 747,848.79 usft E: 906,234.87 usft;

Thence N 34º 47' 54" W, a distance of 673.02 feet to a point;

Thence N 61º 33' 24" E, a distance of 456.08 feet to a point on the westerly sideline of a 50 foot wide easement;

Thence continuing N 61º 33' 24" E, a distance of 88.49 feet to a point on the easterly sideline of said easement;

Thence continuing N 61º 33' 24" E, a distance of 43.87 feet to appoint;

Thence S 34º 47' 54" E, a distance of 673.02 feet to a point;

Thence S 61º 33' 24" W, a distance of 307.90 feet to a point on the easterly sideline of said easement;

Thence continuing S 61º 33' 24" W, a distance of 98.54 feet to a point on the westerly sideline of said easement;

Thence continuing S 61º 33' 24" W, a distance of 182.00 feet to the point of beginning.

Containing 9.04 acres

TOGETHER WITH a 50 foot wide easement for all purposes including utilities described as follows:

Beginning on the easterly sideline of the State Park Road at Point BC1 as depicted on the Road Plan and Index, Township 1 Range 9 WELS, Township 1 Range 8 WELS, Sheet 1 of 8 dated July 15, 2015 recorded in the Penobscot County Registry of Deeds in Map File 2015-45 and in the Piscataquis County Registry of Deeds in Map File 2015-17;

Thence easterly on Black Cat Road to Points BC2, BC3, BC4, and BC5;

Thence southeasterly on Black Cat Road Extension to Point BC7;

Thence southerly on Ktaadn Road to Points BC8 and BC9;

Thence southwesterly to Point BC10 on the easterly sideline of said State Park Road.

TOGETHER WITH a 50 foot wide easement for all purposes including utilities described as follows:

Beginning at Point BC7 in Black Cat Road Extension as depicted on the Road Plan and Index, Township 1 Range 9 WELS, Township 1 Range 8 WELS, Sheet 1 of 8 dated July 15, 2015 recorded in the Penobscot County Registry of Deeds in Map File 2015-45 and in the Piscataquis County Registry of Deeds in Map File 2015-17;

Thence easterly on said Black Cat Road Extension as depicted on said plan, to Point BC6;

Thence continuing on the center of said Black Cat Road Extension as depicted on said plan, by the following courses and distances:

N 83° 04' 10" E, a distance of 204.70 feet to a point;

Thence N 69° 17' 49" E, a distance of 287.25 feet to a point;

Thence N 59° 50' 41" E, a distance of 257.09 feet to a point;

Thence N 71° 40' 22" E, a distance of 353.32 feet to a point;

Thence N 60° 48’ 49" E, a distance of 316.82 feet to a point;

Thence N 54° 21' 00" E, a distance of 82.86 feet to a point having coordinates N: 749,210.49 usft E: 905,358.43 usft.

TOGETHER WITH a 66 foot wide easement for all purposes including utilities described as follows:

Commencing at the terminus of the last described easement at a point having coordinates N: 749,210.49 usft E: 905,358.43 usft;

Thence S 35º 39’ 00” E, a distance of 24.53 feet to a point on the southerly sideline of said Black Cat Road Extension and the point of beginning of said 66 foot wide easement;

Thence S 63° 03' 13" E, a distance of 65.26 feet to a point of curvature;

Thence in an easterly direction, along a curve to the left with a radius of 92.00 feet, an arc distance of 85.68 feet to a point, said curve having a chord bearing S 89° 44' 00" E, a chord distance of 82.62 feet;

Thence N 63° 35' 16" E, a distance of 420.49 feet to a point;

Thence N 59° 45' 29" E, a distance of 291.55 feet to a point of curvature;

Thence in a northeasterly direction, along a curve to the right with a radius of 642.09 feet, an arc distance of 144.99 feet to a point of compound curvature, said curve having a chord bearing N 66° 13' 37" E, a chord distance of 144.69 feet;

Thence in an easterly direction, along a compound curve to the right with a radius of 301.43 feet, an arc distance of 233.65 feet to a point of compound curvature, said curve having a chord bearing S 85° 05' 50" E, a chord distance of 227.85 feet;

Thence in a southeasterly direction, along a compound curve to the right with a radius of 243.00 feet, an arc distance of 185.56 feet to a point of tangency, said curve having a chord bearing S 41° 00' 55" E, a chord distance of 181.08 feet;

Thence S 19° 08' 23" E, a distance of 30.07 feet to a point of curvature;

Thence in a southerly direction, along a curve to the right with a radius of 283.00 feet, an arc distance of 223.89 feet to a point of tangency, said curve having a chord bearing S 03° 31' 29" W, a chord distance of 218.10 feet;

Thence S 26° 11' 21" W, a distance of 124.94 feet to a point;

Thence S 37° 20' 30" W, a distance of 184.99 feet to a point;

Thence S 30° 35' 49" W, a distance of 172.85 feet to a point of curvature;

Thence in a southeasterly direction, along a curve to the left with a radius of 267.00 feet, an arc distance of 80.49 feet to a point of tangency, said curve having a chord bearing S 21° 57' 40" W, a chord distance of 80.18 feet;

Thence S 13° 19' 31" W, a distance of 7.65 feet to a point on the northerly line of the parcel described above;

Thence S 61º 33’ 24” W by and along the northerly line of said parcel described above, a distance of 88.49 feet to a point;

Thence N 13° 19' 31" E, a distance of 66.60 feet to a point of curvature;

Thence in a northerly direction, along a curve to the right with a radius of 333.00 feet, an arc distance of 100.38 feet to a point of tangency, said curve having a chord bearing N 21° 57' 40" E, a chord distance of 100.00 feet;

Thence N 30° 35' 49" E, a distance of 176.74 feet to a point;

Thence N 37° 20' 30" E, a distance of 182.43 feet to a point;

Thence N 26° 11' 21" E, a distance of 118.50 feet to a point of curvature;

Thence in a northerly direction, along a curve to the left with a radius of 217.00 feet, an arc distance of 171.68 feet to a point of tangency, said curve having a chord bearing N 03° 31' 29" E, a chord distance of 167.23 feet;

Thence N 19° 08' 23" W, a distance of 30.07 feet to a point of curvature;

Thence in a northwesterly direction, along a curve to the left with a radius of 177.00 feet, an arc distance of 135.16 feet to a point of compound curvature, said curve having a chord bearing N 41° 00' 55" W, a chord distance of 131.90 feet;

Thence in a westerly direction, along a compound curve to the left with a radius of 235.43 feet, an arc distance of 182.49 feet to a point of compound curvature, said curve having a chord bearing N 85° 05' 50" W, a chord distance of 177.96 feet;

Thence in a southwesterly direction, along a compound curve to the left with a radius of 576.09 feet, an arc distance of 130.09 feet to a point of tangency, said curve having a chord bearing S 66° 13' 37" W, a chord distance of 129.81 feet;

Thence S 59° 45' 29" W, a distance of 293.76 feet to a point;

Thence S 63° 35' 16" W, a distance of 422.69 feet to a point of curvature;

Thence in a westerly direction, along a curve to the right with a radius of 158.00 feet, an arc distance of 147.15 feet to a point of tangency, said curve having a chord bearing N 89° 44' 00" W, a chord distance of 141.89 feet;

Thence N 63° 03' 13" W, a distance of 103.16 feet to appoint on the southerly sideline of said Black Cat Road Extension;

Thence N 59º 00’ 09” E by and along the southerly sideline of said Black Cat Road Extension, a distance of 58.82 feet to a point;

Thence N 49º 25’ 13” E by and along the southerly sideline of said Black Cat Road Extension, a distance of 17.48 feet to the point of beginning.

SUBJECT TO a 66 foot wide easement for all purposes including utilities, described as follows:

Beginning at a point on the southerly line of the parcel described above, located N 61º 33’ 24” E, a distance of 182.00 feet from the point of beginning of said parcel described above;

Thence in a northerly direction along a curve to the right with a radius of 183.00 feet, an arc distance of 89.35 feet to a point of tangency, said curve having a chord bearing N 56° 21' 31" W, a chord distance of 88.47 feet;

Thence N 42° 22' 13" W, a distance of 82.82 feet to a point of curvature;

Thence in a northerly direction, along a curve to the right with a radius of 333.00 feet, an arc distance of 323.70 feet to a point of tangency, said curve having a chord bearing N 14° 31' 21" W, a chord distance of 311.11 feet;;

Thence N 13° 19' 31" E, a distance of 279.36 feet to a point on the northerly line of said parcel described above;

Thence N 61° 33' 24" E by and along the northerly line of said parcel described above, a distance of 88.49 feet to a point;

Thence S 13° 19' 31" W, a distance of 338.31 feet to a point of curvature;

Thence in a southerly direction, along a curve to the left with a radius of 267.00 feet, an arc distance of 259.54 feet to a point of tangency, said curve having a chord bearing S 14° 31' 21" E, a chord distance of 249.45 feet;

Thence S 42° 22' 13" E, a distance of 82.82 feet to a point of curvature;

Thence in a southerly direction, along a curve to the left with a radius of 117.00 feet, an arc distance of 58.36 feet to a point of compound curvature, said curve having a chord bearing S 56° 39' 38" E, a chord distance of 57.76 feet;

Thence in a southeasterly direction, along a curve to the left with a radius of 317.39 feet, an arc distance of 65.11 feet to a point on the southerly line of said parcel described above, said curve having a chord bearing S 76° 49' 39" E, a chord distance of 65.00 feet;

Thence S 61° 33' 24" W by and along the southerly line of said parcel described above, a distance of 98.54 feet to the point of beginning.

Being a portion of the right of way depicted on the Road Plan and Index, Township 1 Range 9 WELS, Township 1 Range 8 WELS, Sheet 1 of 8 dated July 15, 2015 recorded in the Penobscot County Registry of Deeds in Map File 2015-45 and in the Piscataquis County Registry of Deeds in Map File 2015-17.

Bearings are oriented to Grid North of the Maine State Coordinate System, East Zone NAD83.

Documents are recorded in the Penobscot County Registry of Deeds unless otherwise noted.

PARCEL TWO (ACTIVITY CENTER): A certain lot or parcel of land with the improvements thereon, situate on the northerly side of Hammond Ridge, so called, and southerly of Millinocket Lake, in Township 1, Range 8 WELS, County of Penobscot, State of Maine, being more particularly described as follows:

Beginning at a point located N 42º 49' 32" W, a tie distance of 5731.39 feet from an iron rod set in 2005 at the most southerly corner of lands now or formerly of Hammond Ridge Development Company, LLC as described in a deed from Katahdin Timberlands LLC and Katahdin Forest Management, LLC dated December 28, 2005 recorded in Volume 10256, Page 1, said point of beginning having coordinates N: 746,622.94 usft E: 903,717.63 usft;

Thence N 68º 20' 33" W, a distance of 865.73 feet to a point;

Thence N 4º 27' 07" E, a distance of 218.74 feet to a point;

Thence N 45º 17' 50" W, a distance of 104.84 feet to a point;

Thence N 44º 27' 53" E, a distance of 124.46 feet to a point;

Thence N 4º 27' 07" E, a distance of 434.56 feet to a point;

Thence S 86º 43' 16" E, a distance of 385.29 feet to a point on the westerly sideline of a 50 foot wide right of way labeled Ktaadn Road on said plan referenced above;

Thence in a southerly direction by and along the westerly sideline of said right of way, along a non-tangent curve to the left with a radius of 1025.00 feet, an arc distance of 34.33 feet to a point of tangency, said curve having a chord bearing S 9º 33' 49" W, a chord distance of 34.33 feet;

Thence S 8º 36' 15" W by and along the westerly sideline of said right of way, a distance of 140.07 feet to a point;

Thence S 86º 43' 16" E, a distance of 50.22 feet to a point on the easterly sideline of said right of way;

Thence continuing S 86º 43' 16" E, a distance of 321.74 feet to a point;
Thence S 0º 44' 33" E, a distance of 796.80 feet to a point on the easterly sideline of said right of way;

Thence continuing S 0º 44' 33" E, a distance of 59.24 feet to a point on the westerly sideline of said right of way;

Thence continuing S 0º 44' 33" E, a distance of 61.79 feet to the point of beginning.

Containing 15.58 acres.

TOGETHER WITH a 50 foot wide easement for all purposes including utilities described as follows:

Beginning on the easterly sideline of the State Park Road at Point BC1 as depicted on the Road Plan and Index, Township 1 Range 9 WELS, Township 1 Range 8 WELS, Sheet 1 of 8 dated July 15, 2015 recorded in the Penobscot County Registry of Deeds in Map File 2015-45 and in the Piscataquis County Registry of Deeds in Map File 2015-17;

Thence easterly on Black Cat Road to Points BC2, BC3, BC4, and BC5;

Thence southeasterly on Black Cat Road Extension to Point BC7;

Thence southerly on Ktaadn Road to Points BC8 and BC9;

Thence southwesterly to Point BC10 on the easterly sideline of said State Park Road.

SUBJECT TO a 50 foot wide easement for all purposes including utilities, described as follows:

Beginning at a point on the easterly line of the parcel described above located N 0º 44' 33" W, a distance of 61.79 feet from the point of beginning of said parcel described above;

Thence N 58° 18' 43" W, a distance of 127.66 feet to a point of curvature;

Thence in a northerly direction, along a curve to the right with a radius of 275.00 feet, an arc distance of 175.89 feet to a point of tangency, said curve having a chord bearing N 39° 59' 21" W, a chord distance of 172.90 feet;

Thence N 21° 39' 59" W, a distance of 337.69 feet to a point of curvature;

Thence in a northerly direction, along a curve to the right with a radius of 675.00 feet, an arc distance of 356.62 feet to a point of tangency, said curve having a chord bearing N 06° 31' 52" W, a chord distance of 352.48 feet;

Thence N 08° 36' 15" E, a distance of 13.84 feet to a point on the northerly line of the parcel described above;

Thence S 86° 43' 16" E by and along the northerly line of said parcel described above, a distance of 50.22 feet to a point;

Thence S 08° 36' 15" W, a distance of 18.50 feet to a point of curvature;

Thence in a southerly direction, along a curve to the left with a radius of 625.00 feet, an arc distance of 330.20 feet to a point of tangency, said curve having a chord bearing S 06° 31' 52" E, a chord distance of 326.37 feet;

Thence S 21° 39' 59" E, a distance of 337.69 feet to a point of curvature;

Thence in a southerly direction, along a curve to the left with a radius of 225.00 feet, an arc distance of 143.91 feet to a point of tangency, said curve having a chord bearing S 39° 59' 21" E, a chord distance of 141.47 feet;

Thence S 58° 18' 43" E, a distance of 95.90 feet to a point on the easterly line of said parcel described above;

Thence S 00° 44' 33" E by and along the easterly line of said parcel described above, a distance of 59.24 feet to the point of beginning.

Being a portion of said easement depicted on the Road Plan and Index, Township 1 Range 9 WELS, Township 1 Range 8 WELS, Sheet 1 of 8 dated July 15, 2015 recorded in the Penobscot County Registry of Deeds in Map File 2015-45 and in the Piscataquis County Registry of Deeds in Map File 2015-17.

Bearings are oriented to Grid North of the Maine State Coordinate System, East Zone NAD83.

Documents are recorded in the Penobscot County Registry of Deeds unless otherwise noted.

ENCUMBRANCES: Parcel One and Parcel Two are conveyed subject to the possible effect of the following:

1. Easements granted to New England Telephone and Telegraph Company and Bangor Hydro-Electric Company that may affect the Baxter Park Road, so-called, which borders the premises, by instruments dated and recorded as follows: dated December 22, 1953 and recorded in Book 308, Page 467; June 25, 1980 and recorded in Book 500, Page 180.

2. Easements granted to Bangor Hydro-Electric Company that may affect the Baxter Parks Road, so-called, which borders the premises, by instruments dated and recorded as follows: October 2, 1973 and recorded in Book 414, Page 538; January 7, 1975 and recorded in Book 427, Page 669; June 15, 1979 and recorded in Book 485, Page 200

3. Rights granted to State of Maine by deed of Great Northern Paper Company by instrument dated May 24, 1972 and recorded in Book 403, Page 283 that may affect the Baxter Road, so-called.

4. Easement granted to State of Maine by Great Northern Nekoosa Corporation by instrument dated February 3, 1978 and recorded in Book 465, Page 485 as it affects the Baxter Park Road, so-called.

5. Easement from Great Northern Paper Company to Bangor Hydro Electric Company by instrument dated December 22, 1953 and recorded in Book 1426, Page 110.

6. Slope easements conveyed to the State of Maine by deed of Great Northern Nekoosa Corporation by instrument dated October 12, 1971 and recorded in Book 2329, Page 171.

7. Pole line easement from Great Northern Nekoosa Corporation to Bangor Hydro Electric Company by instrument dated January 7, 1987 and recorded in Book 5927, Page 53 benefitting land now or formerly of Mark and Lisa McVey.

8. Terms and conditions of the Millinocket Lake Storage Development, FERC Project No. 2458 as determined by the Federal Energy Regulatory Commission in a license issued to Great Northern Paper, Inc., dated October 22, 1996, as amended by the FERC Order dated February 12, 2002, revising Shoreline Management Plan and Approving Exhibit G Drawings.

9. The rights of Brascan Power New England, formerly known as Great Lakes Hydro America, LLC, and GNE, LLC, under its deed from Great Northern Paper, Inc., and Maine Timberlands Company, dated January 31, 2002, and recorded in Book 8063, Page 98 (Piscataquis County – Book 1366, Page 1), as amended by deeds recorded in Book 9214, Page 303 (Piscataquis County – 1535, Page 255), Book 9349, Page 1 (Piscataquis County – 1561, Page 1) and Book 9349, Page 156 (Piscataquis County – Book 1561, Page 10).

10. Mortgage Deed and Security Instrument from Hammond Ridge Development Company, LLC to Theodore S. Curtis, Jr., Trustee of the Ridge Investment Trust, dated December 20, 2005 and recorded in Book 10256, Page 80 (Piscataquis County – Book 1962, Page 238), as modified by a Modification of Mortgage dated December 28, 2021 and recorded in Book 16331, Page 187 (Piscataquis County – Book 2823, Page 324).

11. Easement from Hammond Ridge Development Company, LLC, Katahdin Timberlands LLC and Katahdin Forest Management, LLC to Jeffrey L. Hobbs and Madolin M. Hobbs, dated October 10, 2013 and recorded in Book 13368, Page 242 (Piscataquis County – Book 2267, Page; 24).

12. Mortgage Deed and Security Instrument from Hammond Ridge Development Company, LLC to Theodore S. Curtis, Jr., Trustee of the Ridge Investment Trust, dated December 19, 2013 and recorded in Book 13426, Page 36 (Piscataquis County – Book 2824, Page 199), as modified by a Modification of Mortgage dated December 28, 2021 and recorded in Book 16331, Page 189 (Piscataquis County – Book 2823, Page 326).

13. Easements, rights, restrictions, terms and conditions of the Millinocket Lake (West) Lot Owners Association Declarations of Covenants, Conditions and Restrictions dated July 28, 2015 and recorded in Book 13915, Page 288 (Piscataquis County – Book 2381, Page 245).

14. Easement Deed from Hammond Ridge Development Company, LLC to Brian C. Atwood, dated August 13, 2015 and recorded in Book 13935, Page 21.

15. Easement Deed from Hammond Ridge Development Company, LLC to Kenneth A. Hansen and Karen F. Hansen, dated August 5, 2015 and recorded in Book 13935, Page 69.

16. Easement Deed from Hammond Ridge Development Company, LLC to Raymond K. Woodworth and Muriel C. Woodworth, dated May 18, 2016 and recorded in Book 14172, Page 131.

17. Memorandum of Lease from Hammond Ridge Development Company, LLC as the Landlord and New Cingular Wireless PCS, LLC, dated March 10, 2020 and recorded in Book 15516, Page 1, being affected by an Assignment of Lease and Bill of Sale from New Cingular Wireless PCS, LLC to Diamond Towers V LLC, dated May 8, 2020 and recorded in Book 15539, Page 207, as further being affected by an Assignment of Agreement from Diamond Towers V LLC to Diamond Towers IV LLC, dated October 20, 2020 and recorded in Book 15778, Page 270, as further being affected by a Corrective Memorandum of Lease Agreement between Hammond Ridge Development Company, LLC, Landlord, Diamond Towers IV LLC, Tenant, dated August 25, 2020 and recorded in Book 15886, Page 208, and as further being affected by the SNDA between The Ridge Development Trust, Mortgagee, and Hammond Ridge Development Company, LLC, Landlord, and New Cingular Wireless PCS, LLC, dated April 7, 2020 and recorded in Book 15516, Page 238.

18. Utility Easement from Hammond Ridge Development Company, LLC to Versant Power dated October 22, 2020 and recorded in Book 15746, Page 42.

Documents are recorded in the Penobscot County Registry of Deeds unless otherwise noted.

IN WITNESS WHEREOF, Hammond Ridge Development Company, LLC has caused this instrument to be signed and sealed in its name by Matthew A. Polstein, its sole Manager, hereunto duly authorized, this ____ day of May, 2022.

Hammond Ridge Development Company, LLC

By: _____
Matthew A. Polstein, Manager

STATE OF MAINE

_____ County May ____, 2022

Personally appeared the above named Matthew A. Polstein, Manager of Hammond Ridge Development Company, LLC, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said company.

_____
Notary Public / Maine Attorney-at-Law

_____
Print or type name as signed

Bk 15516 Pg1 #12009
05-05-2020 @ 12:27p

MEMORANDUM OF LEASE

Prepared by:
Frank Kelley
SAI Communications
12 Industrial Way
Salem, NH 03079

Return to:

Karen Bierfeldt-Held
Phillips Lytle LLP
One Canalside
125 Main Street
Buffalo, NY 14203

Re: Cell Site #:ME1044;
Cell Site Name: Millinocket (ME)
Fixed Asset #:14406145
State: Maine
County:Penobscot

MEMORANDUM OF LEASE

This Memorandum of Lease is entered into on this 10th day of March, 2020, by and between Hammond Ridge Development Company LLC, a Maine Limited Liability Company, having a mailing address of P.O. Box 669, Millinocket, ME 04462 (hereinafter referred to as "**Landlord**") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 1025 Lenox Park Blvd. NE, 3rd Floor, Atlanta, GA 30319 (hereinafter referred to as "**Tenant**").

1. Landlord and Tenant entered into a certain Option and Lease Agreement ("**Agreement**") on the 10th day of March, 2020, for the purpose of installing, operating and maintaining a communications facility and other improvements. All of the foregoing is set forth in the Agreement.

2. The initial lease term will be five (5) years commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of its option, with four (4) successive five (5) year options to renew.

3. The portion of the land being leased to Tenant and associated easements are described in **Exhibit 1** annexed hereto.

4. This Memorandum of Lease is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the Agreement, all of which are hereby ratified and affirmed. In the event of a conflict between the provisions of this Memorandum of Lease and the provisions of the Agreement, the provisions of the Agreement shall control. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Agreement.

IN WITNESS WHEREOF, the parties have executed this Memorandum of Lease as of the day and year first above written.

"LANDLORD"

Hammond Ridge Development Company LLC

By: _____
Print Name: Mathew Polstein
Its: Manager
Date: 3/10/2020

"TENANT"

New Cingular Wireless PCS, LLC,
a Delaware limited liability company
By: AT&T Mobility Corporation
Its: Manager

By: _____
Print Name: Jessica Rincon
Its: Area Manager
Date: 3-6-2020

[ACKNOWLEDGMENTS APPEAR ON THE NEXT PAGE]

TENANT ACKNOWLEDGMENT

STATE OF Massachusetts)
COUNTY OF Middlesex) ss.

On this 6th day of March, 2020, before me personally appeared Jessica R. Schorr (name of person acknowledging) to me known to be the person who executed the foregoing instrument, and he (she) thereupon duly acknowledged to me that he (she) executed the same to be his (her) free act and deed.

(Notary signs here)

Kevin L. Mason
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
January 1, 2027

LANDLORD ACKNOWLEDGMENT

STATE OF Maine)
COUNTY OF Penobscot) ss.

On this 10 day of March, 2020, before me personally appeared _____ (name of person acknowledging) to me known to be the person who executed the foregoing instrument, and he (she) thereupon duly acknowledged to me that he (she) executed the same to be his (her) free act and deed.

(Notary signs here)

JANET L. LANE
Notary Public, State of Maine
My Commission Expires February 11, 2023

SEAL

EXHIBIT 1

DESCRIPTION OF PREMISES

to the Memorandum of Lease dated 3/10, 2020, by and between Hammond Ridge Development Company LLC, a Maine Limited Liability Company, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

The Premises are described and/or depicted as follows:

Bk 10256 Ps1 #49873
12-29-2005 @ 08:21a

QUIT-CLAIM DEED WITH COVENANT

KATAHDIN TIMBERLANDS LLC, a Delaware limited liability company, with a mailing address of One Katahdin Avenue, Millinocket, ME, 04462 and KATAHDIN FOREST MANAGEMENT, LLC, a Delaware limited liability company, with a mailing address of One Katahdin Avenue, Millinocket, ME, 04462, hereinafter "Grantor", for consideration paid, grants to HAMMOND RIDGE DEVELOPMENT COMPANY, LLC, a Maine limited liability company whose mailing address is 1221 Medway Road, Millinocket, ME 04462, hereinafter "Grantee", with quit-claim covenants, certain lots or parcels of land, together with any of Grantor's improvements thereon and together with all rights and easements appurtenant thereto as specified herein, situated in Township 1 Range 8, WELS, Penobscot County, Maine, and Township 1 Range 9, WELS, Piscataquis County, Maine, bounded and described as follows:

SEE ATTACHED SCHEDULE A

Being a portion of those premises conveyed to the Grantors herein by the following deeds:

1-Maine Timberlands Company to Katahdin Timberlands, LLC, dated April 29, 2003, and recorded in the Penobscot County Registry of Deeds in Book 8702 Page 181; and 2-Katahdin Timberlands, LLC, et al to Katahdin Forest Management, LLC, dated February 26, 2004, and recorded in the Penobscot County Registry of Deeds in Book 9215 Page 177.

NOT AN OFFICIAL COPY

This conveyance is subject to all conditions, easements, restrictions and reservations of record including the rights of Brascan Power New England, formerly known as Great Lakes Hydro America, LLC, and GNE, LLC, under its deed from Great Northern Paper, Inc., and Maine Timberlands Company dated January 31, 2002, and recorded in the Penobscot County Registry of Deeds in Book 8063 Page 98 (Piscataquis County – Book 1366 Page 1) as amended by deeds recorded in Book 9214, Page 303 (Piscataquis County – Book 1535 Page 255), Book 9349, Page 1 (Piscataquis County – Book 1561 Page 1) and Book 9349 Page 156 (Piscataquis County – Book 1561 Page 10).

This deed shall be construed according to the laws of the State of Maine.

Grantee agrees that the quitclaim covenants of Katahdin Timberlands, LLC, are limited to Parcels One, Two and Three and the quitclaim covenants of Katahdin Forest Management, LLC, are limited to Parcel Four.

Two originals of this deed have been executed for simultaneous recording in the Penobscot and Piscataquis County Registry of Deeds but the two originals shall constitute one and the same instrument.

IN WITNESS WHEREOF, Katahdin Timberlands, LLC, and Katahdin Forest Management, LLC, have caused this instrument to be executed by Marcia A. McKeague, President of each limited liability company, and hereunto duly authorized this 28th day of December, 2005.

KATAHDIN TIMBERLANDS LLC

By: Marcia A. McKeague
Its: President

KATAHDIN FOREST MANAGEMENT LLC

By: Marcia A. McKeague
Its: President

STATE OF MAINE
PENOBSCOT, ss. December 28, 2005

Then personally appeared the above named Marcia A. McKeague, President of Katahdin Timberlands, LLC, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said limited liability company.

Before me,

Notary Public
Print Name: Dean A. Beaupré
Attorney at Law

STATE OF MAINE
PENOBSCOT, ss. December 28, 2005

Then personally appeared the above named Marcia A. McKeague, President of Katahdin Forest Management LLC, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said limited liability company.

Before me,

Notary Public Attorney at Law
Print Name:
Dean A. Beaupré

Susan F. Bulay, Register
Penobscot County, Maine

SECTION 3

FINANCIAL CAPACITY

Katahdin Trust Company Letter

SECTION 3

FINANCIAL CAPACITY

Estimated Costs: The project is estimated to cost $3,000,000 for the construction of the roads and associated utilities.

Financing: An attached letter dated October 25, 2024, from Katahdin Trust Company indicates an excellent relationship with Matthew Polstein and states that "Katahdin Trust Company would be interested in providing the financing for the project, subject to receipt and satisfactory review of a complete loan application, formal approval by the Bank's loan committee and such terms and conditions as the Bank may require."

Certificate of Good Standing: Please refer to the attached Certificate of Good Standing indicating Hammond Ridge Development Company, LLC, meets all legal requirements to operate.

Katahdin Trust Company

Community Banking at its Best!

October 25, 2024

Land Use Planning Commission
191 Main Street
East Millinocket, ME 04430

RE: Hammond Ridge Development Company, LLC

To Whom It May Concern,

We have reviewed Matt Polstein's plan to further develop Hammond Ridge, as described in the 5-30-2024 Master Plan detailing the 51 lot sub-division. Matt has outlined Phase I of the development plan regarding the infrastructure improvements required to implement following phased development with an estimated cost of $3,000,000 in construction and permanent financing. We have had an excellent account relationship with Matt since December 2013, most recently providing financing for the successful completion of Twin Pine Camps, LLC 9,141 sq. ft. Activity Center and 7,413 sq. ft. Event Center which serve as important destination hubs for the greater Hammond Ridge Development. Our experience with this relationship leads us to believe Matt has the financial and technical capacity to develop a project of the general type and magnitude described to us.

Although this letter does not constitute a formal commitment to lend, based on the foregoing, Katahdin Trust Company would be interested in providing the financing for the project, subject to receipt and satisfactory review of a complete loan application, formal approval by the Bank's loan committee and such terms and conditions as the Bank may require.

This letter is given solely for your information in connection with your review of the project for regulatory purposes and reliance by any other party is not intended.

Sincerely,

Justin K. Jamison, Senior Vice President Commercial Services

Katahdin Trust Company

52 Springer Drive · Bangor, ME 04401 · Telephone (207) 941-6762 (877) 525-4401 · Fax (207) 942-6036

SECTION 4

TECHNICAL ABILITY

Certificate of Good Standing
Resumes

SECTION 4

TECHNICAL ABILITY

Hammond Ridge Development Company, LLC has assembled a team of consultants to assist in the design and construction of the proposed development. The site development design and civil engineering have been accomplished by Haley Ward, Inc. formerly known as CES, Inc. (CES). Aceto Landscape Architects has supported in the site and building design. Wetland delineation, soil explorations, and septic system designs were completed by David Moyse, CSS, LSE, of Moyse Environmental Services, Inc., and Sash Engineering.

The majority of construction will be completed or managed by Matthew Polstein, the Applicant. He has extensive knowledge and experience in the construction sector. Project examples include the construction and project management of 10 guest homes and rafting base in Caratunk, Maine, River Drivers Restaurant in Millinocket, Maine, a 38-unit campground with bath house and associated roads in Millinocket, and renovation and expansion of the existing Twin Pine Camps and River Drivers Restaurant in T1 R8 WELS. Please refer to the Certificate of Good Standing for the Applicant at the end of this narrative.

Haley Ward, Inc. (Haley Ward) is a Maine based company with over 40 years of design and permitting experience. Haley Ward is responsible for multi-disciplinary design and permitting for this project including, Conceptual Engineering Design, Final Site Design, Local and State Permitting and limited Construction Administration Services. Haley Ward has prepared numerous Site Location of Development Act Permit Applications, Amendments, and Modifications for public and private clients in the past. Our website is HaleyWard.com.

Included are Professional Resumes for the Haley Ward Design Team members.

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Thu May 16 2024 09:54:20. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
HAMMOND RIDGE DEVELOPMENT COMPANY, LLC	20061689DC	LIMITED LIABILITY COMPANY	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
12/12/2005	N/A	MAINE

Other Names	(A=Assumed ; F=Former)
KATAHDIN RESORT	A
KTAADN RESORT	A

Principal Home Office Address

Physical	Mailing
30 TWIN PINE LANE, T.1, R.8 WELS, ME 04462	POST OFFICE BOX 669 MILLINOCKET, ME 04462

Clerk/Registered Agent

Physical	Mailing
P. ANDREW HAMILTON 80 EXCHANGE STREET BANGOR, ME 04401	P. ANDREW HAMILTON PO BOX 1210 BANGOR, ME 04402

HALEY WARD

Lucy Feeney

Civil Engineer

lfeeney@haleyward.com | 207.989.4824

As a Civil Engineer, Lucy has a wide variety of experience in site layout and design, stormwater management, roadway design, and utility infrastructure design. Lucy has experience in preparing traffic control plans for various utility companies. Lucy is experienced in the preparation of local, state and federal permit applications including site plan applications and Site Location of Development (SLODA), and Stormwater Permit Applications.

PROFESSIONAL HISTORY

2019 – Present
Haley Ward, Inc.
Civil Engineer

2018 – 2019
CES, Inc.
Engineering Intern

CORE EXPERTISE:

Site Development

Traffic Control and Roadway Design

Infrastructure Design

Stormwater Management

Construction Inspection and Administration

Local, State, and Federal Permitting

EDUCATION:

B.S. (2019) Civil and Environmental Engineering, University of Maine, Orono

PROJECT EXPERIENCE

Washington Luxe | Ellsworth, Maine
Lucy assisted in the site design, stormwater Best Management Practices (BMPs), and erosion control measures required for the City of Ellsworth's Site Plan Review approval for two, 12-unit apartment buildings.

Jackson Lab | Ellsworth, Maine
Lucy provided periodic inspection services for concrete placements. She was responsible for inspections of the reinforcement, and concrete placement. Following each visit, Lucy would prepare construction reports that would be sent to the Project Team.

Foxcroft Academy Field House | Dover-Foxcroft, Maine
Lucy completed the site design, including layout, grading, utility placements, and stormwater management for a sports field house for Foxcroft Academy. The project included the redevelopment of an existing soccer field to an 87,000 square foot field house with various site restraints.

Sunset Drive Drainage Improvements | Veazie, Maine
Lucy provided daily inspection during the removal and replacement of storm drain system for Sunset Drive. Tasks included documentation of daily construction activities and coordination between the contractor and project engineer to resolve issues.

124 Allen Avenue and 10 University Street | Portland, Maine
Lucy completed the site grading, layout, and stormwater BMP design required to meet the City's Minor Site Development Standards for two residential lots in Portland. The sites included lots that were between 5,000 and 7,000 square feet that each included the implementation of a raingarden or soil filter for treatment of surface runoff.

Solar Developer | Maine
Lucy prepared Maine Department of Environmental Projection (MDEP) and local permit applications for the development of dozens solar arrays in various locations in Maine. Many of the sites required full SLODA permit applications while others required a Stormwater Permit by Rule. Lucy was responsible for the Stormwater management design, which included HydroCAD modeling and BMP placement which was completed for each site as required by the MDEP.

Traffic Control Plans for Utilities | Various Locations in Maine
Lucy has prepared various Traffic Control Plans for proposed utility work around the State. Plans have been created to be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways along with meeting the Maine Department of Transportation's standards for plans that took place on State owned roads.

Eastport Municipal Airport Stormwater Improvements |Eastport, Maine
Lucy was responsible for the construction observation for the construction of eight bio-retention cells adjacent to the Eastport Municipal Airport. The cells were created in preparation of the reconstruction of the runway to meet the Maine Department of

Environmental Protection's (MDEP) Chapter 500: Stormwater Management. Lucy was also responsible for quantity estimates, daily reports/photo logs, and construction/inspection reports for the Federal Aviation Administration (FAA).

Eastport Municipal Airport Runway Reconstruction | Eastport, Maine
Lucy was the resident engineer for the reconstruction of the Eastport Municipal Airport. The project included the full removal and replacement of the following: pavement, subbase/base gravel, underdrain system, runway/taxiway lights, navigation systems, and pavement markings.

Services provided during construction observation, which included attending pre-construction and progress meeting; monitoring the construction activities to document compliance with the intent of the design; coordinating construction activity with the owner; coordinate material testing to support the suitability of construction materials; and maintain diaries and other project records to document the work; review/confirm quantities for pay requisition requests for monthly and final payments to contractor; attend final inspection; undertake post-field work as necessary in order to close out the project; provide "as-builts" for preparation of record drawings of the completed project.

Bangor Waterfront Concerts | Bangor, Maine
Lucy designed the stormwater treatment, and conveyance for the venue. The design included various methods to convey and treat runoff from the impervious areas to fit a design provided by the architect. Lucy was responsible for completing the SLODA Amendment, which included associated narratives and extensive HydroCAD modeling to meet the Maine DEP's Chapter 500: Stormwater Management.

Hawks Crossing Subdivision | Hermon, Maine
Lucy designed and permitted a residential subdivision layout and roadway design that meets regulatory requirements and enhances community infrastructure. Lucy's expertise includes thorough time management from concept to construction level drawings, ensuring adherence to budgetary constraints and timelines. Her ability to secure essential permits highlights her dedication to regulatory adherence and client fulfillment.

Visitor Contact Station | T3 R7 WELS, Maine
Lucy designed a gravel road and successfully navigated the permitting process through the LUPC (Land Use Planning Commission). This road was crucial for providing access to the proposed Visitor Contact Station situated within the Katahdin Woods and Waters National Monument. Lucy collaborated closely with architects to integrate the road's design seamlessly with parking and access requirements for the new building. Her comprehensive approach ensured all necessary permits were obtained, facilitating smooth project implementation.

Greenville Road Improvements | Greenville, Maine
Lucy has demonstrated her proficiency in construction oversight and administration by overseeing multiple road projects in Greenville, ME, including North Birch Street, High Street, and Shaw Street. She continues to collaborate with the Town, focusing on road improvement designs aligned with recommendations from a comprehensive road

evaluation report prepared by Haley Ward. Lucy's dedication ensures that infrastructure enhancements meet community needs and adhere to quality standards.

Camden Hills State Park | Camden, Maine
Lucy led the design of a new drinking water distribution system for Camden Hills State Park, encompassing the planning and implementation of storage tanks. Her comprehensive approach ensured the system met regulatory standards while enhancing water supply reliability for park facilities and visitors. Lucy's expertise in engineering resulted in a sustainable solution that supports the park's infrastructure needs effectively.

Ashland Workforce Housing | Ashland, Maine
Lucy designed road, water, and sewer infrastructure for a workforce housing development in Ashland, collaborating closely with local departments to ensure the design aligns with their standards.

Greenville Water Infrastructure Replacement | Greenville, Maine
Lucy has played a pivotal role in providing construction oversight and administration services for Maine Water Company, overseeing the installation of new drinking water mains and services across multiple roads in Greenville. Her expertise ensures the projects meet quality standards set by Maine Water, contributing to improved water infrastructure for the community. Lucy continues to collaborate with Maine Water Company, now managing new projects and serving as a technical resource to engineers in the field.

Tiny Home Development | Bangor, Maine
Lucy successfully completed the civil design for an affordable housing tiny home development in Bangor, ME. Her responsibilities encompassed the layout of the development, securing permits from the City, designing a water system compliant with Bangor Water District standards, and designing a sewer system to serve the development.

Village Way Subdivision | Ellsworth, Maine
Lucy led the design of the second phase of a residential subdivision in Ellsworth, encompassing road design, stormwater treatment design, water infrastructure design, and permitting through both the City and Maine DEP. Her expertise ensured that the subdivision's infrastructure met regulatory requirements. Lucy's thorough approach and attention to detail contributed to the successful implementation of critical infrastructure improvements, supporting the growth and development of the Ellsworth community.

Third Party Inspector for Subdivisions | Hermon, Maine
Lucy has provided third-party inspections for the Town of Hermon, overseeing multiple subdivision roads. Her responsibilities include ensuring contractors adhere to design specifications and comply with the Town's standards. Lucy leads project management while also conducting inspections, ensuring quality control and successful project outcomes. Her efforts contribute to infrastructure developments that align with regulatory requirements and meet the community's expectations in Hermon.

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

Chip Haskell, PE

Project Manager

chaskell@haleyward.com | 207.989.4824

Chip Haskell received his B.S. in Civil Engineering from the University of Maine in 2008. Since Chip joined us in 2006, he has worked as an Engineer on a variety of projects including road and site design and layout, storm drain and sanitary sewer systems, permitting, and pre and post hydrology studies. In 2013, Chip became a licensed professional engineer in the State of Maine. Since 2017, Chip has managed civil engineering projects ranging from small residential projects, to long term multi-million-dollar development projects.

PROFESSIONAL HISTORY

Haley Ward, Inc.

2017 - Present
Project Manager

2013 – 2017
Project Engineer

2006 – 2013
Engineering Technician

CORE EXPERTISE:
Project Management
Site Design
Hydrology
Site Permitting
Road Design

EDUCATION:
B.S. (2008) Civil Engineering, University of Maine, Orono

REGISTRATIONS:
Professional Engineer, State of Maine (#13314)

AFFILIATIONS:
American Society of Civil Engineers

Fusion Bangor Executive Committee, Treasurer

Fusion Bangor Steering Committee

PROJECT EXPERIENCE

Saddleback Solar Project | Dallas Plantation, Maine
Chip was responsible for managing the permitting and conceptual design of a solar development on the flanks of Saddleback Mountain. Given its location in unorganized territory, the permitting was jurisdictional to the Land Use Planning Commission (LUPC). We worked closely with the client's attorney to prepare and submit the application to the LUPC. This project also included the analysis of the existing gravel access road to determine its suitability for the necessary delivery vehicles.

Fairfield Landfill Solar Project | Fairfield, Maine
Chip was responsible for managing the site design and permitting of an approximately 4 MW solar development proposed for the top of a closed municipal landfill. Covering approximately 20 acres, this project included the design of roadways, ballast blocks, storm water treatment areas to meet Department of Environmental Protection (DEP) Town regulatory requirements. Permitting for this project included an amendment to the existing Solid Waste Permit, as well as Site Plan approval through the Town of Fairfield

Private Solar Clients | Maine
Chip has been responsible for managing the site design and permitting for over 30 separate solar developments for numerous clients throughout the State of Maine. The scope of these projects required close coordination with the Clients and agencies to navigate through Federal, State, and Municipal permitting processes. Following the permitting phase, construction level plans and specifications were completed as requested.

Private Residential Housing Developer | Ellsworth, Maine
Chip has collaborated with this developer for several years strategizing, planning, permitting, and designing several luxury apartment developments throughout the City. These projects all required State, Federal, and Municipal approval with close attention to stormwater and natural resource permitting.

Private Philanthropist | Northern, Maine
Chip has helped guide the client through the planning, permitting, design, and construction process for a multi-million-dollar infrastructure project in the north Maine woods. This project will become an attraction for visitors to the area and serve as the centerpiece for the property. This included permitting and design of many miles of roadway, trails, parking, and public areas, as well as the design of several structures and their supporting utility infrastructure.

Maine Waterside Trails Outdoor Education Facility | Grindstone, Maine
Chip was responsible for the design and permitting of an outdoor education facility set on approximately 3,500 acres and including approximately 12 miles of multi-use trails. This project included the design of roadways, trails, buildings, parking areas, utilities, storm water treatment areas to meet DEP and LUPC regulatory requirements for the permitting of the site.

Department of Defense Veterans and Emergency Management Training Site Design | T2R9, Maine
Chip was responsible for the planning and design of a training site. In the early stages, Chip led the design team which completed due diligence work onsite to determine the condition and extent of the infrastructure on the site. Following that phase, Chip was responsible for managing the design efforts for three box culvert stream crossings and approximately one mile of road.

Beach Street Improvements | Ogunquit, Maine
Chip was responsible for managing the design of improvements to Beach Street as well as to the circle at Main Beach. The design focused on improving vehicular and pedestrian safety, as well as the drainage along Beach Street. Throughout the project, Chip worked closely with the Town and its residents to ensure that all stakeholders had input in the design.

Hartt Transportation | Auburn, Maine
Assisting client with obtaining Site Location of Development Act (SLODA) amendments for future expansion needs as it relates to full build out of a business park (commercial subdivision). This work includes addressing stormwater and other site characteristics specific to the DEP's SLODA permit application process.

Design and Permitting | Eastport Port Authority
Chip was responsible for the design, and MDEP and Army Corps of Engineers permitting of several expansions at the Port including storage yards and warehouses. The work also included the design of associated stormwater conveyance and treatment systems to satisfy regulatory requirements.

Windfarm Project | Jonesport, Maine
Chip was responsible for the design of approximately 1.5 miles of access road servicing three wind turbines. Chip worked closely with the transport company and erector company to provide a design to meet their strict requirements related to road geometry and lay down areas. The work also included coordinating with permitting agencies to develop a plan set that would impact the least amount of sensitive natural resources as possible.

Design and Permitting – Campground Facility | Maine
Chip was responsible for the design and permitting of a 100-site campground, approximately 100 acres in size, which included approximately eight miles of bike paths throughout a larger portion of property. This project included the design of roadways, campsites, storm water treatment areas, and campground facilities to meet drainage and geometric requirements while still satisfying DEP and the Army Corps of Engineers regulatory requirements for the permitting of the site.

Woodland Commercial Park | Baileyville / Baring, Maine
Chip was responsible for the design, and MDEP and Army Corps of Engineers permitting of approximately 3,000 feet of roadway for an industrial park. The work also included the design of associated sewer and water utilities, as well as drainage systems. The proposed design accommodated drainage improvements in an exceedingly difficult site.

Foxcroft Academy Dormitory | Dover-Foxcroft, Maine
Chip was responsible for the site design, and MDEP and Army Corps of Engineers permitting of a new dormitory at Foxcroft Academy. The work included the design of access drives, parking, ADA accessible routes, water and sewer utility connections, and associated stormwater conveyance and treatment systems to satisfy MDEP and Army Corps regulatory requirements.

Fiberight Solid Waste Processing Facility | Hampden, Maine
Chip was responsible for the design and MDEP and Army Corps of Engineers permitting of a new Solid Waste Processing Facility. The design of the site around a 154,000 square foot building included large parking and maneuvering areas, loading docks, inbound and outbound scales, approximately one mile of new roadway to access the facility, and water, sewer, electric and gas utilities. The work also included the design of associated stormwater conveyance and treatment systems to satisfy regulatory requirements.

AIM Site Expansion | Arundel, Maine
Chip was responsible for the design and MDEP permitting of an expansion to their existing facility. The work included the design of a storage yard approximately two acres in size, as well as associated, parking, and maneuvering areas. The work also included the design of stormwater conveyance and treatment systems to satisfy regulatory requirements.

Athletic Field Design | Lee Academy, Lee, Maine
Chip was responsible for the design and MDEP permitting of a new athletic field and tennis courts, as well as associated, parking, and maneuvering areas. The work also included the design of stormwater conveyance and treatment systems to satisfy regulatory requirements.

Castine Road Rehabilitation Project | Castine, Maine
Chip was responsible for the design of multiple roads and associated storm water utilities for this project. The proposed design needed to optimize the drainage conditions while minimizing conflicts with existing structures and other features in close proximity to the roadway.

Presque Isle Landfill Closure Application | Presque Isle, Maine
Chip was responsible for the surface water control plan and design portion of the landfill closure application. The surface water control plan included developing pre and post development hydrology drawings and analysis as well as the development of an erosion and sediment control drawing.

Haskell Road Widening | Bangor, Maine
Chip acted as the Project Engineer for the widening of the Haskell Road in Bangor from two lanes to three lanes. During this process he collaborated closely with the contractor, city officials, landowners, and local utilities to coordinate the work in as smooth a manner as possible. The project included a full depth reconstruction along with new granite curbing and storm water collection and conveyance system improvements.

Veazie Dam Removal | Veazie, Maine
Chip acted as the owner's onsite representative for the removal of the Veazie hydro power dam. During the demolition, he worked closely with the contractor, owner, Federal and State officials, and landowners to ensure that the dam was removed in a safe and environmentally friendly manner. Chip engaged in everyday decisions regarding construction strategy and methods and provided daily construction reports to keep all parties informed of the progress.

Ethan Miester

Civil Engineer

emiester@haleyward.com | 207.989.4824

Ethan is a recent graduate from the University of Maine with a strong foundational understanding of Civil Engineering principles. As a Civil Engineer, Ethan has experience in the land development industry performing site design, stormwater management design and utility infrastructure design. Ethan also has experience in the preparation of local and state permit applications for commercial and residential developments.

PROFESSIONAL HISTORY

2024 – Present
Haley Ward, Inc.
Civil Engineer

2023 – 2024
Haley Ward, Inc.
Project Engineer Intern

2022 – 2022
Pullman Services
Project Engineer Intern

CORE EXPERTISE:
Residential Site Design
Commercial Site Design
Storm Water Management
Hydro CAD
Local Permitting
State Permitting

EDUCATION:
B.S. (2024) Civil Engineering
University of Maine

REGISTRATIONS:
Engineer Intern #EI8330

PROJECT EXPERIENCE

Hammond Lumber Company Site Design and Permitting | May 2023
Ethan assisted engineers in the site design and permitting of a new planner mill. He performed tasks such as site grading, stormwater infrastructure design and lighting layout. Ethan calculated the anticipated noise pollution to ensure the project maintained compliance with local ordinances. He also assembled a local building permit for the town of Belgrade.

Hobe Sounds Farmers Market | June 2023
Ethan assisted in the design of a new well to provide drinking water to the Hobe Sound Farmers Market. He worked along side an engineer to select a suitable pump and ensure the system maintained compliance with the Florida Department of Environmental Protections regulations regarding Public Water Supplies.

RSU 67 Multi-Purpose Sports Court Design | July 2023
Ethan assisted engineers in the design and layout of a new multi-purpose sports court for Regional School Unit (RSU) 67. He provided conceptual designs to optimize the space and designed the stormwater infrastructure to manage stormwater on the court. Ethan also corresponded with subcontractors to design a suitable lighting system.

Greenville Residential Improvements | July 2023
Ethan assisted in the site design and permitting for private residential improvements. He utilized local ordinance to provide the client with limitations on renovation and performed the site layout for a dwelling expansion, new garage, and new driveway. He also prepared a Shoreland Use Building Permit Application for the town of Greenville.

Wyman & Son UV Disinfection System | August 2023
Ethan assisted engineers in the design of a new Ultraviolet Disinfection System for the wastewater produced by a fruit processing plant. He worked to transition the previously chlorine base disinfection system to an ultraviolet system that maintained compliance with the facilities Waste Discharge License.

Bouchard Cleaning Truck Washing Terminal & Rental Facility | August 2023
Ethan assisted engineers in the site design, stormwater infrastructure design and permitting for a new truck washing terminal and rental office space. He performed tasks such as site grading, stormwater management, lighting design and prepared a Site Plan Application for the town of Hampden.

SECTION 5

NOISE

SECTION 5

NOISE

The project will comply with the Maine Department of Environmental Protection (MDEP) Regulations on noise. This project must meet the Sound Level Limits defined within 06-096 CMR 375, Section 10 "Control of Noise."

Noise Limits

Generally, 06-096 CMR 375, Section 10 regulates the control of noise being produced from both the construction of and routine operation of the proposed project, at all hours. Sound levels are limited during routine operation to 75dBA, any time of day, measured at exterior property lines. They are further limited at any Protected Location, as defined in Section 10 (G). Sound levels are limited during construction of the project depending upon the time of day and the duration of the construction operation. Construction equipment is further regulated by federal noise regulations. Please refer to 06-096 CMR 375, Section 10(C)(1)&(2) for these limits.

Operational Noise Level Calculations

Construction Operations

Hired contractors will be required to meet the sound level limits presented in 06-096 CMR 375, Section 10(C)(2) during the construction of the site, as well as other State and Federal regulations regarding allowable sounds levels for construction equipment.

Post-Construction Operations

The proposed development will include single-family residential homes, rental cabins, and condominiums to support the recreational activities available on and around Hammond Ridge. Additionally, light commercial uses are planned. It is not anticipated that any of the proposed uses will generate significant noise, and therefore, the development is expected to comply with regulatory noise standards at property lines and sensitive areas.

Conclusion

Sound levels generated on the site from routine operations will be at or below the noise limits presented in 06-096 CMR 375, Section 10(C)(1). Additionally, the contractors will be required to meet the sound level limits presented in 06-096 CMR 375, Section 10(C)(2) during the construction of the site, as well as other State and Federal regulations regarding allowable sound levels for construction equipment.

SECTION 6

VISUAL QUALITY AND SCENIC CHARACTER

SECTION 6

VISUAL QUALITY AND SCENIC CHARACTER

The intent of this project is to design, develop, and operate a signature resort for Maine and New England. Its design, development, and operation will seek harmony with the natural environment as it highlights the area's rugged natural beauty. Building materials will consist of natural wood or other refurbished or recycled materials to fit harmoniously with the surrounding landscape. The proposed development is intended to enhance and maintain recreational opportunities that will allow residents and guests the opportunity to experience the scenic and natural landscape of the region.

The nature of the proposed uses promotes environmental sustainability and social and cultural values that encourage preserving existing site characteristics. Hammond Ridge will protect and preserve the scenic landscape of the Millinocket Lake region by ensuring the proposed developments harmonize with the surrounding environment. The developer is committed to minimizing impacts to scenic character by maintaining distance between developments and the shoreland zone, avoiding hilltop or ridge line development, maintaining height standards, and utilizing building materials based on their compatibility with natural characteristics of the surrounding area. Existing development on the site has been constructed in a way that avoids undue impacts to viewsheds from Millinocket Lake, Baxter State Park, and the Millinocket Road, a scenic byway. This has been achieved through sensitive siting, limited and appropriate clearing and planting where required, as well as solar/reflective considerations. The proposed development will continue these practices.

SECTION 7

WILDLIFE AND FISHERIES

Response Letter

SECTION 7

WILDLIFE AND FISHERIES

During the Hammond Ridge Development Zone Change Petition in 2021, a letter was sent to the Maine Department of Inland Fisheries and Wildlife requesting they review the site and its surroundings to verify that there are no impacts to significant wildlife or fisheries habitat. Attached is their response confirming there are no impacted areas.

JANET T. MILLS
GOVERNOR

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

JUDITH CAMUSO
COMMISSIONER

June 29, 2021

Ben Smith
North Star Planning
New Gloucester Hall, Suite 102
49 Pineland Dr
New Gloucester, ME 04260

RE: Information Request – Hammond Ridge Rezoning Project, T1 R8 WELS

Dear Ben:

We offer the following comments on known fisheries and wildlife resources in the immediate subject area as it pertains to this petition to rezone approximately 1,200 acres in the Township T1 R8 WELS in Penobscot County with a portion of the lot also located in T1 R9 WELS in Piscataquis County (Tax Map 01 Lot 1.2), from the present D-GN: General Zone to a D-PD: Planned Development Zone for the purpose of implementing a Master Plan including recreation trail development, activity centers, lodging, and other recreational opportunities. Please note that our comments are preliminary and that an assessment of associated impacts to natural resources, if any, resulting from a future development proposal will be in the context of the Land Use Planning Commission permitting process, as applicable.

Our Department has not mapped any Essential Habitats in the subject area.

Endangered, Threatened, and Special Concern Species

Bat Species – Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season.

Significant Wildlife Habitat

Significant Vernal Pools - At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the subject area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed so it is possible that this habitat could be present in the subject area. We recommend that surveys for vernal pools be conducted prior to any clearing or construction activities.

Fisheries Habitat

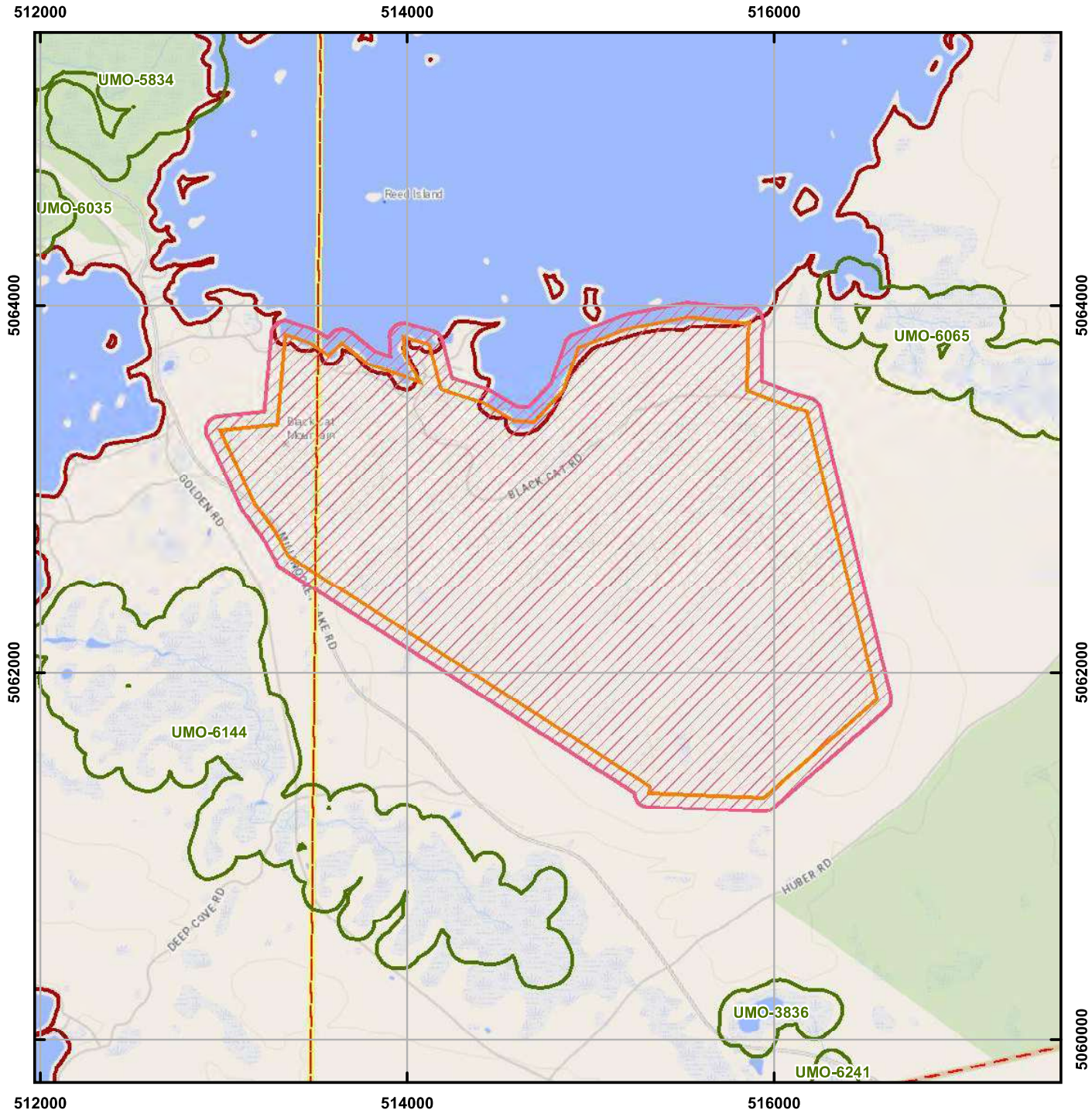
For all future development, we recommend that 100-foot undisturbed vegetated buffers be maintained along streams and waterbodies. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

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 agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

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,

Becca Settele
Wildlife Biologist



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Hammond Ridge Rezoning, T1 R8 WELS (Version 1)

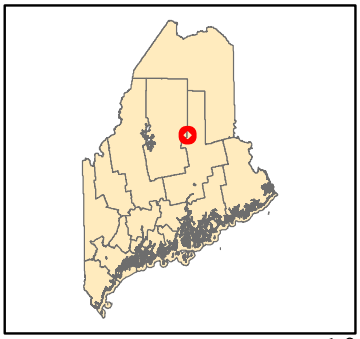
Maine Department of Inland Fisheries and Wildlife

0 0.15 0.3 0.6 0.9 1.2 Miles

Projection: UTM, NAD83, Zone 19N

Date: 6/17/2021

- ProjectSearchAreas - All Versions
- Maine Cliff and Talus Areas
- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 lwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons
- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Special Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats



SECTION 8

HISTORIC SITES

Response Letter

SECTION 8

HISTORIC SITES

During the Hammond Ridge Development Zone Change Petition in 2021, a letter was sent to the Maine Historic Preservation Commission requesting they review the site and its surroundings to identify any historically or archaeologically significant areas. Attached is their response confirming there are no impacted areas.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

June 22, 2021

Mr. Ben Smith
NorthStar Planning
New Gloucester Hall
Suite 102
49 Pineland Dr.
New Gloucester, ME 04260

Project: MHPC# 1039-21 Hammond Ridge Development Company LLC
Zone Change Petition
Town: Big T1 R8 Wels, ME

Dear Mr. Smith:

In response to your recent request, I have reviewed the information received June 11, 2021 to initiate consultation on the above referenced projects pursuant to the requirements of the Maine Land Use Planning Commission.

Based on the information provided, I have concluded that there are no National Register eligible properties on or adjacent to the parcels. In addition, the project area is not considered sensitive for archaeological resources.

Please contact Megan M. Rideout of our staff, 287-2992 or megan.m.rideout@maine.gov, if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney

Kirk F. Mohney
State Historic Preservation Officer

PHONE: (207) 287-2132

SECTION 9

UNUSUAL NATURAL AREAS

Response Letter

SECTION 9

UNUSUAL NATURAL AREA

During the Hammond Ridge Development Zone Change Petition in 2021, a letter was sent to the Maine Natural Areas Program requesting they review the site and its surroundings to verify that there are no unusual natural areas impacted by the development. Please refer to their response verifying that there are no impacted areas.

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

June 14, 2021

Ben Smith
North Star Planning
New Gloucester Hall, Suite 102
49 Pineland Drive
New Gloucester, ME 04260

Via email: bsmith@northstar-planning.com

Re: Rare and exemplary botanical features in proximity to: Hammond Ridge Development Zone Change Petition from D-GN to D-GP, T1 R8 WELS and T1 R9 WELS, Maine

Dear Mr. Smith:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received June 11, 2021 for information on the presence of rare or unique botanical features documented from the vicinity of the project in T1 R8 and T1 R9 WELS, 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. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

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.

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

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

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.

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

Rare and Exemplary Botanical Features within 4 miles of
Project: Hammond Ridge Development Zone Change Petition from D-GN to D-PD, T1 R8 WELS and T1 R9 WELS, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Black Spruce Bog						
	<null>	S4	G3G5	2009	10	Coastal non-tidal wetland (non-forested, wetland),Forested wetland
Dwarf Shrub Bog						
	<null>	S5	G5	2009	10	Open wetland, not coastal nor rivershore (non-forested, wetland),Coastal non-tidal wetland (non-forested, wetland)
Eccentric Bog Ecosystem						
	<null>	S3	GNR	2009	1	Open wetland, not coastal nor rivershore (non-forested, wetland),Forested wetland
Moor Rush						
	SC	S2	G5T5	2003-08-20	14	Open wetland, not coastal nor rivershore (non-forested, wetland)
Orono Sedge						
	T	S3	G3	1988-06-28	45	Old field/roadside (non-forested, wetland or upland)
Patterned Fen Ecosystem						
	<null>	S3	GNR	2009	9	Open wetland, not coastal nor rivershore (non-forested, wetland),Forested wetland
Red and White Pine Forest						
	<null>	S3	G3G4	2013-10-17	16	Conifer forest (forest, upland)
	<null>	S3	G3G4	2020-10-28	29	Conifer forest (forest, upland)
Sweetgale Fen						
	<null>	S4	G4G5	1985-08-31	5	Open wetland, not coastal nor rivershore (non-forested, wetland),Coastal non-tidal wetland (non-forested, wetland)
Unpatterned Fen Ecosystem						
	<null>	S5	GNR	2009	37	Open wetland, not coastal nor rivershore (non-forested, wetland),Forested wetland

Conservation Status Ranks

State and Global Ranks: This ranking system facilitates a quick assessment of a species' or habitat type's rarity and is the primary tool used to develop conservation, protection, and restoration priorities for individual species and natural habitat types. Each species or habitat is assigned both a state (S) and global (G) rank on a scale of 1 to 5. Factors such as range extent, the number of occurrences, intensity of threats, etc., contribute to the assignment of state and global ranks. The definitions for state and global ranks are comparable but applied at different geographic scales; something that is state imperiled may be globally secure.

The information supporting these ranks is developed and maintained by the Maine Natural Areas Program (state ranks) and NatureServe (global ranks).

Rank	Definition
S1 **G1**	**Critically Imperiled** – At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
S2 **G2**	**Imperiled** – At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S3 **G3**	**Vulnerable** – At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S4 **G4**	**Apparently Secure** – At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5 **G5**	**Secure** – At very low risk or extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
SX **GX**	**Presumed Extinct** – Not located despite intensive searches and virtually no likelihood of rediscovery.
SH **GH**	**Possibly Extinct** – Known from only historical occurrences but still some hope of rediscovery.
S#S# **G#G#**	**Range Rank** – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem.
SU **GU**	**Unrankable** – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GNR **SNR**	**Unranked** – Global or subnational conservation status not yet assessed.
SNA **GNA**	**Not Applicable** – A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., non-native species or ecosystems.
Qualifier	**Definition**
S#? **G#?**	**Inexact Numeric Rank** – Denotes inexact numeric rank.
Q	**Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable. The "Q" modifier is only used at a global level.
T#	**Infraspecific Taxon (trinomial)** – The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank.

State Status: Endangered and Threatened are legal status designations authorized by statute. Please refer to MRSA Title 12, §544 and §544-B.

Status	Definition
E	**Endangered** – Any native plant species in danger of extinction throughout all or a significant portion of its range within the State or Federally listed as Endangered.
T	**Threatened** – Any native plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range in the State or Federally listed as Threatened.
SC	**Special Concern** – A native plant species that is rare in the State, but not rare enough to be considered Threatened or Endangered.
PE	**Potentially Extirpated** – A native plant species that has not been documented in the State in over 20 years, or loss of the last known occurrence.

Element Occurrence (EO) Ranks: Quality assessments that designate viability of a population or integrity of habitat. These ranks are based on size, condition, and landscape context. Range ranks (e.g., AB, BC) and uncertainty ranks (e.g., B?) are allowed. The Maine Natural Areas Program tracks all occurrences of rare plants and natural communities/ecosystems (S1-S3) as well as exemplary common natural community types (S4-S5 with EO ranks A/B).

Rank	Definition
A	**Excellent** – Excellent estimated viability/ecological integrity.
B	**Good** – Good estimated viability/ecological integrity.
C	**Fair** – Fair estimated viability/ecological integrity.
D	**Poor** – Poor estimated viability/ecological integrity.
E	**Extant** – Verified extant, but viability/ecological integrity not assessed.
H	**Historical** – Lack of field information within past 20 years verifying continued existence of the occurrence, but not enough to document extirpation.
X	**Extirpated** – Documented loss of population/destruction of habitat.
U	**Unrankable** – Occurrence unable to be ranked due to lack of sufficient information (e.g., possible mistaken identification).
NR	**Not Ranked** – An occurrence rank has not been assigned.

Visit the Maine Natural Areas Program website for more information
http://www.maine.gov/dacf/mnap

SECTION 10

BUFFERS

SECTION 10

BUFFERS

The proposed development is surrounded by a forest. Clearing will only be performed as necessary to facilitate the new proposed uses. The site will include buffers both for visual screening and stormwater treatment. Hammond Ridge Development Company, LLC will own and maintain the proposed buffers. All proposed buffering and limits of tree clearing can be seen on the Proposed Site Plan at the end of this application. Refer to **Section 12** for more information on stormwater buffers.

SECTION 11

SOILS

Class A – High Intensity Soil Survey
NRCS Soil Survey Report

SECTION 11

SOILS

Please refer to the High Intensity Soil Survey included in this section for detailed information on the soils on the property.

A Custom Soil Resource Report from the National Resources Conservation Service (NRCS) is attached.

CLASS A – HIGH INTENSITY SOIL SURVEY

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

FOR

Hammond Ridge Development Company, LLC
PO Box 669
Millinocket, ME 04462

JANUARY 10, 2025
JN: 12596.004

REPORT PREPARED BY:
Haley Ward, Inc.
One Merchants Plaza, Suite 701 | Bangor, Maine 04401

TABLE OF CONTENTS

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APPENDICES

CLASS A – HIGH INTENSITY SOIL SURVEY
HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

1.0 | INTRODUCTION

Haley Ward, Inc. (Haley Ward) has completed a Class A – High Intensity Soil Survey for the proposed Hammond Ridge Development which is located along existing gravel roads east of Millinocket Lake Road, in T1 R8 WELS, Maine. The following report describes the observations and findings of this Soil Survey on the Project area which consists of an approximately 95-acre portion (the Project area) of a larger property.

2.0 | PURPOSE

The purpose of our work was to identify, describe, and map the major soil types in the Project area in support of the proposed development. This report and associated plans will be used to supplement other information required by regulatory agencies in their review of the project. The information provided in this report should also assist in evaluating the suitability of the Project area for the proposed project and indicate the relative suitability of the soils for the proposed improvements. If limitations related to soils exist, measures to overcome these are reviewed in this report.

3.0 | METHODOLOGY

As required by the Maine Site Location of Development Act (Section 11(B)(1)(b)), a Class A – High Intensity Soil Survey was completed for the Project area. This soil survey, report, and attached plans were completed in accordance with the Maine Association of Professional Soil Scientists (MAPSS) Standards. As defined in these Standards, the standards associated with this soil survey are:

3.1 Soil Survey Standards Class A – High Intensity Soil Survey

1. Map units will not contain dissimilar limiting individual inclusions larger than one-eighth acre. Dissimilar limiting inclusions may total more than one-eighth acre per map unit delineation, in the aggregate, if not contiguous.
2. Scale of one-inch equals 100 feet or larger.
3. Ground control – base line and test pits for which detailed data are recorded and located to sub-meter accuracy under the direction of a registered land surveyor or qualified professional engineer.
4. Base map with two-foot contour intervals.

This soil survey is a compilation of on-site investigations performed on the Project area and soil survey data published by the USDA – Natural Resource Conservation Service (USDA-NRCS) for Penobscot County.

3.2 Field Methodology

Prior to the field work completed on the site, we reviewed available information about the Project area, which included Project area survey and wetland data, and online publicly available data, such as mapping information available through the USDA-NRCS.

Field work for the soil survey was completed in December 2024. Excavator dug and hand dug test pits, and hand auger borings were reviewed and described as part of the soils data for this soil survey. In addition to the soils explorations completed by Johanna Szillery, LSS 494, soils observations completed by Sarah Ashley, LSE 408, and by David Moyse, LSS 195 were also used to supplement the data used in this soil survey. In total, approximately 63 soils observations were used to support this soil survey. Soils conditions summary tables and soil profile classification logs, which note the excavation type and method, are included in **Appendix C.** Soils observations completed by David Moyse were limited to hand dug test pits and hand auger, and as such, observations of refusal may have been interpreted to be bedrock; however, during the 2023 and 2024 soils work, excavator dug test pits did not encounter bedrock in the Project area.

Test pit and boring locations were selected based upon observed changes in relief, vegetation, and landform as well as based on location of proposed improvements. Soil properties such as texture, structure, color, consistence, and coarse fragment content were described when they could be observed within a test pit. Test pit characteristics such as depth to restrictive horizon(s), depth to seasonal high-water table, depth of rooting, and depth to bedrock were described for each test pit, if observed. Soils were correlated to the closest match soil series established by the USDA-NRCS. In addition, the Field Indicators of Hydric Soils in the United States published by the National Technical Committee for Hydric Soils (NTCHS) was used for guidance on hydric soils.

Test pit locations and other site features were located using a sub-meter capable GPS unit and are shown on the "Class A – High Intensity Soil Survey" map which is included in **Appendix B**. Soil Conditions Summary Tables and Test Pit Logs are included in **Appendix C**.

4.0 | SITE DESCRIPTION

The Project area is approximately 95 acres in size and located along Katahdin View Drive, an existing gravel road accessed via Millinocket Lake Road in T1 R8 WELS, Maine. A Site Location Map is attached in **Appendix A**. The Project area consists of primarily undeveloped woodland that has indications of past timber harvesting and is currently developed with recreational trails. A portion of the Project area is developed with a restaurant and associated parking area. The Project area is located along the saddle and sideslopes between Hammond Ridge to the east and Black Cat Mountain to the west. Within the Project area, the landscape consists of relatively level to slightly sloping areas in the central portions, with steeper sideslopes of Black Cat Mountain and Hammond Ridge in the remainder of the Project area.

According to surficial geology data available from the Maine Geological Survey, surficial materials in the Project area consist of end moraine deposits of till and/or sand and gravel prevalent on ridge landforms. According to the USDA-NRCS Soil Survey for Penobscot County, soils within the Project area are mapped as the Caanan, Hermon, and Howland series.

4.1 Soil Characteristics

The soils observed on-site are generally deep, coarse-loamy soils that are formed from sandy, stony glacial till. These soils include the soil series Skerry, Waumbek and Westbury, with smaller components of Becket and Hermon series. The moderately well drained Skerry series dominates the relatively level to gently sloping saddle and sideslope portions of the Project area, while a combination of Skerry and moderately well drained Waumbek dominate the sideslopes. Westbury soils are somewhat poorly drained and located in level to gently sloping positions. All three series, Skerry, Waumbek, and Westbury are deep to bedrock, coarse-loamy (sandy loam) textured soils. All three series have a considerable component of coarse fragments – gravel, cobble, stones, and/or boulders. The Waumbek series and closely related Hermon series are considered skeletal, that is 35% or more of the soil volume is composed of rock fragments. Surficial stones and boulders are common within the Project area. Depths to restriction varied from 18 inches below ground surface to less than 40 inches below ground surface, and was generally encountered near to the stony, sandy glacial till parent material. The poorly drained Brayton series, a hydric soil, is mapped in wetlands along streams and drainage areas. Brayton soils are a component of wetlands if other wetland criteria are present.

Soils Map Unit Descriptions are included in **Appendix D.**

As compared with the soils mapped on the Soil Survey for Penobscot County for the Project area, Haley Ward observed and mapped soils that are deeper than the Cannan soils mapped on the USDA-NRCS map. The Skerry, Waumbek, and Westbury soils mapped on the Project area are derived from similar parent material and are of a similar morphology.

4.2 Soil and Map Unit Descriptions

A Class A – High Intensity Soil Survey map is included in **Appendix B**, and illustrates our interpretation of the type, location, and extent of the soils observed on-site. Each map unit symbol consists of three letters (e.g., SkA). The first two letters represent the soil series (described above) and phase. The third letter in the map unit symbol indicates the surface slope of the area within the map unit (A slope – 0 – 3% percent slopes). The area within the map unit delineation defines an area that is estimated to be the same soil type. There may be small areas of differing soils, called inclusions, which exist within the map unit delineated. As defined by MAPSS for a Class A soil survey, map units may not contain dissimilar limiting individual inclusions larger than one-eighth (1/8) acre. Descriptions of each map unit are included in **Appendix D**. Map unit descriptions include a description

of a typical soil description, as well as information on physical properties and related interpretations. The physical properties and interpretations are from the USDA-NRCS. A soils glossary is included in **Appendix E**.

5.0 | FINDINGS

Based on the proposed development and the soils that Haley Ward mapped within the Project area, the soils on-site are generally suitable for the proposed development. The following limitations exist:

- Shallow seasonal high water table and hydric soils within the Bryaton soil series. Bryaton soils are often a component of wetlands. Within the Project area, these soils are mapped as wetland. Proposed improvements associated with the Project are located outside of wetlands.
- Skeletal soils and surficial stoniness within the Project area. Surficial stoniness and coarse fragments within the soil profile can be a limitation for construction.

The scope of this work has been limited to the development of a Class A – High Intensity Soil Survey in general accordance with the standards established by the Maine Association of Professional Soil Scientists. This report has been prepared for Hammond Ridge Development Company, LLC for specific application to the Hammond Ridge Development project in T1 R8 WELS, Maine. The conclusions and recommendations presented in this report are based on our interpretations of the data obtained from the explorations and are in part based upon the proposed development.

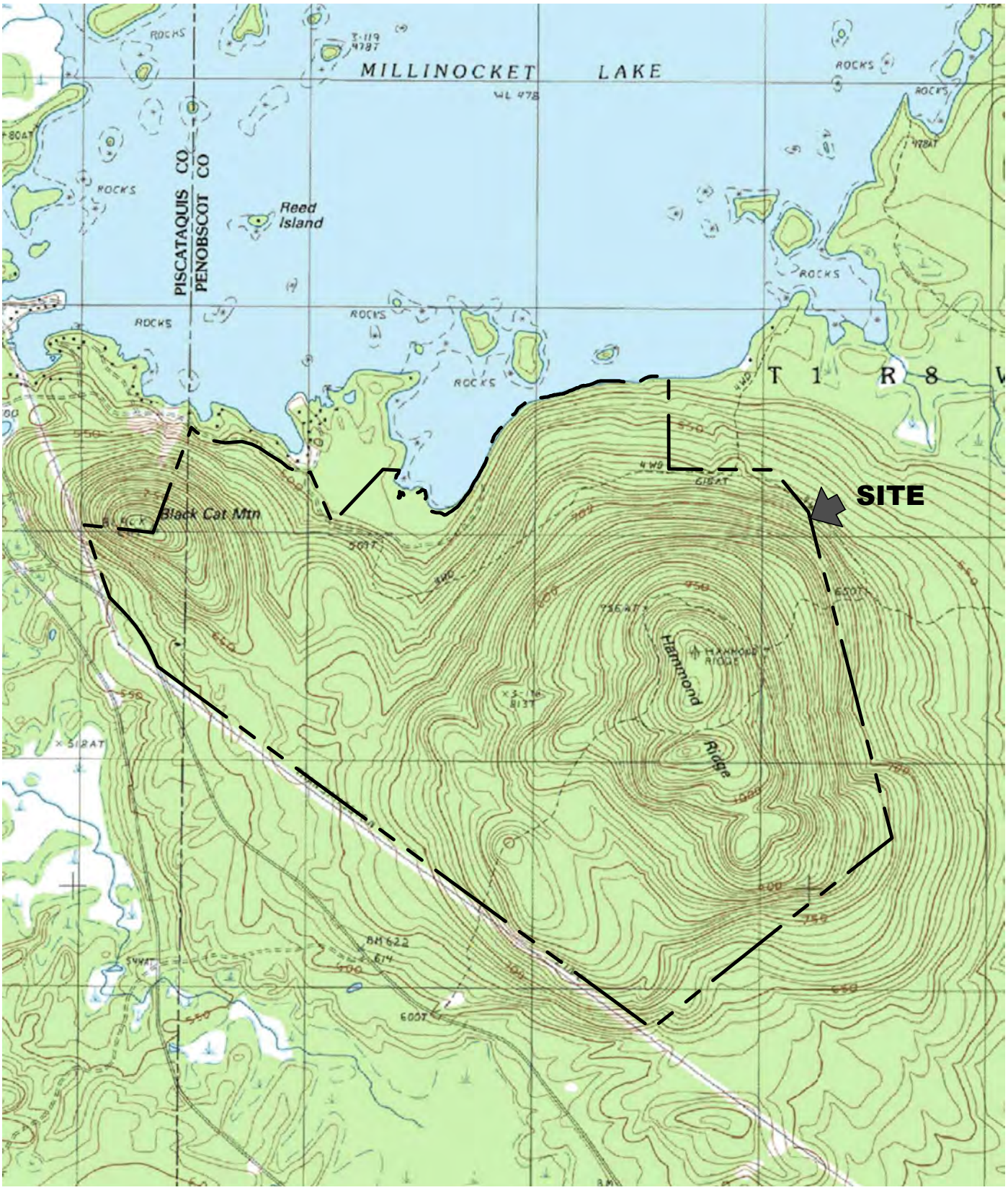
The accompanying soil profile descriptions, soil survey map, and the report were completed in general accordance with the standards for a Class A – High Intensity Soil Survey adopted by the Maine Association of Professional Soil Scientists (February 2004, revised March 2009), as amended, and prepared by Johanna Szillery, LSS 494.

Haley Ward, inc.

Johanna E. Szillery, L.S.S. 494
Senior Project Scientist | Project Manager | Vice President

APPENDIX A

SITE LOCATION MAP



SOURCE:
U.S.G.S. TOPOGRAPHIC QUADRANGLE
NORCROSS
@ 1:24,000

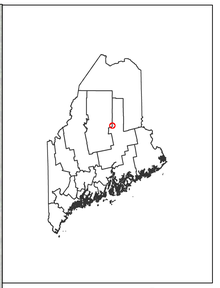
HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE
LOCATION MAP

2024.06.19
12596.004

APPENDIX B

SOIL SURVEY MAP



Legend

- Project Boundary
- HRDC interior boundaries
- HRDC proposed roads
- Soils Exploration
- HTP Test Pits
- HRDC wetland area
- Soil Map Unit Boundary
- Contours 1ft

SOIL SURVEY LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
ByA	Bryaton loam, 0 to 3 percent slopes
Md	Made Land
SkA	Skerry gravelly sandy loam, 0 to 3 percent slopes
SkB	Skerry gravelly sandy loam, 3 to 8 percent slopes
SkC	Skerry stony fine sandy loam, 8 to 15 percent slopes
WaB	Waumbek stony fine sandy loam, 3 to 8 percent slopes
WeB	Westbury stony fine sandy loam, 3 to 8 percent slopes
WaD	Waumbek cobbly fine sandy loam, 15 to 25 percent slopes
WeB	Westbury cobbly sandy loam, 3 to 8 percent slopes
WWA	Westbury-Waumbek association, 0 to 3 percent slopes
WSC	Waumbek-Skerry association, 8 to 15 percent slopes

MAP NOTES:

1. THIS SOIL SURVEY PLAN AND THE MAP UNIT DELINEATIONS MEET THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS' (MAPSS) GUIDELINES FOR A CLASS A-HIGH INTENSITY SOIL SURVEY AS DESCRIBED IN THE PUBLICATION ENTITLED 'GUIDELINES FOR MAINE CERTIFIED SOIL SCIENTISTS FOR SOIL IDENTIFICATION AND MAPPING' (FEBRUARY 2004, REV MARCH 2009).

2. TEST PIT LOCATIONS, AUGER BORING LOCATIONS, AND OTHER FEATURES WERE LOCATED USING A SUB-METER CAPABLE GPS.

3. THIS MAP SHOULD BE USED AND INTERPRETED WITH THE ACCOMPANYING SOIL SURVEY REPORT, TITLED 'CLASS A-HIGH INTENSITY SOIL SURVEY, HAMMOND RIDGE DEVELOPMENT, T1 R8 WELS, MAINE' BY JOHANNA SZILLERY, L.S.S. #494, AND DATED JANUARY 10, 2025.

4. MAP IS PROJECTED USING UTM ZONE19 COORDINATES, AND REFERENCES THE NORTH AMERICAN DATUM OF 1983 (NAD83).

5. NORTH ARROW IS ORIENTED TO GRID NORTH IN ALL MAP EXTENTS DEPICTED HEREIN.

6. SITE FEATURES ARE APPROXIMATE.

7. WETLAND DATA PROVIDED BY MOYSE ENVIRONMENTAL SERVICES

STATE OF MAINE — JOHANNA E. SZILLERY NO. 55494 — SOIL SCIENTIST

0 250 500 Feet

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
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Bangor, ME 04401
207-989-4824

CLIENT
HAMMOND RIDGE DEVELOPMENT COMPANY

PROJECT
HAMMOND RIDGE DEVELOPMENT

TITLE
CLASS A-HIGH INTENSITY SOIL SURVEY

DATE	PROJECT No.
1/9/2025	12596.004
DRAWN BY	SCALE
KOVERTURF	1" = 100'

APPENDIX C

SOIL CONDITIONS SUMMARY TABLE AND TEST PIT LOGS

FORM E Rev. 7/21

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Lot No.	Exploration Symbol *(TP 1, B 2, etc.)*	✘ if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition *(if by S.E.)*, ● Soil series name *(if by S.S.)*, or by ● Geologic unit *(if by C.G.)*	Depths to *(inches)*: Redoximorphic Features	Bedrock	Hydraulically Restrictive Layer	Limit of Exploration	Ground Surface Slope (%)	Ground Surface Elevation
	101	☐	Skerry grav sandy loam	26	N.O.	24	50		
	102	☐	Skerry sandy loam	19	N.O.	19	55		
	103	☐	Westbury sandy loam	13	N.O.	18	60		
	104	☐	Skerry SL	16	N.O.	16	70		
	105	☐	Skerry cobb SL	18	N.O.	25	40		
	106	☐	Waumbek st SL	25	N.O.	34	48		
	107	☐	Waumbek st SL	23	N.O.	30	60		
	108	☐	Skerry st fsl	20	N.O.	30	60		
	109	☐	Waumbek b fsl	22	N.O.	22	60		
	110	☐	Waumbek st fsl	21	N.O.	30	55		
	111	☐	Waumbek cb fsl	19	N.O.	33	70		
	112	☐	Waumbek st fsl	18	N.O.	30	70		
	113	☐	Waumbek st fsl	23	N.O.	33	60		
	114	☐	Waumbek cb fsl	27	N.O.	33	55		
	115	☐		N.O.	N.O.	N.O.	16		
	116	☐		N.O.	N.O.	N.O.	17		
	117	☐		12	N.O.	N.O.	15		
	118	☐		N.O.	N.O.	N.O.	15		
	119	☐		N.O.	N.O.	N.O.	17		
	120	☐		N.O.	N.O.	N.O.	20		
	121	☐		N.O.	N.O.	N.O.	20		
	122	☐		N.O.	N.O.	N.O.	16		
	123	☐		N.O.	N.O.	N.O.	17		
	124	☐		N.O.	N.O.	N.O.	20		
	125	☐		N.O.	N.O.	N.O.	21		
	126	☐		N.O.	N.O.	N.O.	17		
	127	☐		N.O.	N.O.	N.O.	21		
	128	☐		N.O.	N.O.	N.O.	18		
	129	☐		16	N.O.	N.O.	19		
	130	☐		N.O.	N.O.	N.O.	16		
	131	☐		21	N.O.	N.O.	25		
	132	☐		17	N.O.	N.O.	19		

INVESTIGATOR INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
Name Printed

☐ Site Evaluator
☒ Soil Scientist
☐ Geologist
☐ Professional Engineer

1/2/2025
Date

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License No.

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FORM E Rev. 7/21

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Lot No.	Exploration Symbol *(TP 1, B 2, etc.)*	✘ if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition *(if by S.E.)*, ● Soil series name *(if by S.S.)*, or by ● Geologic unit *(if by C.G.)*	Depths to *(inches)*: Redoximorphic Features	Bedrock	Hydraulically Restrictive Layer	Limit of Exploration	Ground Surface Slope (%)	Ground Surface Elevation
	133	☐		N.O.	N.O.	N.O.	15		
	134	☐		15	N.O.	N.O.	17		
	135	☐		N.O.	N.O.	N.O.	17		
	136	☐		N.O.	N.O.	N.O.	13		
	137	☐		N.O.	N.O.	N.O.	13		
	138	☐		N.O.	N.O.	N.O.	12		
	139	☐		N.O.	N.O.	N.O.	16		
	140	☐		N.O.	N.O.	N.O.	14		
	141	☐		N.O.	N.O.	N.O.	13		
	142	☐	Brayton mucky SILO	0	N.O.	N.O.	18		
	143	☐		N.O.	N.O.	N.O.	14		
	144	☐		13	N.O.	N.O.	23		
	145	☐		13	N.O.	N.O.	18		
	146	☐		N.O.	N.O.	N.O.	12		
	147	☐		N.O.	N.O.	N.O.	11		
	148	☐		N.O.	N.O.	N.O.	11		
	149	☐		N.O.	N.O.	N.O.	10		
	150	☐		N.O.	N.O.	N.O.	13		
	151	☐		N.O.	N.O.	N.O.	14		
	152	☐		N.O.	N.O.	N.O.	9		
	153	☐		N.O.	N.O.	N.O.	13		
	154	☐		N.O.	N.O.	N.O.	14		
	155	☐		N.O.	N.O.	N.O.	22		
	156	☐		N.O.	N.O.	N.O.	16		
	157	☐		N.O.	N.O.	N.O.	9		
	158	☐		N.O.	N.O.	N.O.	11		
	159	☐		N.O.	N.O.	N.O.	10		
	160	☐		N.O.	N.O.	N.O.	18		
	161	☐		N.O.	N.O.	N.O.	22		
	162	☐		N.O.	N.O.	N.O.	15		
	163	☐		N.O.	N.O.	N.O.	4		
	164	☐		N.O.	N.O.	N.O.	8		

INVESTIGATOR INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
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☐ Site Evaluator
☒ Soil Scientist
☐ Geologist
☐ Professional Engineer

1/2/2025
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STATE OF MAINE JOHANNA SZILLERY NO. 5494 SOIL SCIENTIST

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FORM E Rev. 7/21

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name: Hammond Ridge Development	Project Location (municipality): T1 R8 WELS ME

Lot No.	Exploration Symbol *(TP 1, B 2, etc.)*	✘ if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition *(if by S.E.)*, ● Soil series name *(if by S.S.)*, or by ● Geologic unit *(if by C.G.)*	Depths to *(inches)*: Redoximorphic Features	Bedrock	Hydraulically Restrictive Layer	Limit of Exploration	Ground Surface Slope (%)	Ground Surface Elevation
		☐							
	202	☐	Waumbek cb fsl	N.O.	N.O.	25	32		
		☐							
	214	☐	Waumbek v cb fsl	N.O.	N.O.	21	24		
	217	☐	Waumbek v cb fsl	<40	N.O.	21	30		
	218	☐	Waumbek v cb fsl	<40	N.O.	21	32		
	219	☐	Waumbek v cb fsl	<40	N.O.	21	30		
	220	☐	Skerry gr fsl	26	N.O.	N.O.	36		
	221	☐	Skerry gr fsl	<40	N.O.	N.O.	27		
	222	☐	Westbury grav fsl	16	N.O.	8	27		
	223	☐	Waumbek v cb fsl	16	N.O.	16	35		
	224	☐	Westbury grav fsl	14	N.O.	8	18		
	225	☐	Westbury grav fsl	<16	N.O.	N.O.	13		
	227	☐	Skerry cb fsl	20	N.O.	20	34		
	230	☐	Waumbek cb fsl	29	N.O.	17	32		
	236	☐	Skerry cb fsl	20	N.O.	N.O.	22		
	237	☐	Skerry gr fsl	21	N.O.	N.O.	25		
	238	☐	Skerry cb fsl	22	N.O.	22	35		
	239	☐	Skerry gr fsl	20	N.O.	20	26		
	301	☐	Skerry SL	23	N.O.	23	60		
	302	☐	Peru loam	23	N.O.	23	N.O.		
	303	☐	Westbury grav fsl	16	N.O.	16	60		
	304	☐	Westbury cb Ls	12	N.O.	12	72		
	305	☐	Skerry SL	22	N.O.	22	50		
	306	☐	Westbury fsl	15	N.O.	20/38	72		
	307	☐	Skerry grav fsl	19	N.O.	19	35		
	308	☐	Waumbek cb Sl	<40	N.O.	N.O.	28		
	309	☐	Waumbek cb Sl	<40	N.O.	N.O.	30		
	310	☐	Skerry SL	<40	N.O.	N.O.	36		
	311	☐	Waumbek fsl	<40	N.O.	N.O.	40		
	312	☐	Skerry fsl	18	N.O.	18	N.O.		
	313	☐	Skerry cb fsl	23	N.O.	23	39		

INVESTIGATOR INFORMATION AND SIGNATURE

Johanna Szillery
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Johanna E Szillery
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☒ Soil Scientist
☐ Geologist
☐ Professional Engineer

1/2/2025
Date

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FORM E Rev. 7/21

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name: Hammond Ridge Development	Project Location (municipality): T1 R8 WELS ME

Lot No.	Exploration Symbol *(TP 1, B 2, etc.)*	✗ if at SSWD Field	Description of subsurface materials by: • Soil profile/condition *(if by S.E.)*, • Soil series name *(if by S.S.)*, or by • Geologic unit *(if by C.G.)*	Depths to *(inches)*: Redoximorphic Features	Bedrock	Hydraulically Restrictive Layer	Limit of Exploration	Ground Surface Slope (%)	Ground Surface Elevation
	314	☐	Skerry cb fsl	<40	N.O.	N.O.	36		
	315	☐	Skerry cb fsl	<40	N.O.	N.O.	30		
	316	☐	Skerry cb fsl	<40	N.O.	N.O.	36		
	317	☐	Skerry cb fsl	<40	N.O.	N.O.	36		
	318	☐	Skerry fsl	<40	N.O.	24	30		
	319	☐	Skerry cb fsl	<40	N.O.	N.O.	30		
	322	☐	Skerry SL	<40	N.O.	N.O.	26		
	326	☐	Skerry grav SL	25	N.O.	40	60		
	327	☐	Skerry grav SL	18	N.O.	N.O.	28		
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INVESTIGATOR INFORMATION AND SIGNATURE

Johanna Szillery
Signature

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☐ Site Evaluator
☒ Soil Scientist
☐ Geologist
☐ Professional Engineer

1/2/2025
Date

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FORM E 2/02

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Hammond Ridge Development	**Hammond Ridge Development, LLC**	**T1 R8 WELS, Maine**

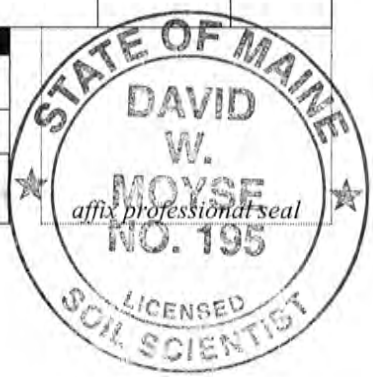
Lot No.	Exploration Symbol (TP 1, B 2, etc.)	■ or 📷 if at SSWD Field	Description of subsurface materials: ● Soil profile/condition (if by S.E.), ● Soil series name (if by C.S.S.), or ● Geologic unit (if by C.G.)	Depths to (check one): x inches ☐ cm — Mottling (seasonal watertable)	Bedrock	Firm or Restrictive Layer	Limit of Exploration	Ground Surface Slope (%)
2[1]	HTP101	X	Skerry gr. sandy loam, stony, 3C	19	N.O. [2]	15	29	SEE
2	HTP102	X	Becket gr. sandy loam, stony, 3C	N.O.	N.O.	17	31	SITE
2	HTP103	X	Becket very fine sandy loam variant, stony, 3C	N.O.	N.O.	31	31	PLAN
1[3]	HTP104	X	Becket fine sandy loam, 3C	N.O.	N.O.	15	26	
2	HTP105	X	Becket gravelly sandy loam, 3D	N.O.	N.O.	12	21	
2	HTP106	X	Becket gravelly sandy loam, 3C	N.O.	N.O.	15	25	
2	HTP107	X	Becket stony fine sandy loam, 3D	N.O.	N.O.	12	26	
1	HTP108	X	Becket fine sandy loam, 3C	N.O.	N.O.	26	29	
3[4]	HTP201	X	Hermon fine sandy loam, md, stony, 2AIII	N.O.	27	N.O.	27	
3	HTP202	X	Waumbek fine sandy loam, md, stony, 2AIII/C	18	25	N.O.	25	
2	HTP203	X	Hermon fine sandy loam, md, stony, 2AIII	N.O.	26	N.O.	26	
2	HTP204	X	Hermon fine sandy loam, md, stony, 2AIII	N.O.	31	N.O.	31	
2	HTP205	X	Skerry fine sandy loam, stony, 3C	21	N.O.	21	39	
2	HTP206	X	Hermon sandy loam, stony, 2C	N.O.	N.O.	N.O.	41	
2	HTP207	X	Becket fine sandy loam, stony, 3C	N.O.	N.O.	18	26	
2	HTP208	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	21	17	21	
2	HTP209	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	28	19	28	
3	HTP210	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	22	17	22	
3	HTP211	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	27	15	27	
3	HTP212	X	Skerry loam variant, md, stony, 3AIII/D	20	29	14	29	
			1, 2, 3, 4 = Please refer to Page 4 of the Soil Conditions Summary Table for explanation of these codes					

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: *David W. Moyse* Date: 1-7-25

Name Printed/typed: **David W. Moyse** Cert/Lic/Reg. # **LSES264/CSS195**

Title: ◂ Licensed Site Evaluator ☐ Certified Soil Scientist ☐ Certified Geologist ☐ Other:



FORM E 2/02

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Hammond Ridge Development	**Hammond Ridge Development, LLC**	**T1 R8 WELS, Maine**

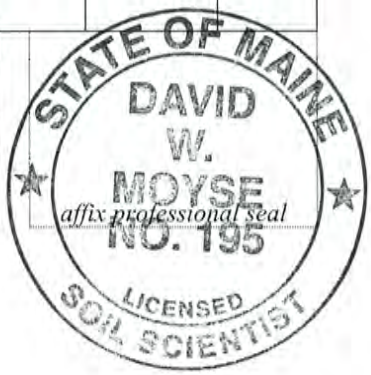
Lot No.	Exploration Symbol (TP 1, B 2, etc.)	■ or ● if at SSWD Field	Description of subsurface materials: ● Soil profile/condition (if by S.E.), ● Soil series name (if by C.S.S.), or ● Geologic unit (if by C.G.)	Depths to (check one): x inches ☐ cm				Ground Surface Slope (%)
				Mottling (seasonal watertable)	Bedrock	Firm or Restrictive Layer	Limit of Exploration	
3	HTP213	X	Skerry loam variant, md, stony, 3AIII/C	17-18	24	19	24	SEE
3	HTP214	X	Hermon fine sandy loam, md, stony, 2AIII	N.O.	32	N.O.	32	SITE
3	HTP215	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	24	17	24	PLAN
3	HTP216		Westbury sandy loam, md, stony	9	22	17	22	
2	HTP217	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	23	17	23	
1	HTP218	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	30	21	30	
1	HTP219	X	Skerry fine sandy loam, md, stony, 3AIII/C	21	29	21	29	
1	HTP220	X	Becket fine sandy loam, shallow, stony, 3AIII/D	N.O.	18	12	18	
1	HTP221	X	Becket fine sandy loam, stony, 3C	N.O.	N.O.	15	26	
1	HTP222	X	Hermon fine sandy loam, md, stony, 2AIII	N.O.	31	N.O.	31	
1	HTP223	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	21	16	21	
1	HTP224	X	Becket fine sandy loam, md, stony, 3C	N.O.	20	16	20	
2	HTP225		Westbury fine sandy loam, stony	15	N.O.	17	41	
2	HTP226		Westbury fine sandy loam, stony	15-17	N.O.	22	38	
2	HTP227		Skerry fine sandy loam	21	N.O.	25	36	

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: *David W. Moyse* Date: 1-7-25

Name Printed/typed: **David W. Moyse** Cert/Lic/Reg. # **LSES264/CSS195**

Title: ◖ Licensed Site Evaluator ☐ Certified Geologist ◖ Certified Soil Scientist ☐ Other:



FORM E 2/02

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Hammond Ridge Development	**Hammond Ridge Development, LLC**	**T1 R8 WELS, Maine**

Lot No.	Exploration Symbol (TP 1, B 2, etc.)	■ or 🚗 if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition (if by S.E.), ● Soil series name (if by C.S.S.), or by ● Geologic unit (if by C.G.)	Depths to (check one): x inches ☐ cm Mottling (seasonal watertable)	Bedrock	Firm or Restrictive Layer	Limit of Exploration	Ground Surface Slope (%)
3	HTB201	X	Hermon fine sandy loam, md, stony, 2AIII	N.O.	23	N.O.	23	SEE
3	HTB202	X	Waumbek sandy loam, md, stony, 2AIII/C	18	23	N.O.	23	SITE
3	HTB203		Waumbek sandy loam, md, stony	18	23	N.O.	23	PLAN
1	HTB204	X	Becket fine sandy loam, stony, 3C	N.O.	N.O.	19	21	
1	HTB205	X	Becket fine sandy loam, stony, 3C	N.O.	N.O.	14	14	
1	HTB206	X	Becket fine sandy loam, stony, 3C	N.O.	N.O.	17	23	
1	HTB207	X	Becket fine sandy loam, stony, 3C	N.O.	N.O.	18	23	
1	HTB208	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	24	18	24	
1	HTB209	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	20	15-16	20	
2	HTB211	X	Hermon fine sandy loam, md, stony, 2AIII	N.O.	22	N.O.	22	
2	HTB212	X	Hermon loam variant, md, stony, 2AIII	N.O.	23	N.O.	23	
2	HTB213	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	35	18	35	
1	HTB214	X	Becket fine sandy loam, md, stony 3AIII/C	N.O.	20	16	20	
1	HTB215	X	Becket fine sandy loam, md, stony, 3AIII/C	N.O.	22	17	22	
1	HTB216	X	Becket fine sandy loam, md, stony 3AIII/C	N.O.	22	17	22	
3	HTB216 A		Canaan fine sandy loam, stony	N.O.	20	N.O.	20	
3	HTB217		Canaan fine sandy loam, stony	N.O.	19	N.O.	19	
3	HTB218		Canaan fine sandy loam, stony	N.O.	18	N.O.	18	
3	HTB219		Skerry fine sandy loam, md, stony	17	23	18	23	
3	HTB220		Canaan fine sandy loam, md, stony	N.O.	28	N.O.	28	
3	HTB221		Canaan fine sandy loam, stony	N.O.	20	N.O.	20	
3	HTB222		Becket fine sandy loam, md, stony	N.O.	30	20	30	
3	HTB223		Canaan sandy loam, md, stony	N.O.	25	N.O.	25	
3	HTB223 A		Canaan sandy loam, stony	N.O.	20	N.O.	20	
3	HTB224		Canaan fine sandy loam, md, stony	N.O.	23	N.O.	23	
3	HTB225		Canaan fine sandy loam, stony	N.O.	19	N.O.	19	

INVESTIGATOR INFORMATION AND SIGNATURE

Signature:	Date: 1-7-25
Name Printed/typed: **David W. Moyse**	Cert/Lic/Reg. # **LSE264/CSS195**
Title: ◖ Licensed Site Evaluator ☐ Certified Geologist	◖ Certified Soil Scientist ☐ Other:

STATE OF MAINE DAVID W. MOYSE NO. 195 LICENSED SOIL SCIENTIST

affix professional seal

FORM E 2/02

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Hammond Ridge Development	**Hammond Ridge Development, LLC**	**T1 R8 WELS, Maine**

Lot No.	Exploration Symbol *(TP 1, B 2, etc.)*	■ or 📷 if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition *(if by S.E.)*, ● Soil series name *(if by C.S.S.)*, or by ● Geologic unit *(if by C.G.)*	Depths to *(check one)*: x inches ☐ cm — Mottling *(seasonal watertable)*	Bedrock	Firm or Restrictive Layer	Limit of Exploration	Ground Surface Slope *(%)*
3	HTB226		Canaan fine sandy loam, md, stony	N.O.	26	N.O.	26	SEE
2	HTB228		Skerry fine sandy loam	16	N.O.	25	41	SITE
2	HTB229		Skerry fine sandy loam	27	N.O.	30	40	PLAN
			2^1 = "Area 2" on Exhibit D 1					
			N.O. ^{2} = Not observed					
			1^3 = "Area 1" on Exhibit D 1					
			3^4 = "Area 3" on Exhibit D 1					
			md = Moderately deep					

STATE OF MAINE DAVID W. MOYSE NO. 195 LICENSED SOIL SCIENTIST

INVESTIGATOR INFORMATION AND SIGNATURE

Signature:	Date: 1-7-25
Name Printed/typed: **David W. Moyse**	Cert/Lic/Reg. # **LSE264/CSS195**

Title: ◖ Licensed Site Evaluator ☐ Certified Geologist ◖ Certified Soil Scientist ☐ Other:

STATE OF MAINE DAVID W. *affix professional seal* NO. 195 LICENSED SOIL SCIENTIST

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # TP101 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

50 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/6	grav SL	gran	vfr	
Bs1	10YR 3/6	cobb SL	↓	friable	none
Bs2	10YR 4/6	↓	↓	↓	↓
BC	10YR 5/4	cobb L	abk		
C	2.5Y 6/3	cobb SL	massive	firm	10YR 4/6
		LLI = 50" / excav dwg			

Soil Details

Soil Series/Phase Name: Skerry grav SL

Limiting Factor: 24" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # L02 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

55 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 5/3	SL	gran	vfr	
Bs1	10YR 3/6	↓	↓	fr	none
Bs2	7.5YR 4/6	↓	↓	fr/corn	↓
BC	10YR 5/4	loam	platy	firm	7.5YR 5/6
C	2.5Y 6/3	bould SL	platy-ma	vfirm	
		LLI = 55" / excav dwg			

Soil Details

Soil Series/Phase Name: skerry sandy loam

Limiting Factor: 19" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 103 — ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	SL	gran	vfr	none
Bs	7.5YR 4/6	cobb SL	platy	friable	10YR 4/6
BC	10YR 5/4	↓	↓	↓	↓
C	2.5Y 5/3	↓	platy-ma	vfirm	
		LLI = 60" / excav dwg			

Soil Details

Soil Series/Phase Name: Westbury SL

Limiting Factor: 13" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 104 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

70 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 5/3				
Bhs	7.5YR 4/6	SL	gran	vfr	none
Bs	10YR 3/6	↓	abk	fr	
BC	10YR 5/4	↓		firm	10YR 5/6
C	2.5Y 5/3	stony SL	massive	vfirm	↓
		LLI = 70" / excav dwg			

Soil Details

Soil Series/Phase Name: skerry sandy loam

Limiting Factor: 16" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 105

☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

40 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	cobb SL	gran	vfr	none
Bs	7.5YR 4/6	↓	↓	↓	↓
BC	10YR 4/6	↓	abk	fr	10YR 4/6
C	2.5Y 6/3	↓	abk/ma	firm	↓

LL = 40" / refusal / lg rocks?

excav dug

Soil Details

Soil Series/Phase Name: Skerry cobb SL

Limiting Factor: 18 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 106

☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

48 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	stony fsl	gran	vfr	rare
Bs	7.5YR 4/6	↓	↓	↓	↓
BC	10YR 5/4	cobb fsl	platy	fr	10YR 4/6
C	2.5Y 6/3	↓	platy/ma	firm	↓

LL = 48" excav dug

Soil Details

Soil Series/Phase Name: Waumbek stonySL

Limiting Factor: 25 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 107

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	10YR 6/2	St. fsl			
Bs1	10YR 3/6	cobbl fsl	gran	vfr	none
Bs2	10YR 5/6	St SL	↓	↓	↓
BC	10YR 5/4	↓	platy	fr	10YR 4/4
C	2.5Y 5/3	↓	platy/ma	firm	↓

LL = 60" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek stonySL

Limiting Factor: 23 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 108

☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	St fsl	gran	vfr	
Bs1	7.5YR 4/6	↓	↓	fr	none
Bs2	10YR 4/6	St SL	↓	↓	↓
BC	10YR 5/4	↓	abk	↓	10YR 5/6
C	2.5Y 6/3	↓	massiv	firm	↓

LL = 60" / excav dug

Soil Details

Soil Series/Phase Name: Skerry St. fsl

Limiting Factor: 20 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

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FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 109 — ☒ Test Pit ☐ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

60" Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 5/3,	b fsl	gran	vfr	
Bs1	7.5YR 4/6	st fsl			none
Bs2	10YR 4/6				
BC	10YR 5/4	cb fsl	abk	firm	10YR 5/6
C	2.5Y 6/3		abk/ ma		

LL1 = 60" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek b. fsl

Limiting Factor: 22" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 110 — ☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

55 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	stony fsl	gran	vfr	none
Bs	7.5YR 4/6				
BC	10YR 5/4	cb fsl	abk	fr	10YR 4/4
C	2.5Y 6/3		massiv	firm	

LL1 = 55" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek st. fsl

Limiting Factor: 21" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 111 — ☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

70 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs1	10YR 3/6	cb SL	gran	vfr	none
Bs2	7.5YR 4/6				
BC	10YR 5/4	stony SL	abk	fr	10YR 4/6
C	2.5Y 5/3		abk/ ma	firm	

LL1 = 70" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek cb SL

Limiting Factor: 19" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 112 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

70 " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	5YR 4/4	stony fsl	gran	vfr	none
BC	2.5YR 5/4	stony SL	abk	(cem)	10YR 4/6
C	2.5Y 5/3	ccbb SL (pockets silo)	massiv	firm	

LL1 = 70" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek st. fsl

Limiting Factor: 18" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
(Signature)

Johanna E Szillery
Name Printed

1/2/2025
Date

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NO. SS494

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FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 113

☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	5YR 4/4	stony fsl	gran	vfr	none
BS	7.5YR 4/6	stony SL	abk → gran	fr cem	none
BC	10YR 5/6			firm cem	10YR 5/6
C	2.5Y 6/3		massiv	firm	

LL = 60" / excav

Soil Details

Soil Series/Phase Name: Waumbek St. fsl

Limiting Factor: 23 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 114

☐ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/2				
Bhs	7.5YR 5/6	cobb SL	gran	very friable	none
BS	10YR 5/4				
BC	10YR 5/6		abk	fr	
C	2.5Y 5/3		ma	firm	7.5YR 4/6

LL = 55" / excav

Soil Details

Soil Series/Phase Name: Waumbek cob fsl

Limiting Factor: 27 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 115

☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/1	stony fsl	gran	vfr	none
Bhs	7.5YR 4/4				
BS	10YR 4/6	cob fsl		fr	

LL = 16" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 116

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/1	stony fsl	vfr	gran	none
Bhs	7.5YR 5/4				
BS	10YR 5/3				

LL = 17" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
(Signature)

Johanna E Szillery
Name Printed

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 117

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs	10YR 3/4	cobb fsl	gran	vfr	none
Bs2	10YR 4/6	↓	↓	fr	(assume)
BC					

LLI = 15" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: 12 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 118

☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	very stony fsl	gran	vfr	none
Bs1	7.5 4/6	↓	↓	↓	↓
Bs2	↓	↓	↓	↓	↓

LLI = 15" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 119

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	st fsl	gran	vfr	none
Bs	10YR 4/6	st l	↓	↓	↓

LLI = 17" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 120

☒ Test Pit ☐ Boring ☐ Probe

5 " Organic horizon thickness Ground surface elev. ____

20 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/4	v stony fsl	gran	vfr	none
Bs	7.5YR 4/6	↓	↓	↓	↓

LLI = 20" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
(Signature)

Johanna E Szillery
Name Printed

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Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 121 — ☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

20 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	very stony fsl	gran	vfr	none
BS	10YR 4/6	LLI = 20"/excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 122 — ☒ Test Pit ☐ Boring ☐ Probe

8 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/2	v. stony fsl	vfr	gran	none
Bhs	7.5 4/4				
BS	10YR 3/6	LLI = 16" / excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 123 — ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	cobb SL	gran	fr	none
BS	10YR 4/6	LLI = 17"/excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 124 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

20 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	b SL	gran	fr	none
BS1	7.5YR 4/6	st. fsl			
BS2	10YR 5/4	LLI = 20"/excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

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Signature

Johanna E Szillery
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 125

☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

21 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	stony	gran	vfr	none
Bs	7.5YR 4/6	SL	↓	↓	↓
		LL = 21" / excavator dug			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 126

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/3	stony	gran	vfr	none
Bs	7.5YR 5/4	fsl	↓	↓	↓
Bs2	10YR 4/6	↓	abk	↓	↓
		LL = 17"/ excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 127

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

21 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	10YR 6/2	sand	gran	vfr	none
Bhs	7.5YR 4/4	↓	↓	↓	↓
Bs	10YR 4/6	SL	↓	↓	↓
		LL = 21" / excav dug			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 128

☒ Test Pit ☐ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	cobb	gran	vfr	none
Bs	7.5Y 5/4	SL	↓	↓	↓
Bs2	10YR 5/4	↓	↓	↓	↓
		LL = 18" / excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 129

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

19 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	loam	gran	vfr	none
Bs	7.5 4/4			↓	
Bs2	10YR 5/4	fsl			
BC	2.5Y 6/3		abk	fr	assumed

LLI = 19" / auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: 16 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 130

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/4	grav SL	gran	vfr	none
Bs	10YR 3/6				
BC	10YR 4/6	↓	abk	↓	↓

LLI / refusal = 16" auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 131

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

25 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	10 6/2				
Bhs	7.5 4/4	grav	gran	vfr	none
Bs	10YR 5/4	fsl	↓	↓	↓
BC	10YR 6/4	↓	abk	fr	mott

LLI = 25" / auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: 21 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 132

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

19 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	grav	gran	vfr	none
Bs	7.5 4/6	fsl	↓	↓	↓
BC	2.5Y 6/3	↓	↓	fr	assume

LLI = 19" / auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: 17 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 133 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 5/3	SiL	gran	vfr	
Bhs	5/4 5/3				
Bs	7.5YR 5/4	SiL fsl	abk	fr	none
			↓	↓	↓
		LLI = 15" / auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 134 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs1	7.5YR 4/6				
Bs2	10 5/4	grav L	gran	vfr	none
					↓
BC	10 5/3	grav fsl	abk	fr	assume
	LLI = 17" / refusal auger				

Soil Details

Soil Series/Phase Name:

Limiting Factor: 15 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 135 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	10 6/2				
Bhs	7.5 4/4	gr fsl	gran	v fr	none
Bs	10YR 4/6	cb fsl	↓	fr ↓	↓
	LLI =	17" auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 136 — ☐ Test Pit ☒ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/2	gravL	gran	v fr	
Bh	5 3/4		↓		none
Bhs	7.5 4/6	gr fsl	↓	fr	↓
	LLI = 13" / refusal auger				

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 137 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	vfr	none
Bs	10YR4/6	gr SL	↓	↓	↓

LLI = 13" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 138 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

12 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/3	gr SL	gran	vfr	none
Bs	7.5 4/6	↓	↓	↓	↓

LLI = 12" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 139 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	gr L	gran	vfr	none
Bs	10YR4/6	grav fsl	abk	fr	↓
Bs2	10YR5/6	↓	↓	↓	↓

LLI = 16" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 140 ☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/3	fsl	gran	vfr	none
Bhs	7.5 4/4	↓	↓	↓	↓
Bs	10 4/6	gr SL	↓	↓	↓

LLI = 14" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 141 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	10 6/2	grav fsl	gran	vfr	none
Bhs	7.5 4/4				
Bs	10 4/6		abk		
		LL1=	13" / refusal		
			auger		

Soil Details: Soil Series/Phase Name: | Limiting Factor NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☒ No ☐ Yes | Hydrologic Soil Group

Exploration Symbol # 142 ☐ Test Pit ☒ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	7.5 3/2	muck vgrav SiLo	ma	fr/sat	none
Bw	10 5/1	vgrav +cb SiLo			
		LL1=	18" / auger		

Soil Details: Soil Series/Phase Name: Brayton silo | Limiting Factor 0 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☐ No ☒ Yes | Hydrologic Soil Group

Exploration Symbol # 143 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 5/3	gr SL	gran	vfr	none
Bs	10 3/6	gr fsl			
		LL1=	14"/refusal		
			auger		

Soil Details: Soil Series/Phase Name: | Limiting Factor NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☒ No ☐ Yes | Hydrologic Soil Group

Exploration Symbol # 144 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

23 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl			
Bs	10 3/6	grav	gran	vfr	none
Bs2	10YR 4/6	fsl		fr	matt
		LL1=	23" / refusal		
			auger		

Soil Details: Soil Series/Phase Name: | Limiting Factor 13 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☒ No ☐ Yes | Hydrologic Soil Group

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SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 145

☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs1	10YR 3/6	fsl	gran	vfr	none
Bs2	10YR 4/6	grav fsl	↓	fr	mott
		LL1=18" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: 13 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 146

☐ Test Pit ☒ Boring ☐ Probe

5 " Organic horizon thickness Ground surface elev. ____

12 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 5/3	v. grav SL	gran ↓	vfr ↓	none ↓
		LL1=12" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 147

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

11 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	cb fsl	gran	vfr	none
		LL1=11" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 148

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

11 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	fr	none
Bs	7.5 4/6	grav fsl	↓	↓	↓
		LL1=11" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 149

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

10 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	grav fsl	gran	fr	none
Bs	7.5 5/6				
		LLI = 10" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 150

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	grav fsl	gran	fr	none
Bs	7.5 4/6				
		LLI = 13" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 151

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	fr	none
Bs	10YR 4/6	grav fsl	↓	↓	↓
		LLI = 14" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 152

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

9 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	10.6/2	fsl	gran	fr	none
Bhs	7.5 4/4	L	↓	↓	↓
		LLI = 9" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

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FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 153

☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/3	grav fsl	gran	fr	none
Bs1	7.5 4/6	↓	↓	↓	↓
Bs2	7.5 5/6	↓	↓	↓	↓

LLI = 13" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 154

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E Bhs	7.5 4/3	fsl	gran	vfr	none
Bs	7.5 4/6	grav fsl	↓	↓	↓

LLI = 14" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 155

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

22 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	gr fsl	gran	vfr	none
Bs	10YR 4/6	gr sl	↓	↓	↓

LLI = 22" auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 156

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	fsl	gran	vfr	none
Bs	10 4/6	grav fsl	↓	↓	↓

LLI = 16" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
(Signature)

Johanna E Szillery
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FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 157 — ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

9 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/6	fsl	gran	vfr	none
Bs	10YR 5/6	gr fsl	↓	↓	↓
		LLI = 9"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 158 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

11 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/2	gr SL	gran	vfr	none
Bs	10YR 5/6	gr fsl	↓	↓	↓
		LLI = 11"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 159 — ☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

10 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs	10YR 3/6	fsl	gran	vfr	none
		LLI = 10"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 160 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	fsl	gran	vfr	none
Bs	7.5 4/6	gr L	↓	↓	↓
		LLI = 18"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 161 ☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

22 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	vfr	none
Bs	7.5 5/6	gr fsl	↓	↓	↓
	↓	↓ LL1 = 22"	↓	↓	↓
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 162 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/3	fsl	gran	vfr	none
Bs	7.5 5/6	gr fsl	↓	fr	↓
			LL1 = 15" / refusal		
			auger		

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 163 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

21 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	vfr	
Bs	7.5 4/6	↓	↓	↓	none
Bs2	10 5/4	gr SL	abk	fr	↓
		LL1 = 21" / refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 164 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

8 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs	7.5YR 4/6	fsl	gran	vfr	none
		LL1 = 8" / refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # TP 326 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal (excav)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	gravSL	gran	vfr	
~~BS1~~	7.5YR 4/6	cobb SL			none
BS2					
BC	10YR 5/4	grav SL	abk/ platy	friable	few fine
C	2.5Y 5/3	cobb SL	massive	firm	c+d

LL = 60" / excavator

Soil Details: Soil Series/Phase Name: skerry grav SL

Limiting Factor: 25 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # TP327 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

28 " Depth: ☐ of exploration, or ☒ to refusal (hand)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	grav fsl	gran	vfr	
~~BS1~~	7.5YR 4/6				none
BS2	7.5YR 4/6				
BC	10YR 5/4		abk	fr	few fine

LL = 28" / refusal hand dug

Soil Details: Soil Series/Phase Name:

Limiting Factor: 18 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
Signature

Johanna E Szillery
Name Printed

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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

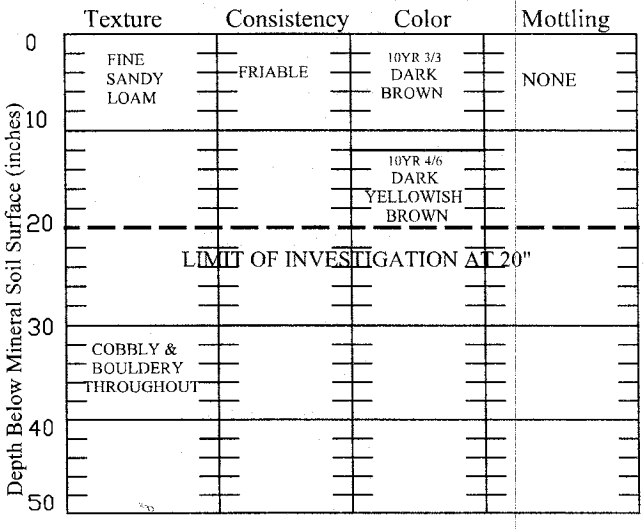
Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 201 ☒ Test Pit (Hand Dug) ☐ Boring

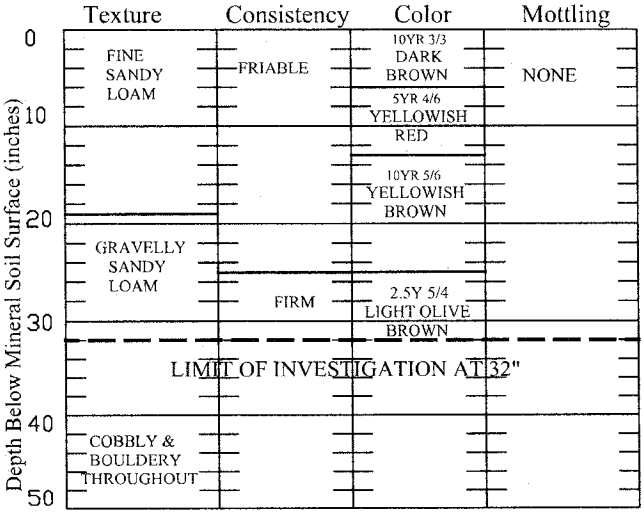
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	20 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 202 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil

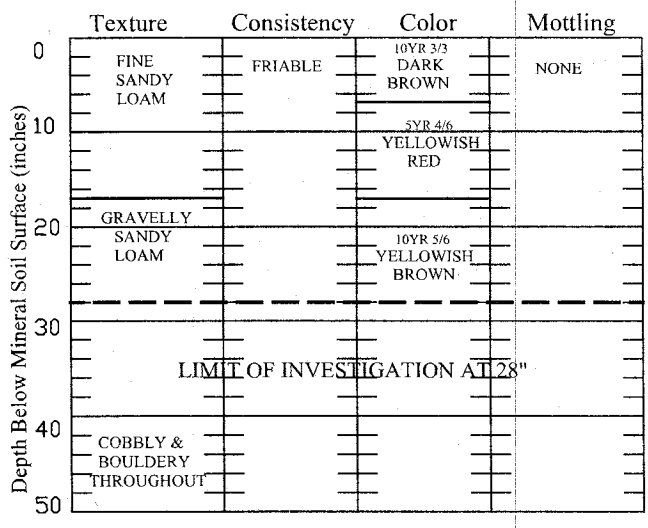


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	25 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 203 ☒ Test Pit (Excavator) ☐ Boring

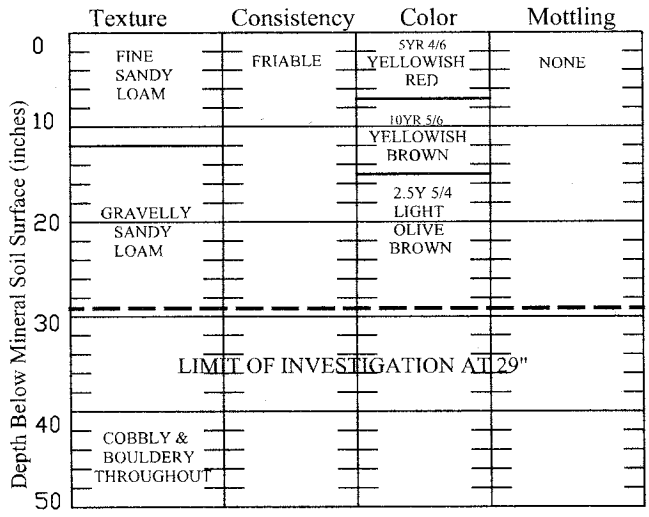
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	28 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 204 ☒ Test Pit (Excavator) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	29 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Astley — Site Evaluator Signature

#408 — SE #

12/22/24 — Date

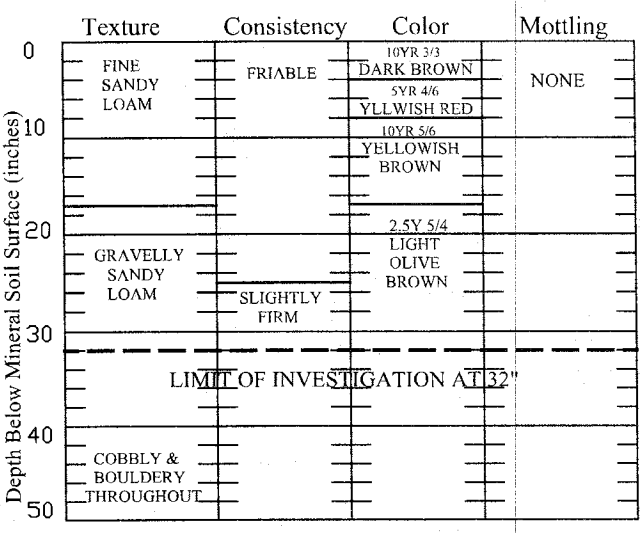
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

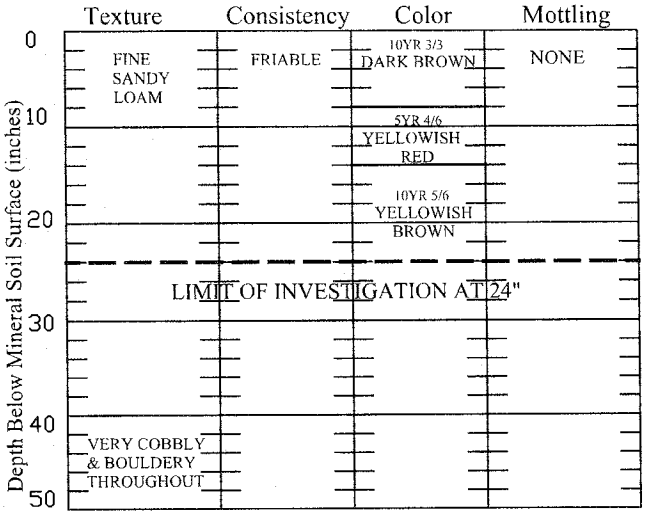
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 205 [x] Test Pit (Excavator) [ ] Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	25 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

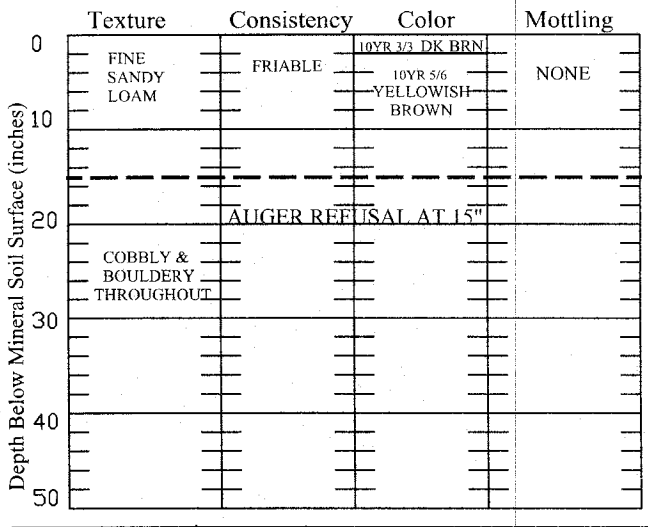
Observation Hole 206 [x] Test Pit (Excavator) [ ] Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	24 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

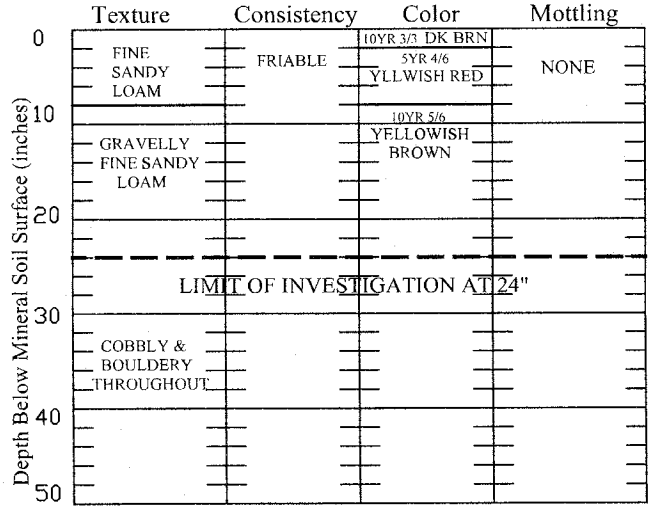
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 207 [x] Test Pit (Hand Dug) [ ] Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 208 [x] Test Pit (Hand Dug) [ ] Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	24 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Site Evaluator Signature	SE #	Date
Sarah Astley	#408	12/22/24

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

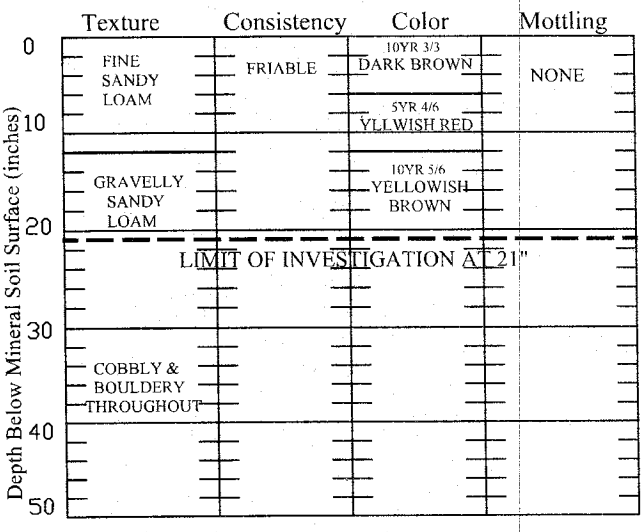
Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 209 ☒ Test Pit (Hand Dug) ☐ Boring

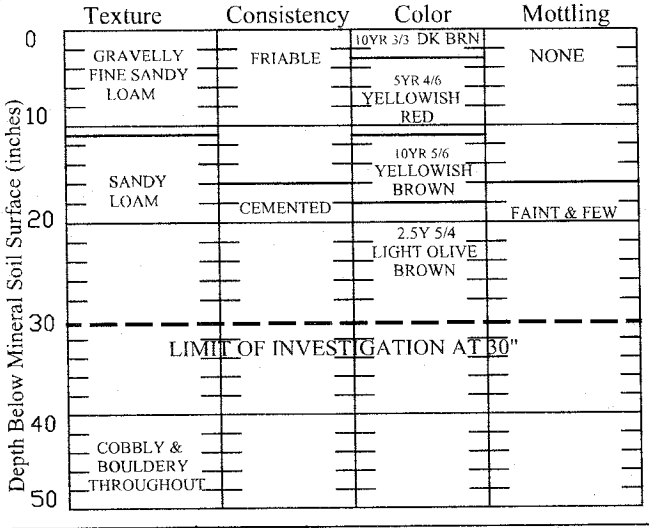
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 210 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil

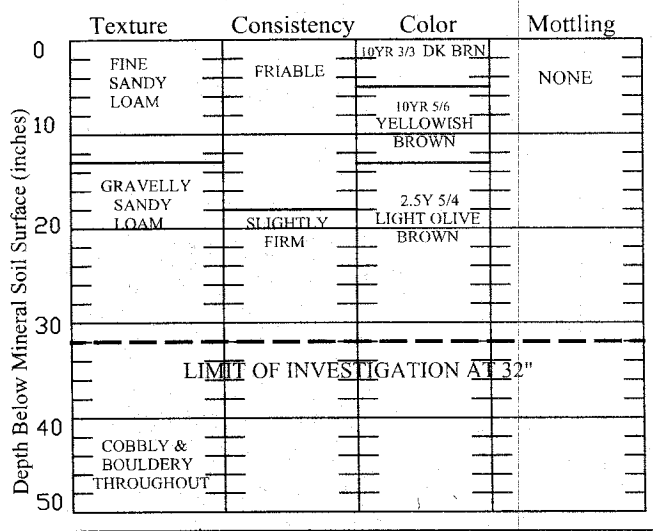


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 211 ☒ Test Pit (Excavator) ☐ Boring

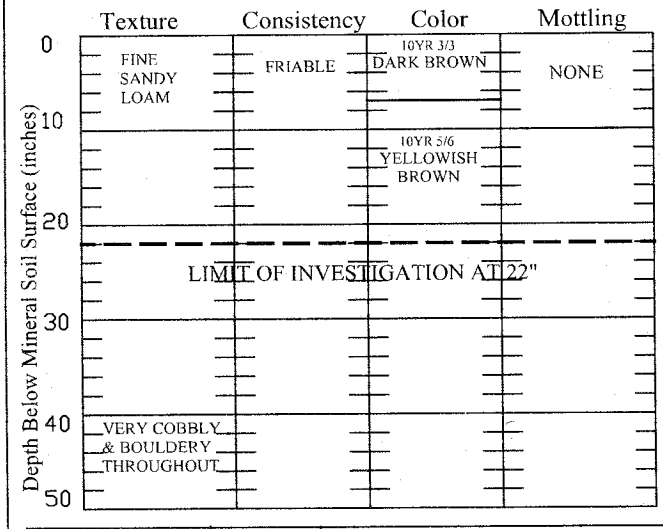
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 212 ☒ Test Pit (Hand Dug) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	22 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

12/22/24 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

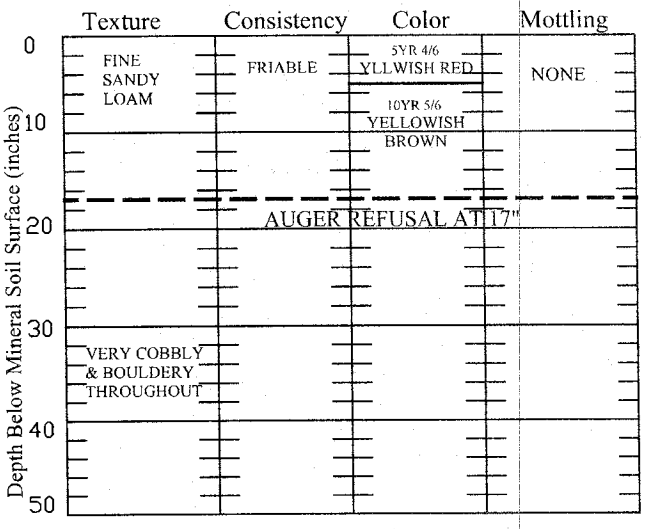
Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 213 ☒ Test Pit (Hand Dug) ☐ Boring

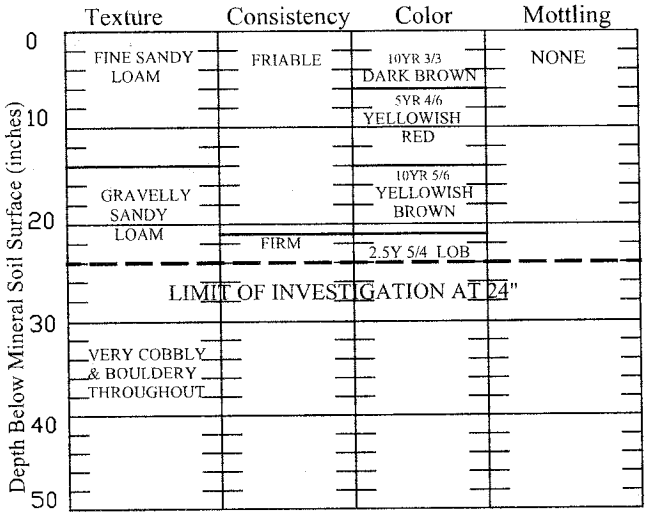
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	17 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 214 ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

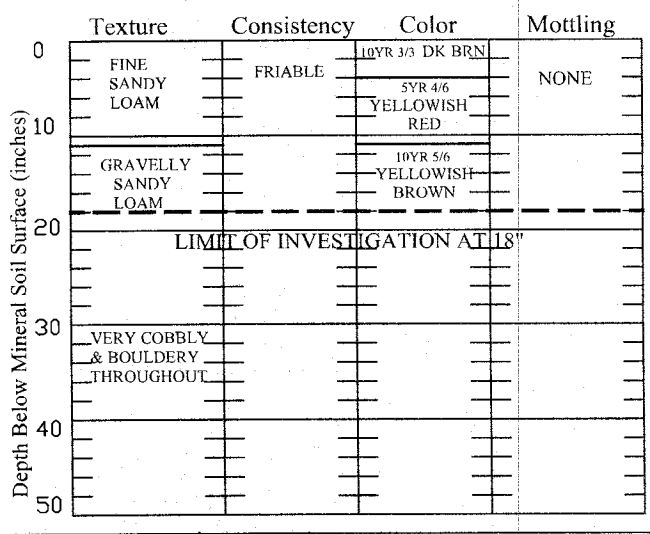


Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	21 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 215 ☒ Test Pit (Hand Dug) ☐ Boring

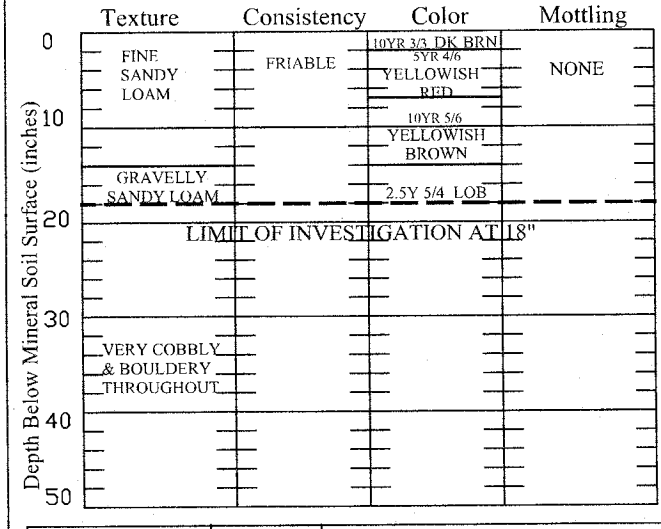
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	18 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 216 ☒ Test Pit (Hand Dug) ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	18 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

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#408 — SE #

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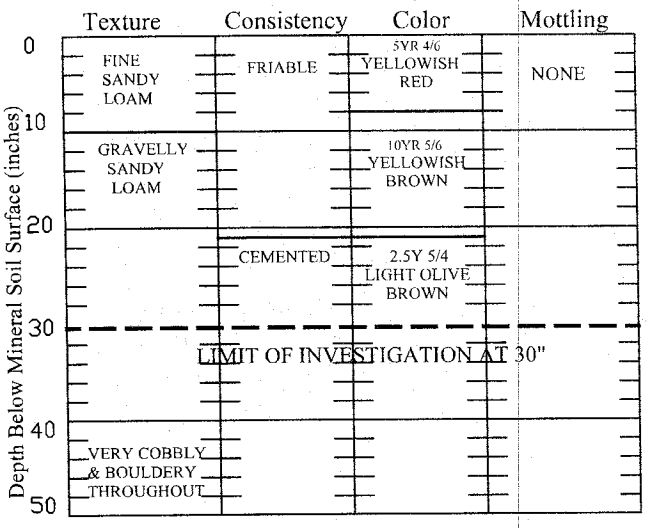
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

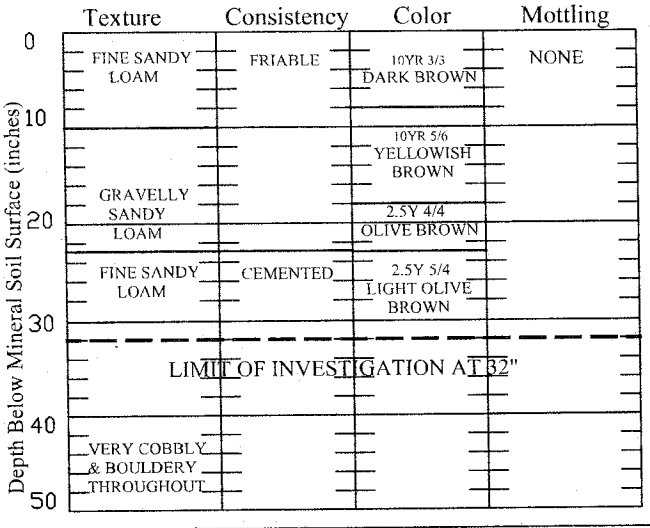
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 217 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	21 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

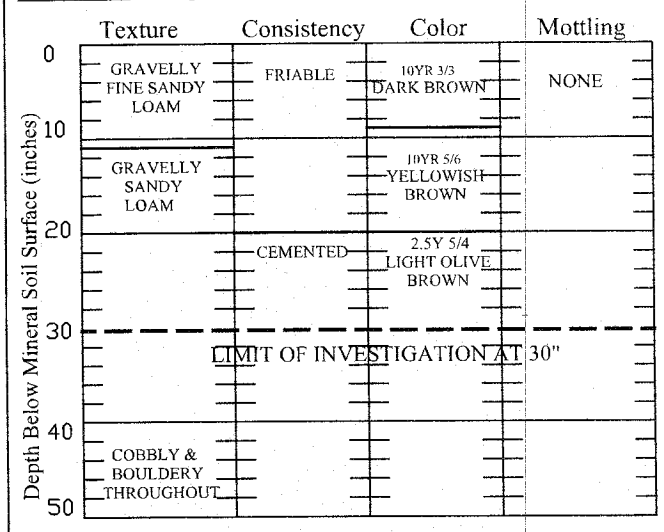
Observation Hole 218 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	23 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

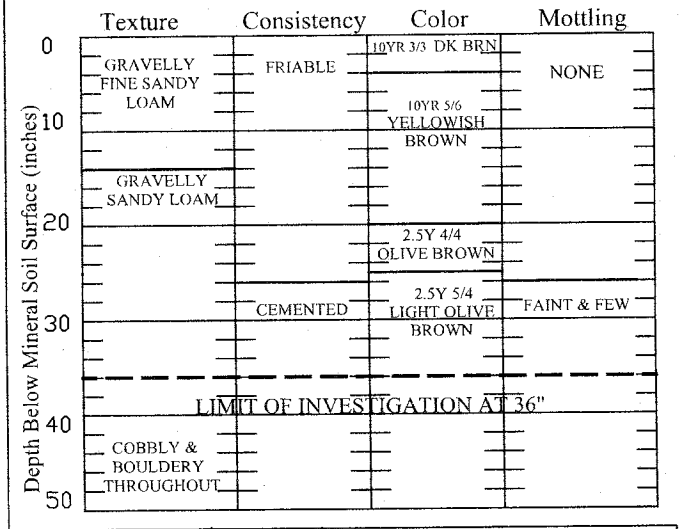
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 219 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 220 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	26 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
12/22/24 — Date

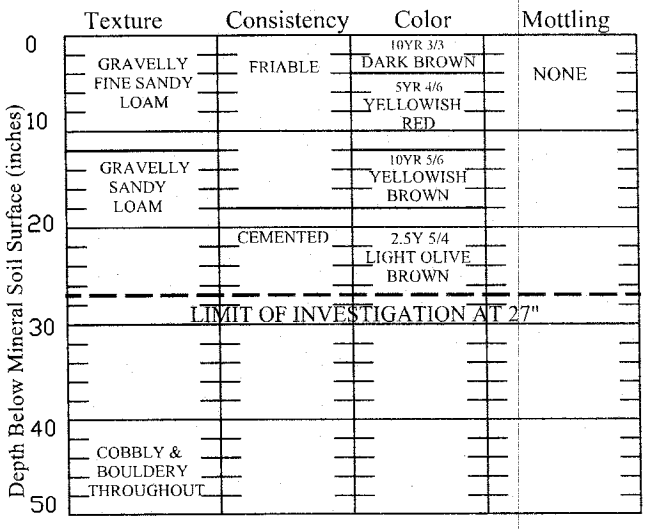
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

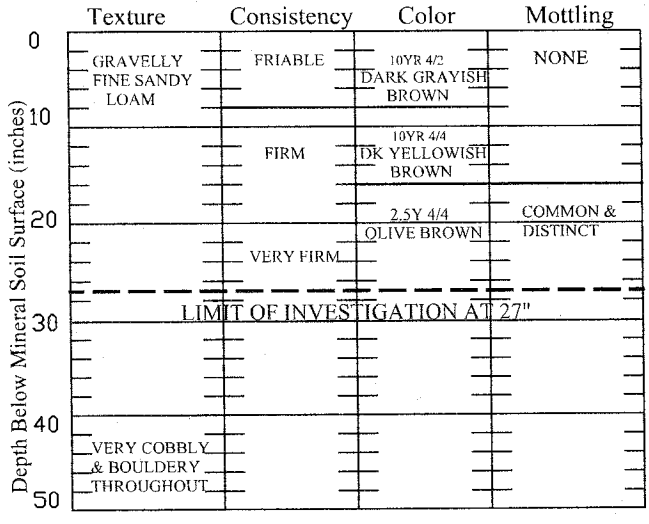
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 221 ☒ Test Pit (Excavator) ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

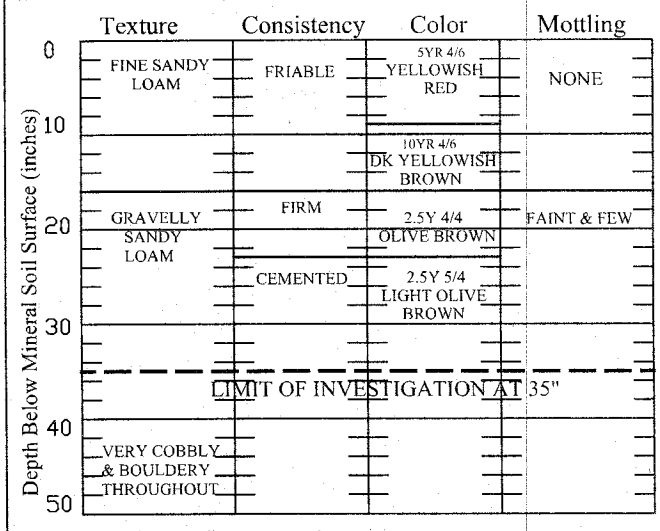
Observation Hole 222 ☒ Test Pit (Excavator) ☐ Boring
12 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / ____ Condition	E %	8 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

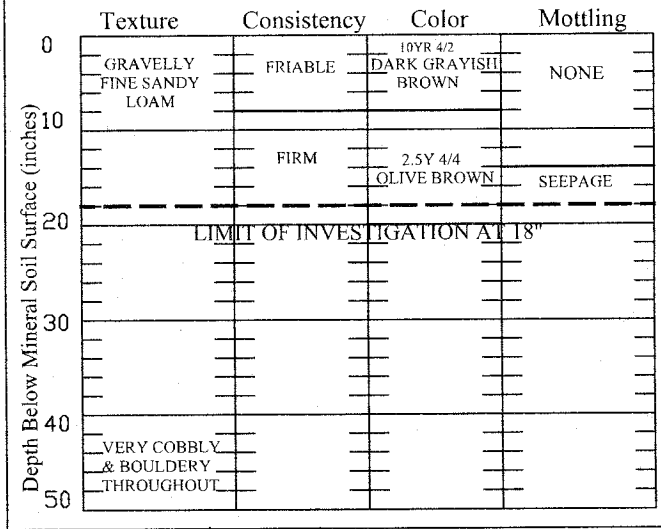
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 223 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 224 ☒ Test Pit (Hand Dug) ☐ Boring
8 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / E Condition	____ %	8 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
12/22/24 — Date

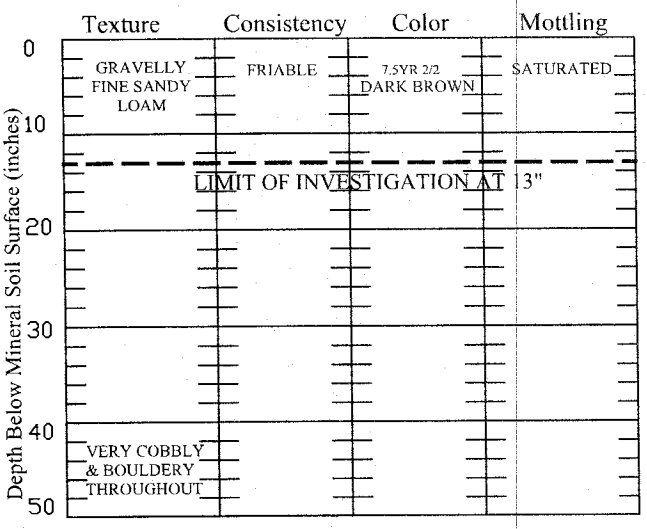
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

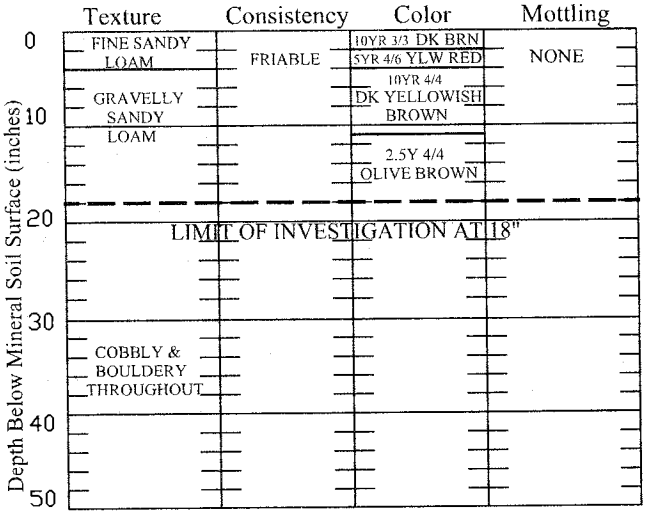
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 225 ☒ Test Pit (Hand Dug) ☐ Boring
12 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

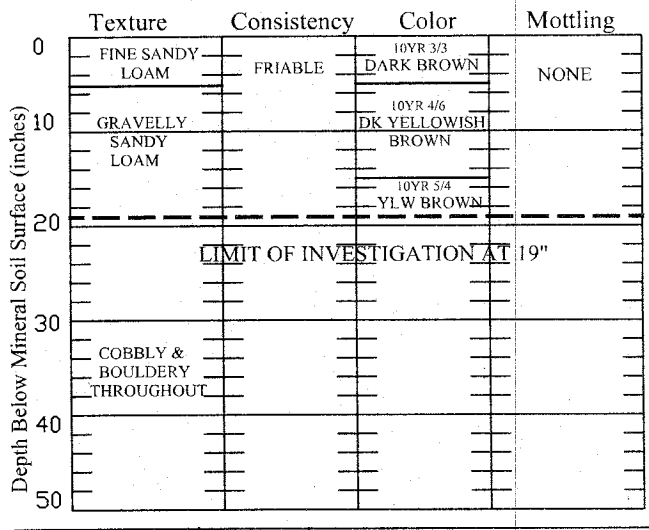
Observation Hole 225.1 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	18 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

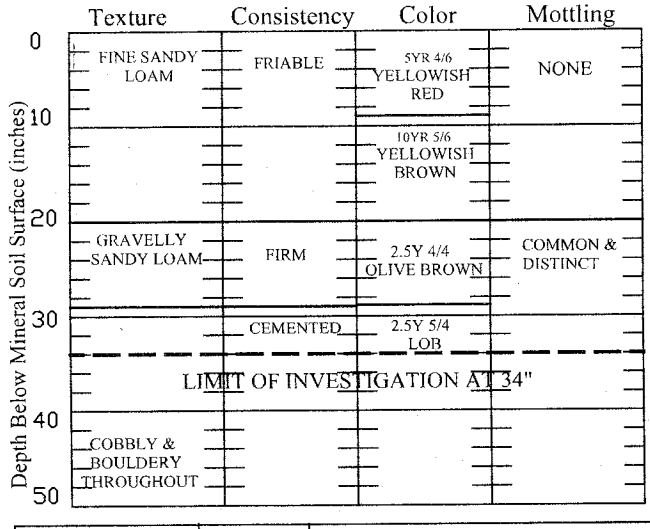
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 226 ☒ Test Pit (Hand Dug) ☐ Boring
5 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	19 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 227 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	20 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
12/22/24 — Date

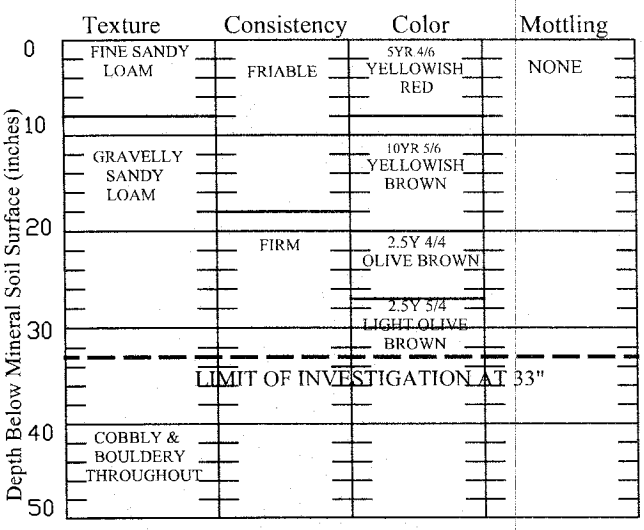
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

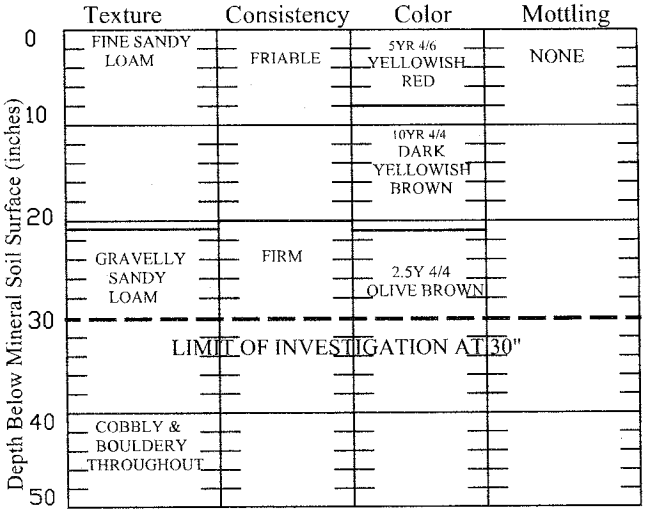
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 228 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

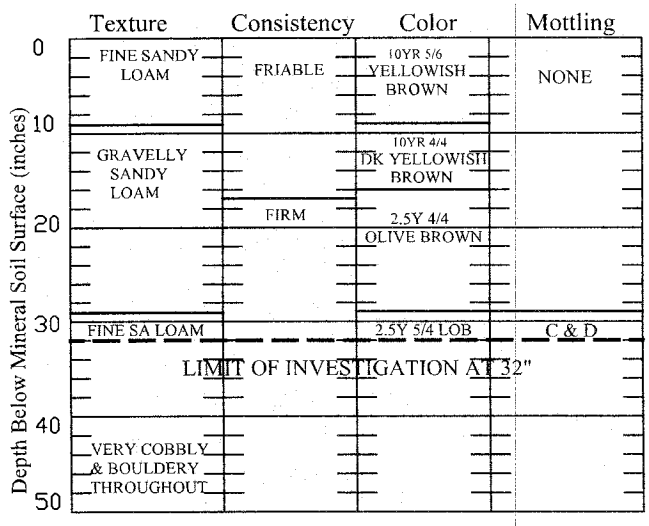
Observation Hole 229 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

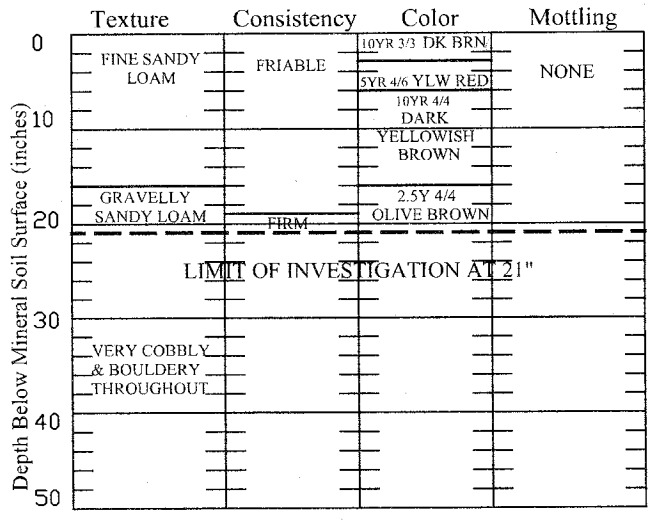
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 230 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	17 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 231 ☒ Test Pit (Hand Dug) ☐ Boring
4 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	19 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Site Evaluator Signature	SE #	Date	
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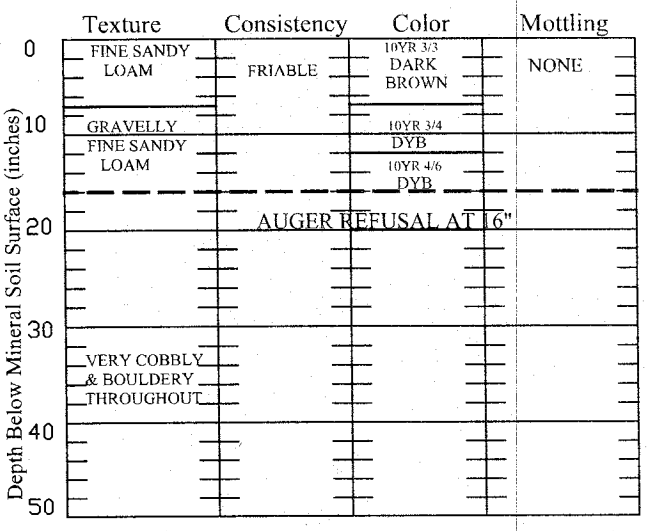
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

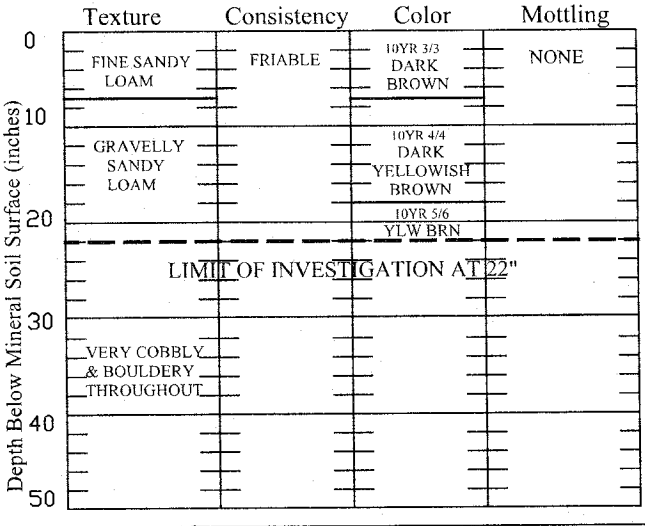
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 232 ☒ Test Pit (Hand Dug) ☐ Boring
5 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	16 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

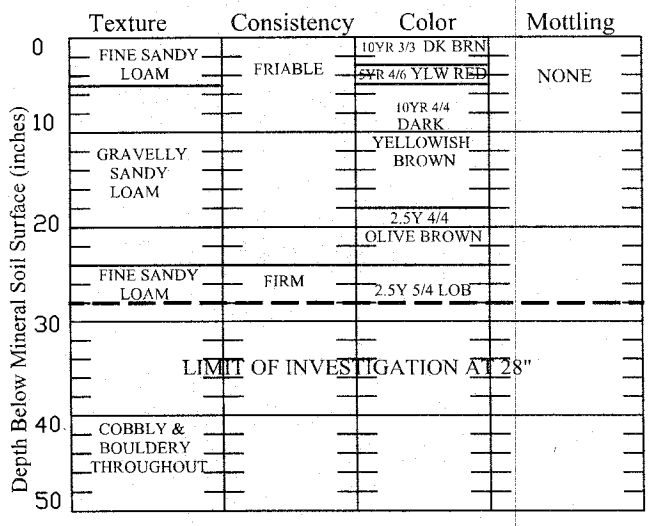
Observation Hole 233 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	22 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

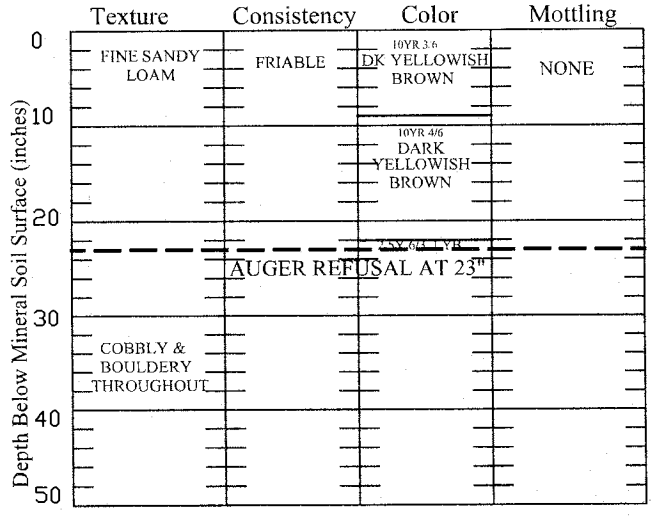
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 234 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 235 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	23 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Site Evaluator Signature | #408 SE # | 12/27/24 Date

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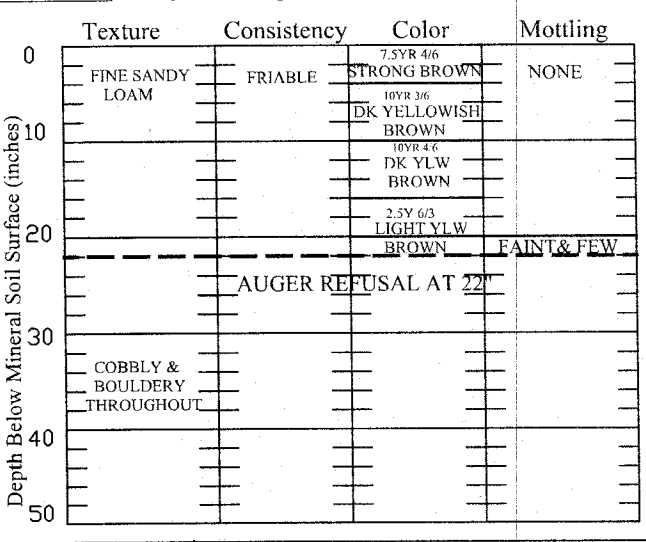
Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

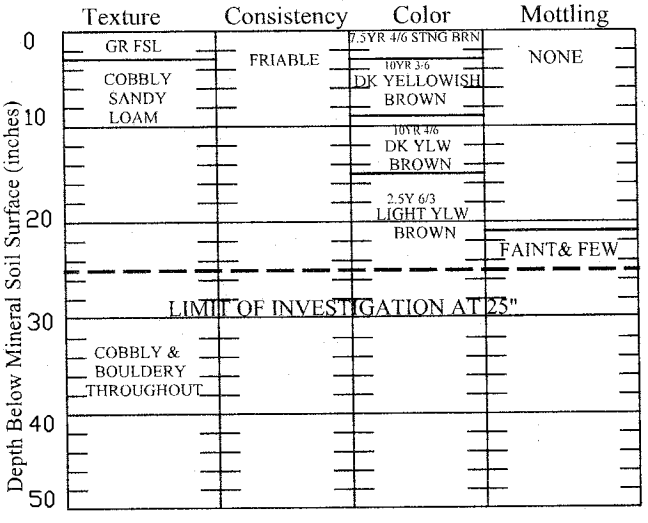
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 236 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	20 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

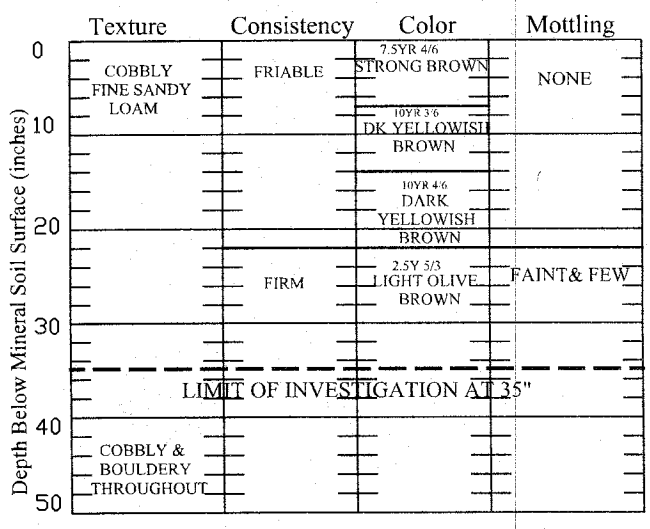
Observation Hole 237 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	21 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

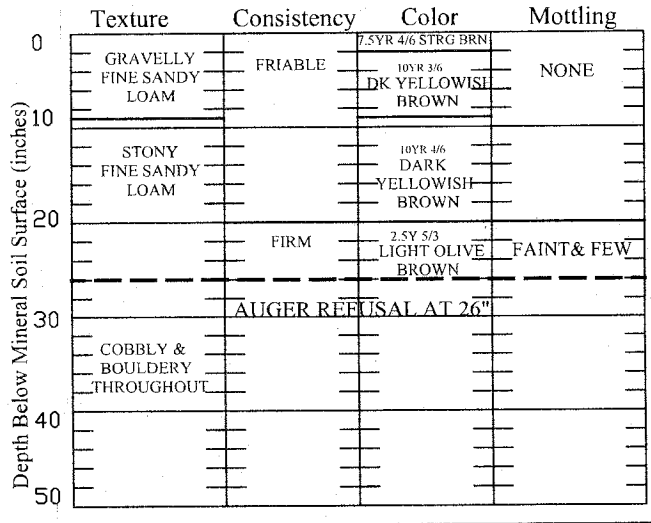
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 238 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	22 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 239 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	20 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
1/5/24 — Date

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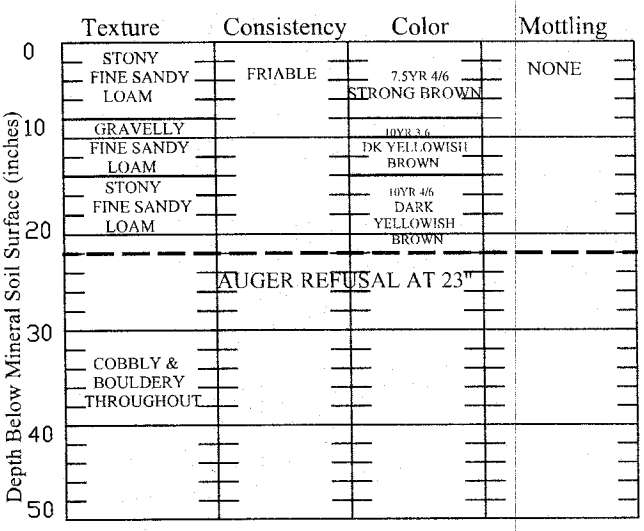
Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

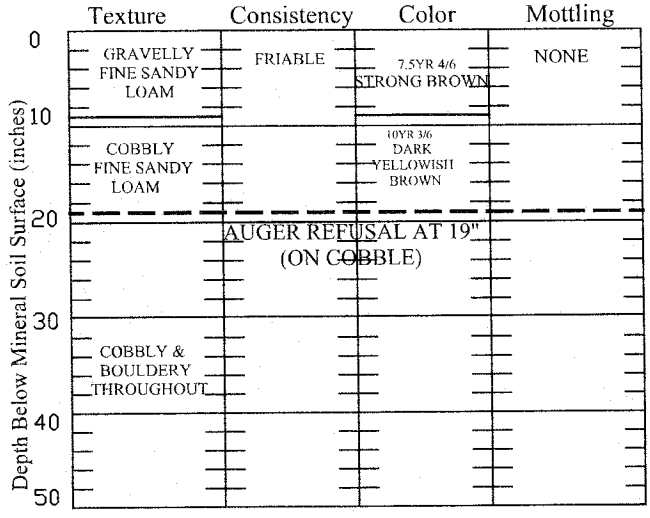
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 240 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	____ %	23 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

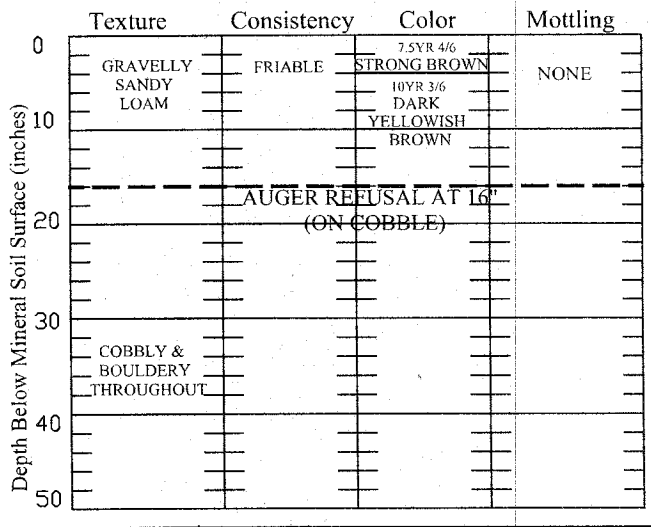
Observation Hole 241 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	____ %	19 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

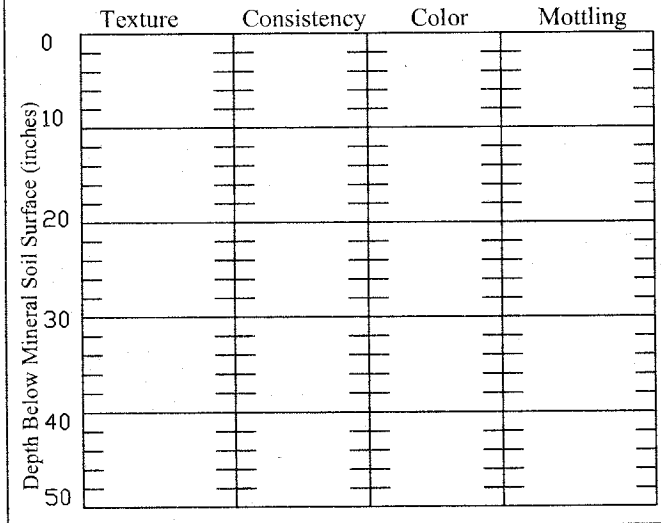
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 242 ☒ Test Pit (Hand Dug) ☐ Boring
0 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	____ %	16 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring
_____ " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
_____ _____ (Profile / Condition)	____ %	____ "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley
Site Evaluator Signature

#408
SE #

1/5/24
Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

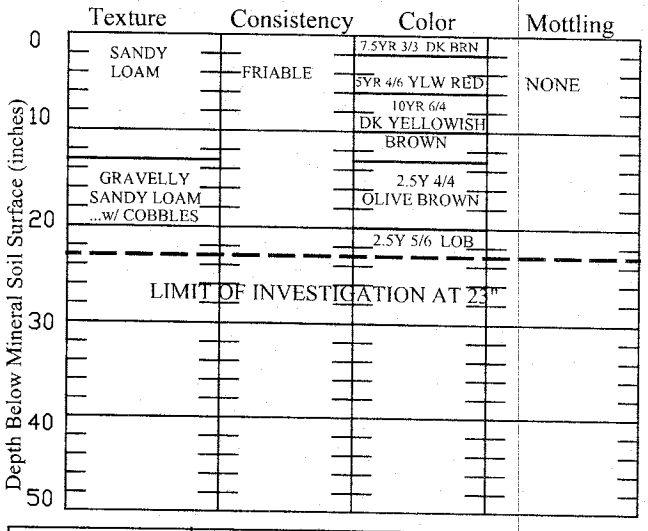
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-1A [x] Test Pit (Excavator) [ ] Boring

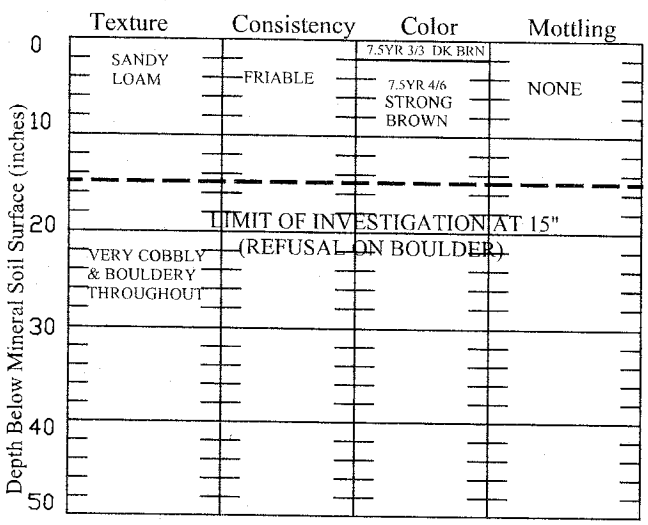
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	23 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole C-1B [x] Test Pit (Excavator) [ ] Boring

1 " Depth of Organic Horizon Above Mineral Soil

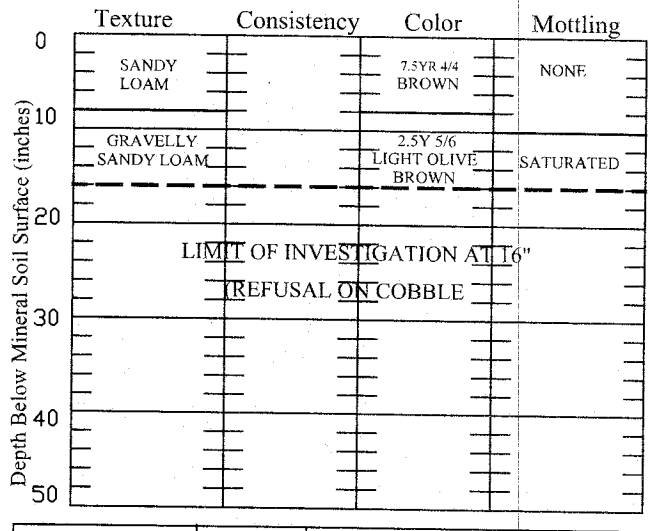


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-2A [x] Test Pit (Excavator) [ ] Boring

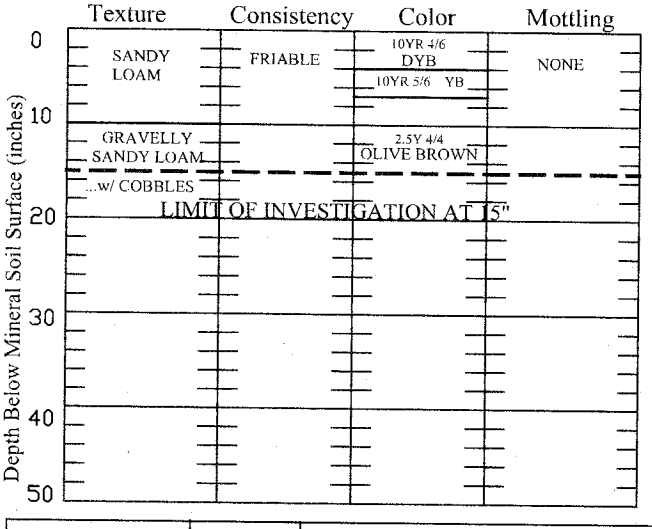
4 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / D Condition	____ %	10 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-2B [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

1/3/25 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
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(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

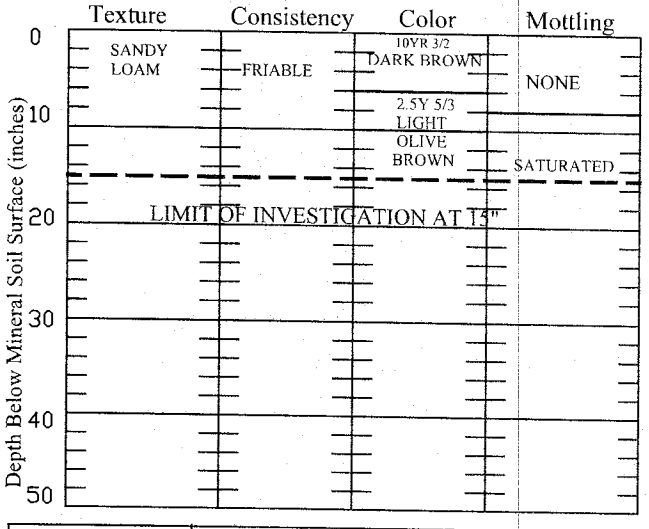
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-3A ☒ Test Pit (Hand Dug) ☐ Boring

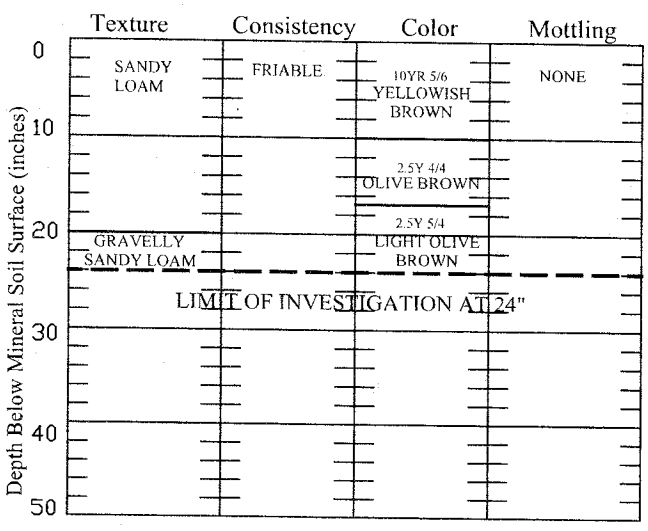
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / E Condition	%	8 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-3B ☒ Test Pit (Hand Dug) ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

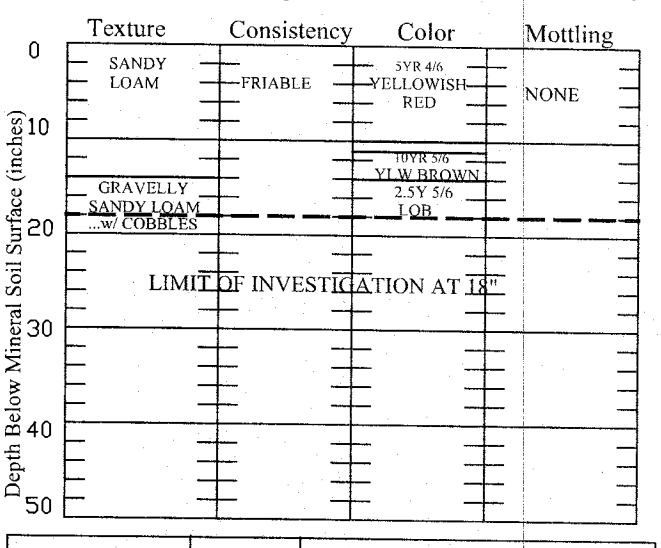


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	24 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-4A ☒ Test Pit (Excavator) ☐ Boring

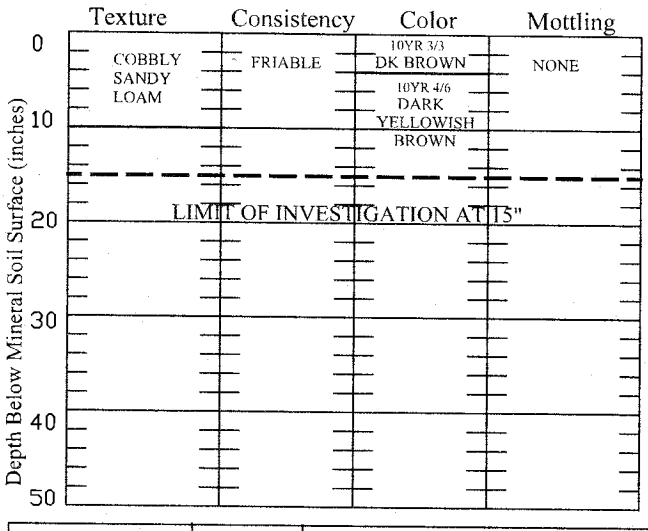
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-4B ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley
Site Evaluator Signature

#408
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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

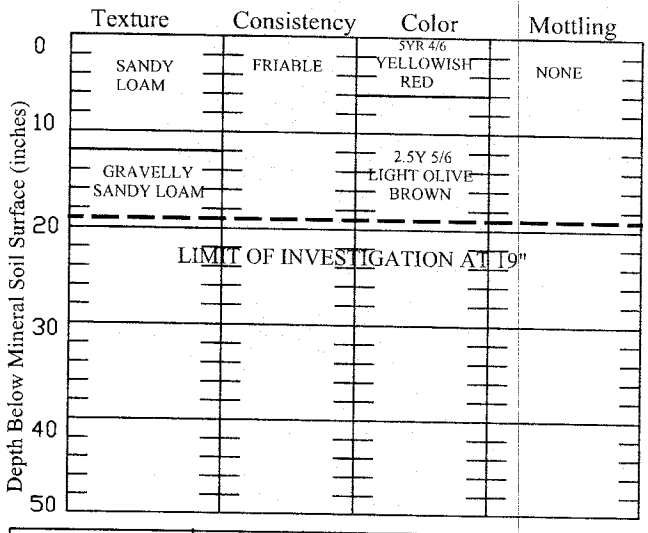
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-5A [x] Test Pit (Excavator) [ ] Boring

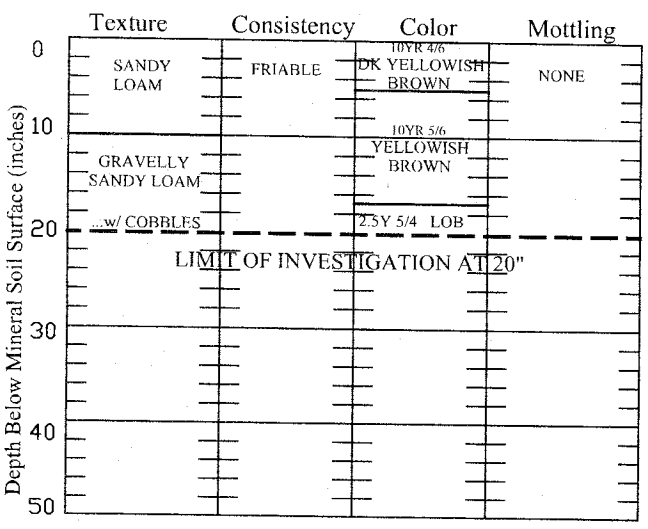
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	19 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole C-5B [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

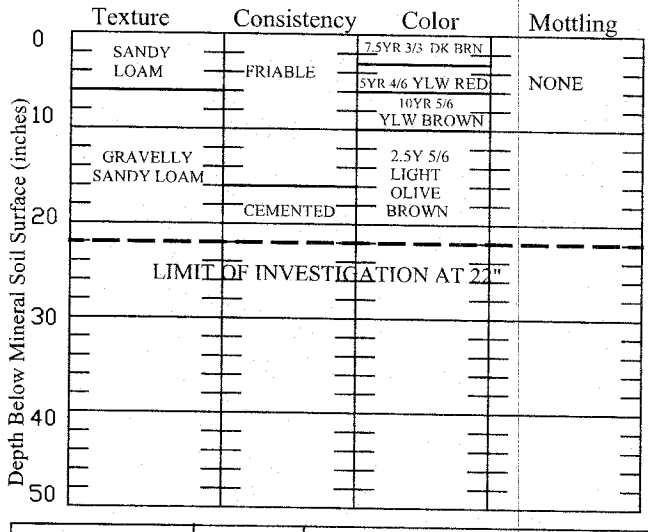


Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	20 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-6A [x] Test Pit (Excavator) [ ] Boring

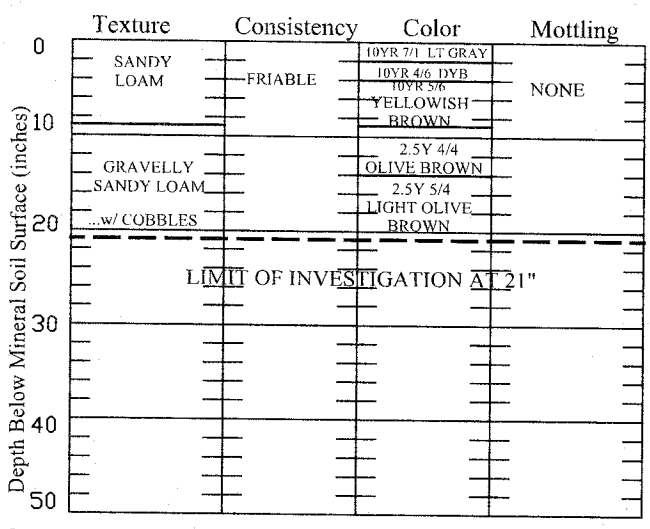
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-6B [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley
Site Evaluator Signature

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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

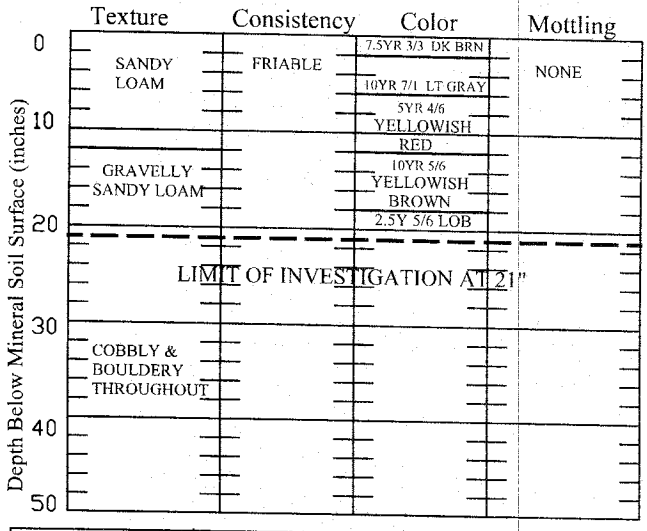
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole P-1A ☒ Test Pit (Excavator) ☐ Boring

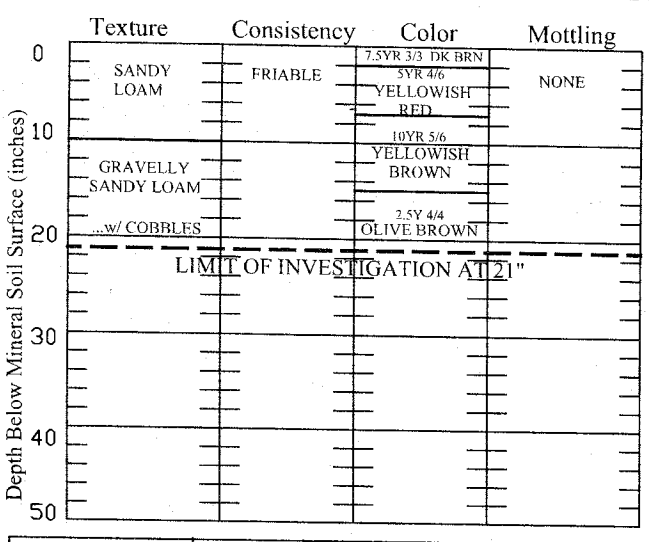
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole P-1B ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

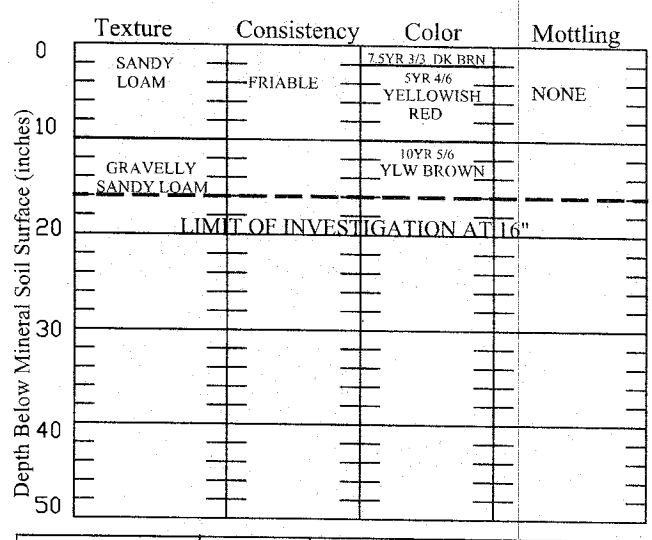


Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole P-2 ☒ Test Pit (Hand Dug) ☐ Boring

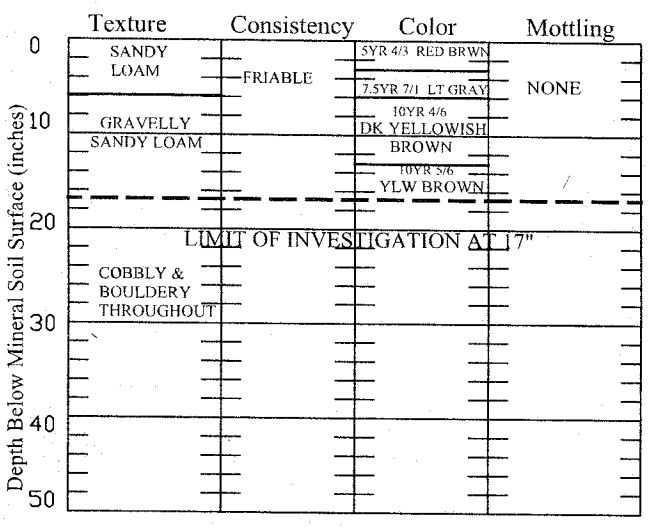
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	16 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole P-3 ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	17 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley
Site Evaluator Signature

#408
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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

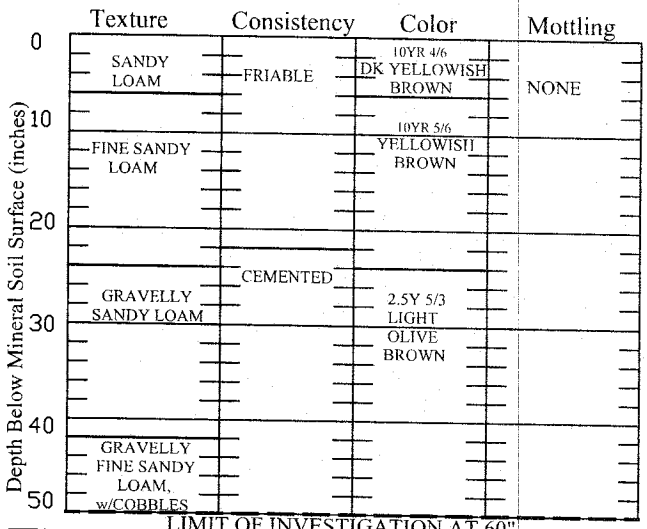
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 301 [X] Test Pit (Excavator) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

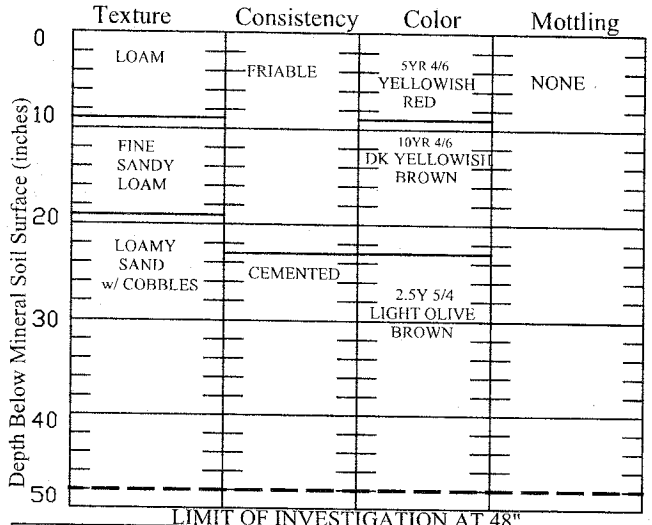


LIMIT OF INVESTIGATION AT 60"

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	22 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 302 [X] Test Pit (Excavator) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



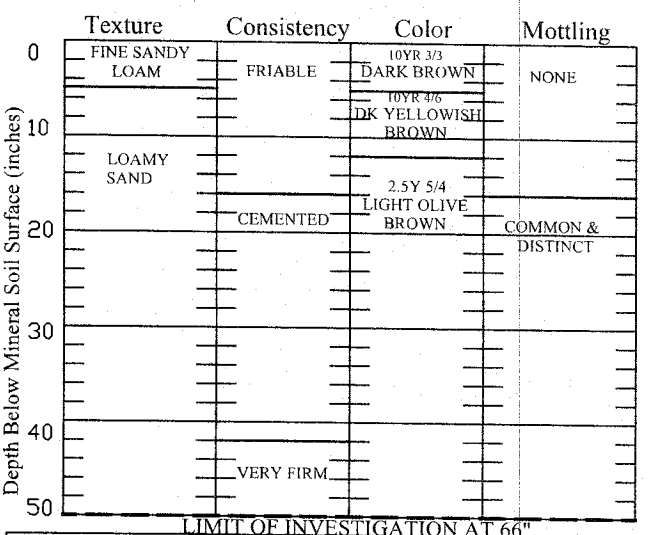
LIMIT OF INVESTIGATION AT 48"

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	23 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 303 [X] Test Pit (Excavator) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

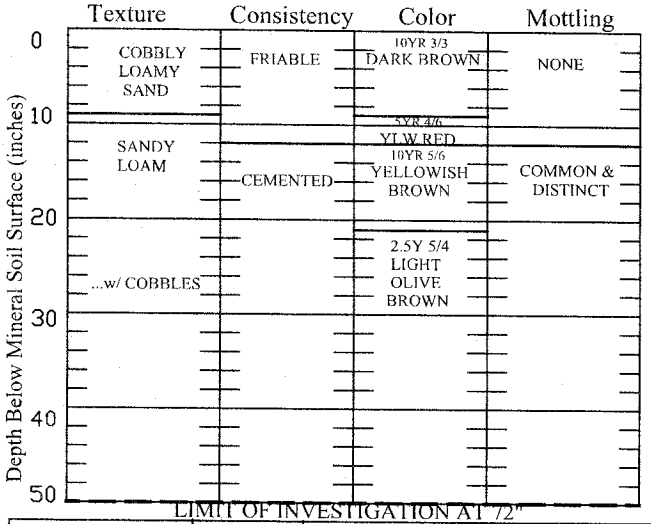


LIMIT OF INVESTIGATION AT 66"

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	16 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 304 [X] Test Pit (Excavator) [ ] Boring

4 " Depth of Organic Horizon Above Mineral Soil



LIMIT OF INVESTIGATION AT 72"

Soil Classification	Slope	Limiting Factor	
3 Profile / D Condition	%	12 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley
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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

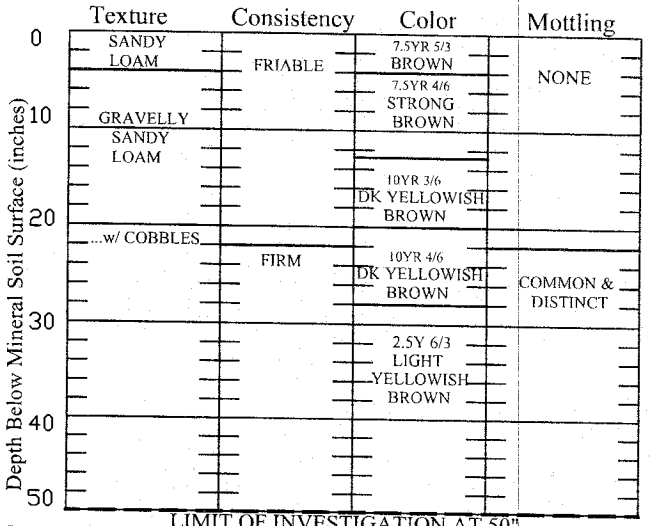
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 305 [x] Test Pit (Excavator) [ ] Boring

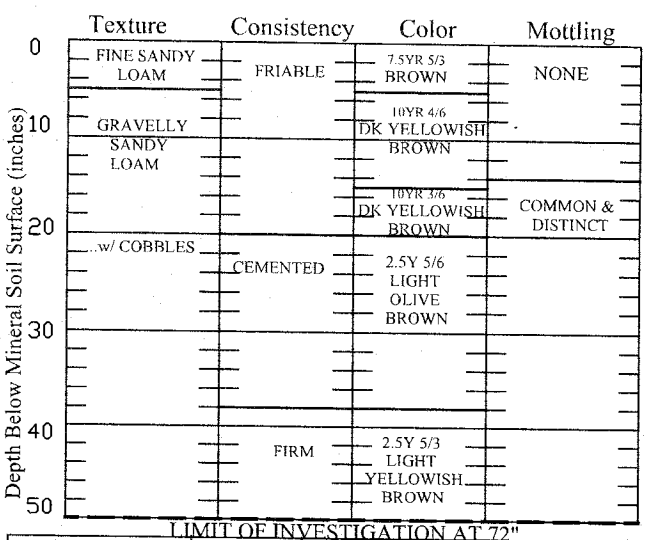
4 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	____ %	22 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Observation Hole 306 [x] Test Pit (Excavator) [ ] Boring

4 " Depth of Organic Horizon Above Mineral Soil

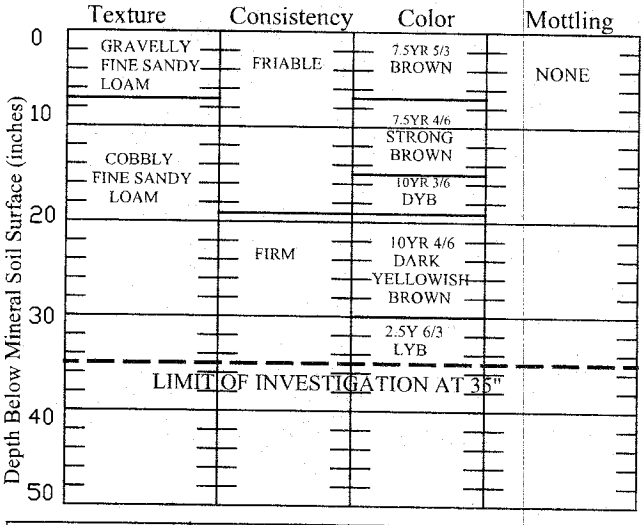


Soil Classification		Slope	Limiting Factor	
3	C	____ %	15 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 307 [x] Test Pit (Excavator) [ ] Boring

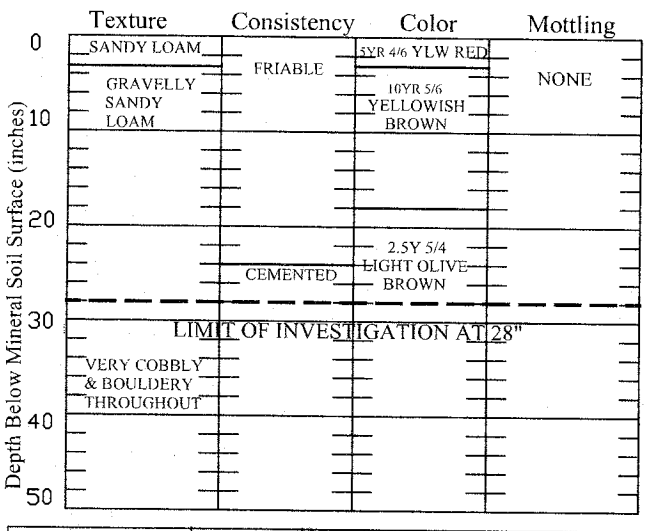
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	____ %	19 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Observation Hole 308 [x] Test Pit (Excavator) [ ] Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	____ %	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Sarah Ashley

Site Evaluator Signature

#408

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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

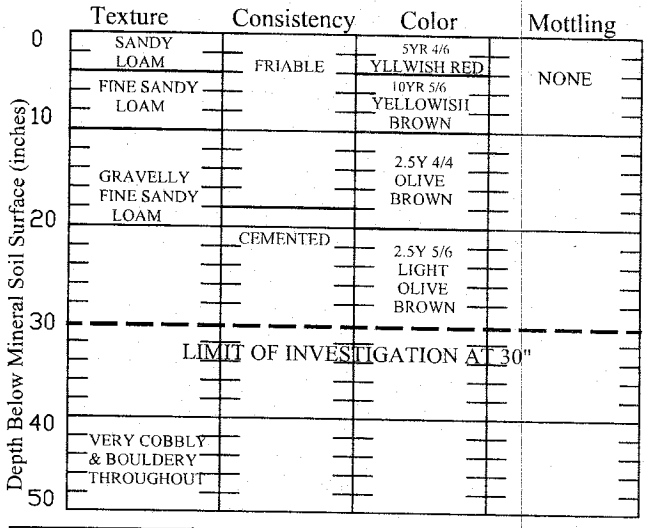
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 309 ☒ Test Pit (Excavator) ☐ Boring

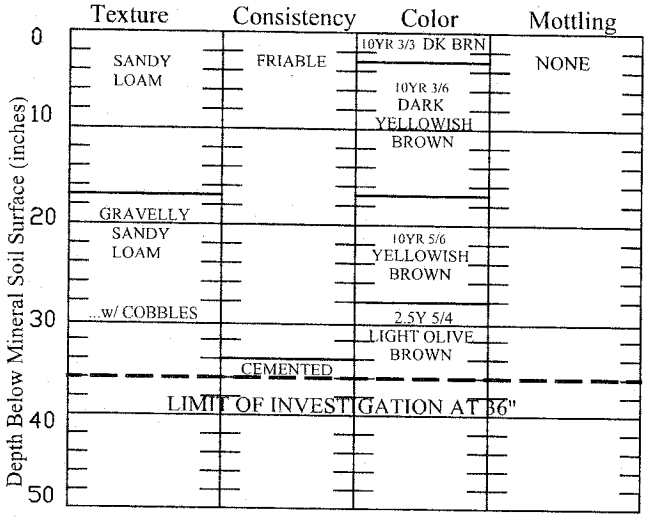
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 310 ☒ Test Pit (Excavator) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

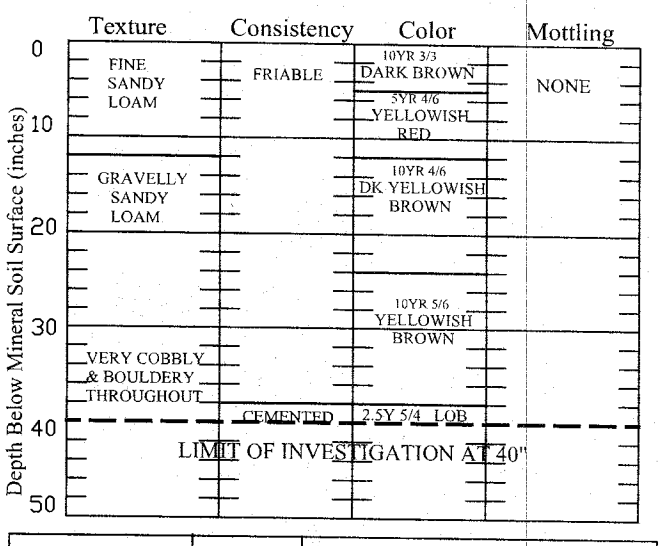


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	34 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 311 ☒ Test Pit (Excavator) ☐ Boring

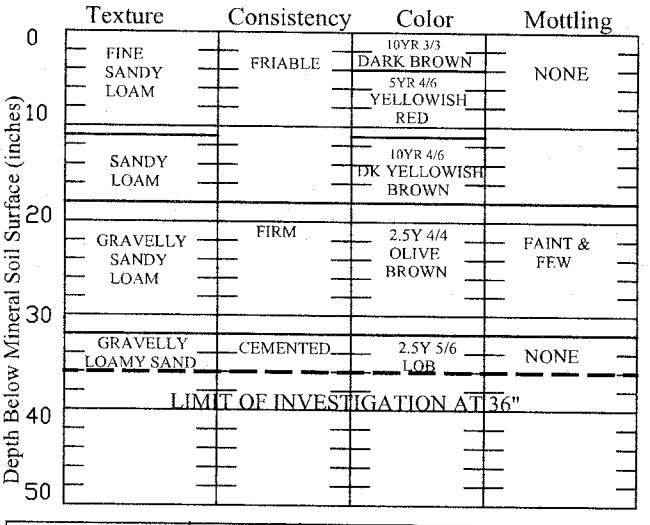
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	38 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 312 ☒ Test Pit (Excavator) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley
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(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

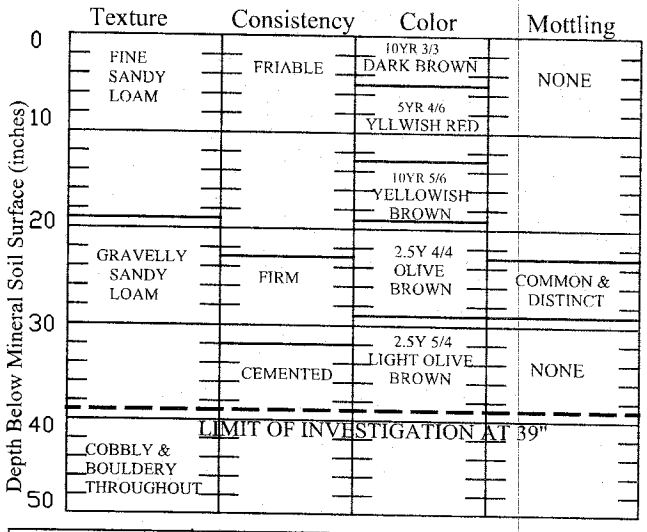
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 313 ☒ Test Pit (Excavator) ☐ Boring

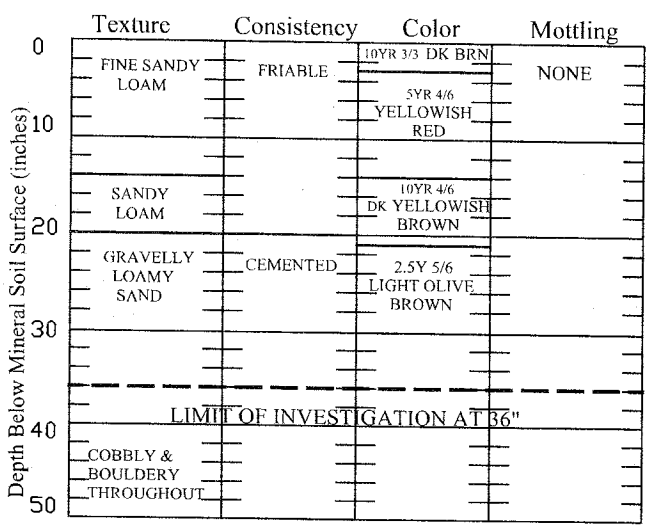
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	23 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 314 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil

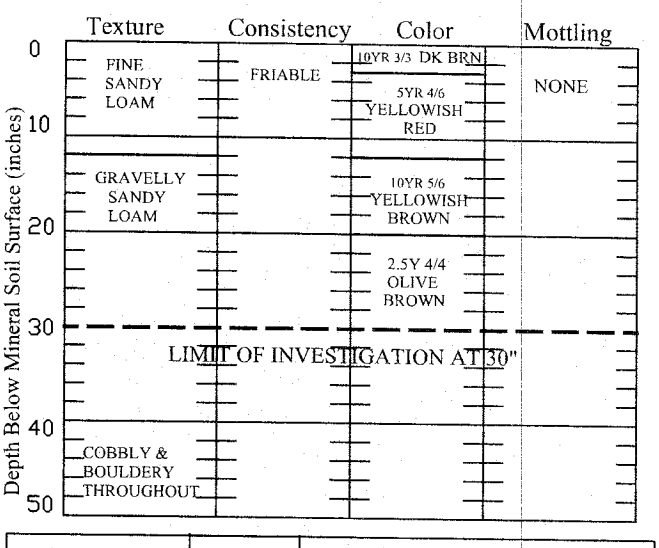


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 315 ☒ Test Pit (Excavator) ☐ Boring

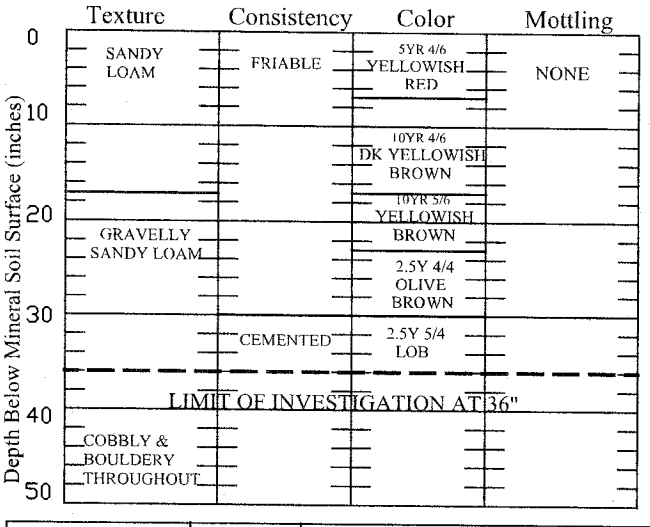
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	30 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 316 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	30 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley
Site Evaluator Signature

#408
SE #

12/27/24
Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

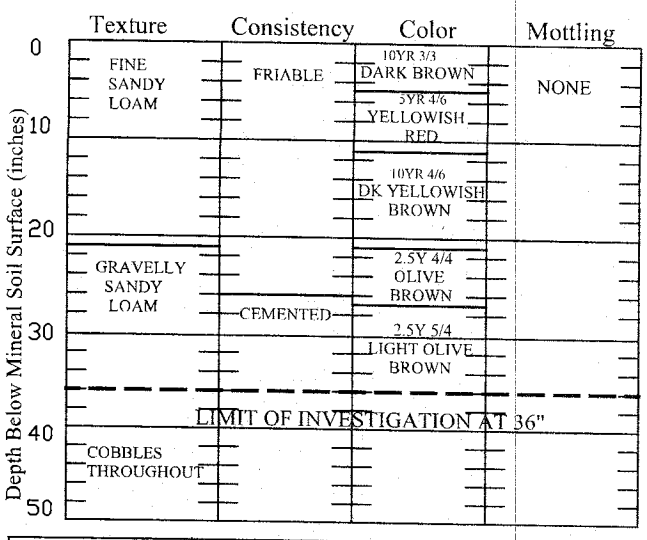
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 317 [x] Test Pit (Excavator) [ ] Boring

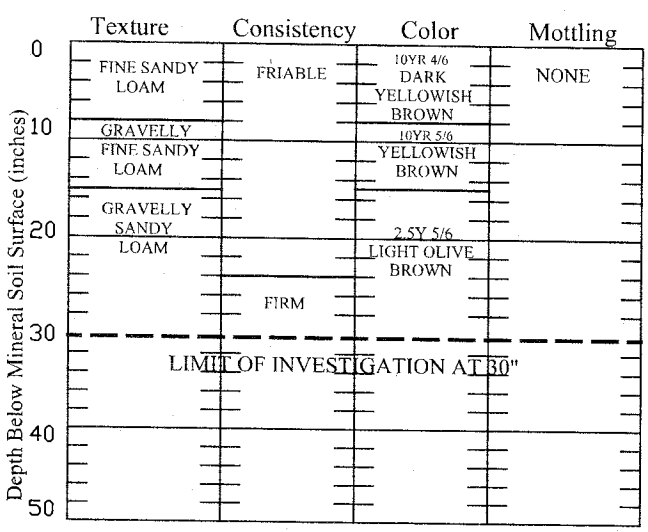
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	26 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 318 [x] Test Pit (Excavator) [ ] Boring

8 " Depth of Organic Horizon Above Mineral Soil

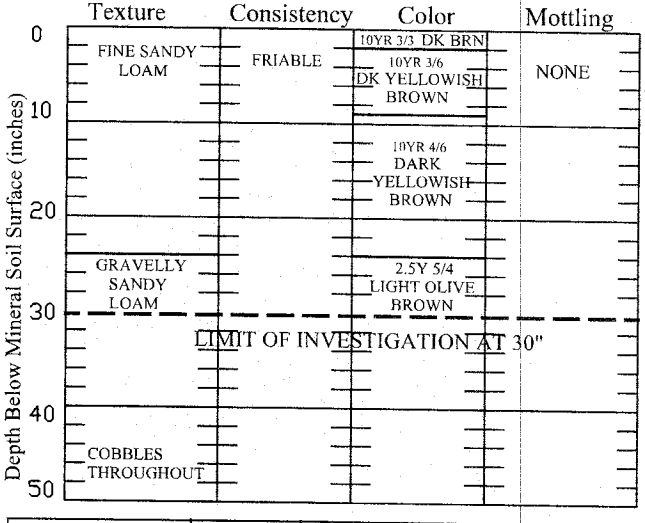


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 319 [x] Test Pit (Hand Dug) [ ] Boring

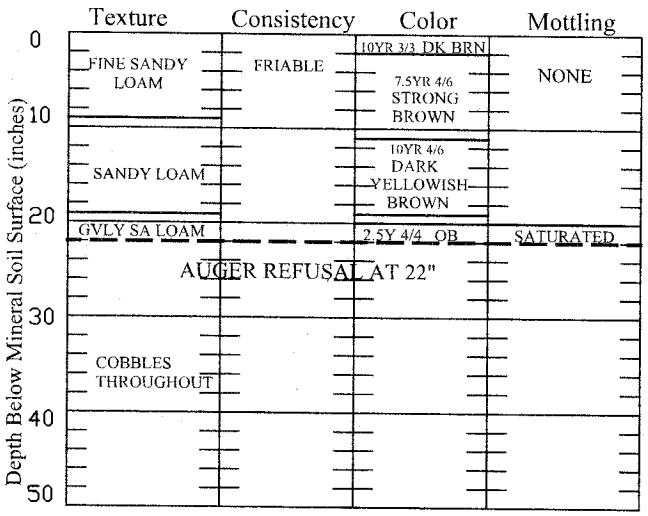
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	30 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 320 [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	22 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

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#408 — SE #

12/27/24 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

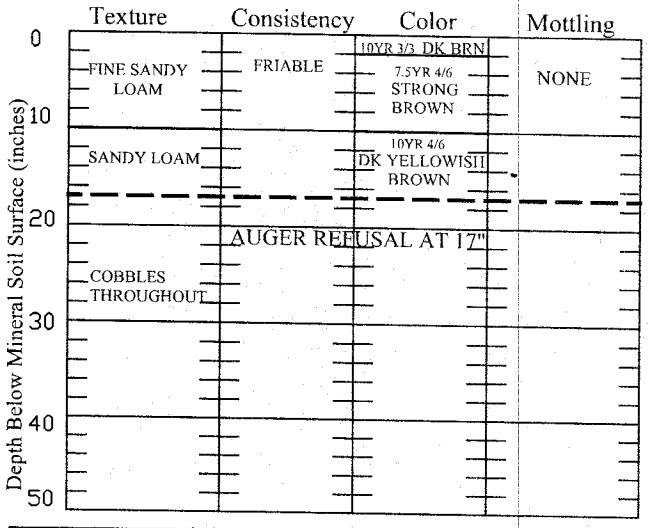
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 321 [X] Test Pit (Hand Dug) [ ] Boring

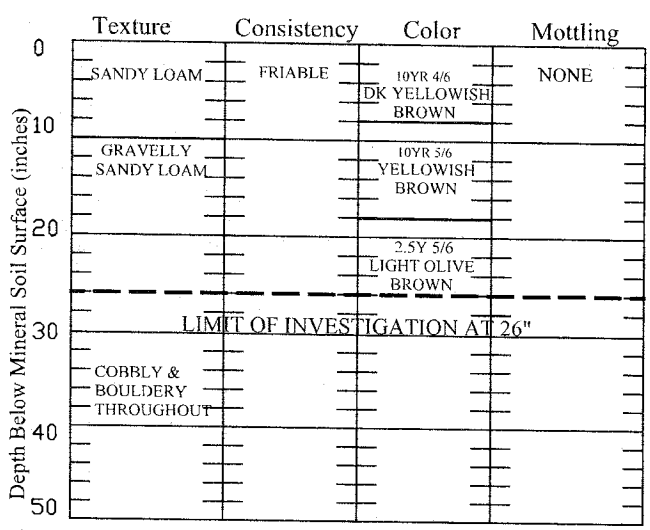
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	17 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

Observation Hole 322 [X] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

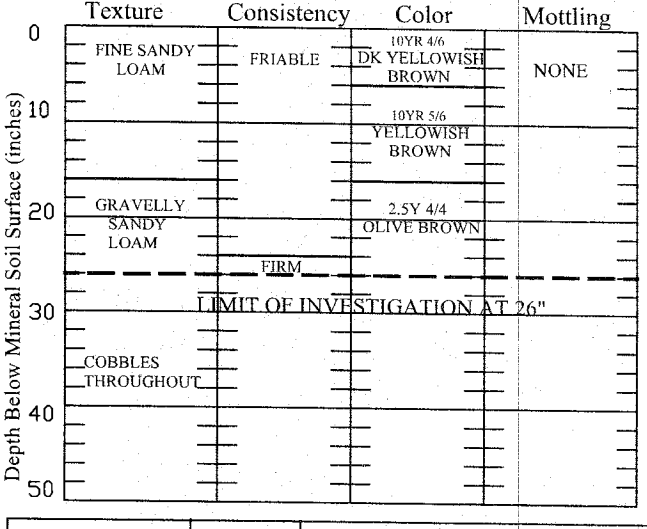


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	26 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 323 [X] Test Pit (Hand Dug) [ ] Boring

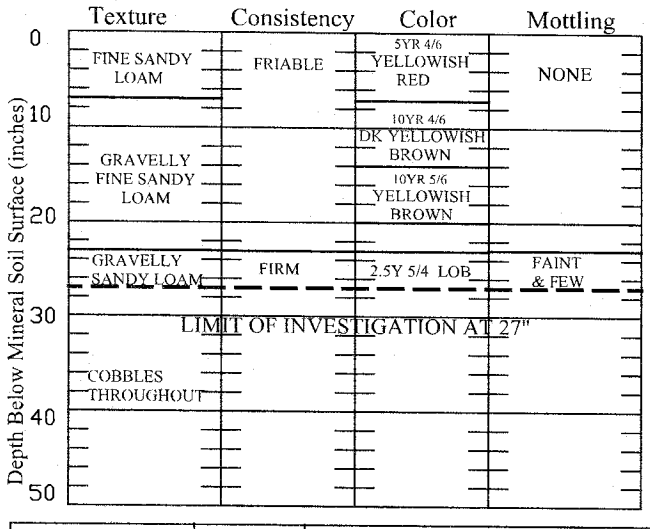
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 324 [X] Test Pit (Hand Dug) [ ] Boring

1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
____ Profile / ____ Condition	____ %	23 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

12/27/24 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 325 ☒ Test Pit (Hand Dug) ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	FINE SANDY LOAM	FRIABLE	10YR 4/6 DK YELLOWISH BROWN	SATURATED
10–20	GRAVELLY FINE SANDY LOAM		10YR 5/6 YELLOWISH BROWN	
20–30	GRAVELLY SANDY LOAM	FIRM	2.5Y 5/6 LOB	COMMON & FAINT
	AUGER REFUSAL AT 26"			
30–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley

Site Evaluator Signature

#408

SE #

12/27/24

Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # TP 326 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal (excav)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	gravSL	gran	vfr	
~~BS1~~	7.5YR 4/6	cobb SL			none
BS2					
BC	10YR 5/4	grav SL	abk/ platy	friable	few fine
C	2.5Y 5/3	cobb SL	massive	firm	c+d

LL = 60" / excavator

Soil Details: Soil Series/Phase Name: skerry grav SL

Limiting Factor: 25 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # TP327 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

28 " Depth: ☐ of exploration, or ☒ to refusal (hand)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	grav fsl	gran	vfr	
~~BS1~~	7.5YR 4/6				none
BS2	7.5YR 4/6				
BC	10YR 5/4		abk	fr	few fine

LL = 28" / refusal hand dug

Soil Details: Soil Series/Phase Name:

Limiting Factor: 18 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

LSS 494
SS License No.

STATE OF MAINE JOHANNA E. SZILLERY NO. SS494

affix professional seal

APPENDIX D

SOIL SERIES USE AND MANAGEMENT CONSIDERATIONS

SOIL SURVEY LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
ByA	Brayton loam, 0 to 3 percent slopes
Md	Made Land
SkA	Skerry gravelly sandy loam, 0 to 3 percent slopes
SkB	Skerry gravelly sandy loam, 3 to 8 percent slopes
SkC	Skerry stony fine sandy loam, 8 to 15 percent slopes
WaB	Waumbek stony fine sandy loam, 3 to 8 percent slopes
WaD	Waumbek cobbly fine sandy loam, 15 to 25 percent slopes
WeB	Westbury cobbly sandy loam, 3 to 8 percent slopes
WWA	Westbury-Waumbek association, 0 to 3 percent slopes
WSC	Waumbek-Skerry association, 8 to 15 percent slopes

MAP UNIT NAME: Brayton loam *(ByA)*
(Taxonomic Class: Aeric Endoaquepts)

SETTING

Parent Material: Dense glacial till
Landform: Glaciated
Position in Landscape: Toeslopes and depressions
Slope Gradient Ranges: (A) 0-3 %

COMPOSITION AND SOIL CHARACTERISTICS

General: Textures are dominated cobbly silt loam and loam

Drainage Class: Poorly drained, seasonal high water table at or near the soil surface for portions of the year.

Typical Profile Description (AB 142):
Organic Horizon: 6"
Subsurface Layer: mucky very gravelly silt loam, 0-8"
Subsoil Layer: yellowish very gravelly and cobbly silt loam, 6-11"

Hydrologic Group: D
Surface Run Off: Low to medium
Permeability: Moderate in upper horizons; moderately slow or slow in substratum.
Depth to Bedrock: Very deep, more than 60 inches.
Hazard to Flooding: Moderate. This soil is located in toeslopes and depressions and may be subject to flooding.
Erosion: K factor: 0.20

INCLUSIONS (Within Mapping Unit)

Similar: Monarda, Burnham
Contrasting: Westbury

USE AND MANAGEMENT

Brayton soils are hydric, and may be part of jurisdictional wetlands, if the other wetland parameters are met. Brayton soils are limited by a high seasonal water table and dense till at a relatively shallow depth. This impacts the hydraulic conductivity of this soil and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements.

MAP UNIT NAME: Skerry gravelly fine sandy loam (SkA, SkB SkC)
(Taxonomic Class: Aquic Haplorthod)

SETTING

Parent Material: Dense, sandy till
Landform: Glaciated uplands and drumlins
Position in Landscape: Sideslopes
Slope Gradient Ranges: (A) 0-3 %; (B) 3-8%; (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

General: Textures are dominated by fine sandy loam in the surface, sandy loam to loamy sand in the substratum

Drainage Class: Moderately well drained, seasonal high water table 16 to less than 40 inches below the ground surface.

Typical Profile Description (TP 108):
Organic Horizon: 2"
Subsurface Layer: brown stony fine sandy loam, friable, 0-14"
Subsoil Layer: brown cobbly fine sandy loam, friable, 14-20"
yellowish brown stony sandy loam, mottled, 20-30"
Substratum: firm, mottled, light yellowish brown stony sandy loam, 40 +"

Hydrologic Group: C/D
Surface Run Off: (A) 0-3 %, Low to medium
(B) 3-8%, Moderate
(C) 8-15%, High
Hydraulic Conductivity: Estimated saturated hydraulic conductivity is moderately high or high in the mineral solum and moderately low or moderately high in the dense substratum.
Depth to Bedrock: Very deep, more than 60 inches.
Hazard to Flooding: Low, this soil is located in upland positions.
Erosion: K factor: 0.20

INCLUSIONS (Within Mapping Unit)

Similar: Becket, Peru, Waumbek, Hermon
Contrasting:

USE AND MANAGEMENT
(Low density residential development)

Limitations for Skerry soils are low. The major limitation is due to slope on the SkC units. Where slopes are moderate to steep, proper erosion control is important to minimize soil erosion.

MAP UNIT NAME: Waumbek stony fine sandy loam (WaB, WaD)
(Taxonomic Class: Aquic Haplorthod)

SETTING

Parent Material: Stony, sandy till
Landform: Glaciated uplands
Position in Landscape: Sideslopes
Slope Gradient Ranges: (B) 3-8%, (D) 15-25%

COMPOSITION AND SOIL CHARACTERISTICS

General: Textures are dominated by gravelly and cobbly fine sandy loam in the surface, and cobbly and stony sandy loam to loamy sand in the substratum

Drainage Class: Moderately well drained, seasonal high water table 16 to less than 40 inches below the ground surface.

Typical Profile Description (TP 106):
Organic Horizon: 6"
Subsurface Layer: brown stony fine sandy loam, friable, 0-12"
strong brown stony fine sandy loam, friable, 14-25"
Subsoil Layer: yellowish brown cobbly fine sandy loam, mottled, 25-34"
Substratum: firm, mottled, light yellowish brown stony sandy loam, 34-48"+

Hydrologic Group: C
Surface Run Off: (B) 3-8%, Moderate
(D) 15-25% High
Permeability: Permeability is moderately rapid or rapid in the solum and rapid in the substratum.
Depth to Bedrock: Very deep, more than 60 inches.
Hazard to Flooding: Low, this soil is located in upland positions.
Erosion: K factor: 0.20

INCLUSIONS (Within Mapping Unit)

Similar: Skerry, Hermon, Becket, Peru. Westbury
Contrasting:

USE AND MANAGEMENT

Limitations for Waumbek soils are low. The major limitation is due to slope on the WaD units. Where slopes are moderate to steep, proper erosion control is important to minimize soil erosion.

M**AP UNIT NAME: Westbury cobbly sandy loam (WeB)**
(Taxonomic Class: Typic Fragiaquods)

SETTING

Parent Material: Till
Landform: Glaciated uplands
Position in Landscape: Sideslopes
Slope Gradient Ranges: (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

General: Textures are dominated by gravelly and cobbly fine sandy loam in the surface, and cobbly and stony sandy loam to loamy sand in the substratum

Drainage Class: Somewhat poorly drained, seasonal high water table less than 16 inches below the ground surface.

Typical Profile Description (TP 103):
Organic Horizon: 3"
Subsurface Layer: brown sandy loam, friable, 0-9"
strong brown stony cobbly sandy loam, friable, 9-13"
Subsoil Layer: yellowish brown cobbly sandy loam, mottled, 13-18"
Substratum: firm, mottled, light olive brown sandy loam, 18-60"+

Hydrologic Group: D
Surface Run Off: (B) 3-8%, Moderate
Saturated Hydraulic Conductivity: Saturated hydraulic conductivity in the mineral material is moderately high or high above the fragipan and low to moderately high in the fragipan and substratum.
Depth to Bedrock: Very deep, more than 60 inches.
Hazard to Flooding: Low, this soil is located in upland positions.

INCLUSIONS (Within Mapping Unit)

Similar: Skerry, Peru, Waumbek
Contrasting:

USE AND MANAGEMENT

Waumbek soils are limited by a high seasonal water table and dense till at a relatively shallow depth. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material, diversion of water from structures and roads, and avoidance of soils with high seasonal water table.

APPENDIX E

SOILS GLOSSARY

GLOSSARY OF SOIL SCIENCE TERMS

The following terms relate to the practice of soil science and classification of soils. These definitions are separated into terms which are used to describe a soil or soil profile, terms which relate to the practice of soils mapping, and terms which are interpreted based on the properties of a soil.

SOIL MAPPING TERMS

These terms relate to the soils survey map and the soils and landforms that are depicted on this map.

Association and Complex – Two or more dissimilar soils that occur in a regularly repeating pattern on the landscape. At the scale of mapping shown, these dissimilar soils could not be separated. (USDA, *Soil Survey Manual*)

Consociation – A delineated polygon which is dominated by one soil type or series and similar soils. (USDA, *Soil Survey Manual*)

Dissimilar soil – Soil inclusions within a mapped polygon which are different from the named map unit. The characteristics, properties, and use and management of a dissimilar soil are different enough that there are important differences between these soils for the purpose of the soil survey. (USDA, *Soil Survey Manual*; MAPSS, *Guidelines*)

Inclusion – Components within a delineated polygon that are not identified by the polygon name. These inclusions may be similar soils or dissimilar soils. Inclusions of dissimilar soil shall not exceed 25 percent of the map unit area, based on MAPSS Standards. (USDA, *Soil Survey Manual*; MAPSS, *Guidelines*)

Map Unit – An area that is defined and named the same in terms of its soil components and is named for the dominant soil component. Each map unit differs in some way from a differently named map unit. (USDA, *Soil Survey Manual*)

Map Unit Purity – Within a delineated polygon, the amount of the polygon that is made up of the named soil relative to the amount of polygon made up of inclusions, for which the polygon is not named. (USDA, *Soil Survey Manual*). MAPSS *Guidelines* indicate that 75% of a delineated map unit should be the named or similar soils; dissimilar soils shall not exceed 25% of a delineated map unit.

Phase – A subset of a soil series which can be significant for use and management. Phases may be differentiated for different classes of surface stoniness and slopes. (USDA, *Soil Survey Manual*)

Series – A group of soils that share similar defining characteristics. This is the most homogenous category of soil taxonomy: a given soil series has a relatively narrow range of properties. (USDA, *Soil Survey Manual*)

Similar Soil – Soil inclusions within a mapped polygon which are different from the named map unit; however, the properties, management, and interpretations of the similar soil are such that no important differences exist for the purpose of the soil survey. (USDA, *Soil Survey Manual*; MAPSS, *Guidelines*)

Taxajunct/Variant – A group of soils that have properties outside the range of any established soil series. These differences are small so that major interpretations are not affected. (USDA, *Soil Survey Manual*)

SOIL PROPERTIES TERMS

Consistence – As used in soil surveys, consistence is the resistance of a soil sample to crushing or penetration and is described as loose, friable, firm, and rigid. As used generally in soils, consistence also includes the plasticity, toughness, or stickiness of a puddled soil, and the behavior of a soil under compression. This property is based on the cohesion and adhesion of soil particles. (USDA, *Soil Survey Manual;* Brady and Weil, *The Nature and Properties of Soils*)

Depth classes – classes of soil depth to bedrock. In Maine, soils are categorized into five depth classes: (MAPSS, *Guidelines*)

1. Very shallow: Less than 10 inches of soil above bedrock.
2. Shallow: 10 to less than 20 inches of soil above bedrock.
3. Moderately deep: 20 to less than 40 inches of soil above bedrock.
4. Deep: 40 to less than 60 inches of soil above bedrock.
5. Very Deep: Greater than 60 inches of soil above bedrock.

Drainage classes – the frequency and duration of wet periods within the soil profile. The USDA defines seven drainage classes based on the length that the soil is inundated by water during the growing season, the depth to free water, and the restriction of plant growth. Maine USDA and soil scientists have correlated these seven drainage classes into observations of the seasonal high-water table in soils: (USDA, *Soil Survey Manual;* MAPSS, *Guidelines*)

1. Very poorly drained: Seasonal high-water table at or near the surface.
2. Poorly drained: Seasonal high-water table at or near the surface.
3. Somewhat poorly drained: Seasonal high-water table (redoximorphic features) less than 16 inches below the soil surface.
4. Moderately well drained: Seasonal high-water table (redoximorphic features) 16 to less than 40 inches below the surface.
5. Well drained: Seasonal high-water table (redoximorphic features) 40 inches or more below the surface.
6. Somewhat excessively drained: Soil depth is 10 to 20 inches to bedrock with specific textural properties; or soil depth is 20 inches or greater to bedrock with specific textural properties.
7. Excessively drained: Soil depth is 10 inches to bedrock; or specific textural properties.

Redoximorphic features – changes in soil color which are attributed to soil wetness. These features may be "concentrations" of color or "depletions" of color. Redoximorphic features are evidence of the seasonal high-water table. This was formerly called "mottling" or "redoximorphic mottling" (USDA, *Soil Survey Manual*).

Seasonal High-Water Table – a zone of saturation which occurs within the soil profile during the wettest part of the year. The depth of this zone is described at the highest average depth (i.e., closest to the surface) in the soil profile (USDA, *Soil Survey Manual*).

Structure – The arrangement of primary soil particles (sand, silt, and clay) into secondary units. These units are characterized by size, shape, and degree of distinctiveness. Common soil structure types include granular, angular and subangular blocky, platy, prismatic, single grain, and massive. (USDA, *Soil Survey Manual;* Brady and Weil, *The Nature and Properties of Soils*)

Texture – the relative proportion, by weight, of sand, silt, and clay in a soil. The soil textural class is a grouping of soils based on the relative proportions of sand, silt, and clay in a soil. Soils within a textural class have similar physical properties. Soil textural classes are, from coarse to fine: sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. (USDA, *Soil Survey Manual;* Brady and Weil, *The Nature and Properties of Soils*)

DESCRIPTIVE SOIL PROFILE OR SOIL CHARACTERISTIC TERMS

Erodibility factor (K factor) – a relative index of the susceptibility of bare, cultivated soil to particle detachment and transport by rainfall.

Hydraulic conductivity (saturated) (Ksat) - the factor relating soil water flow rate to the hydraulic gradient. Ksat is the reciprocal of the resistance of soil to water movement. (USDA, *Soil Survey Manual*)

Hydrologic soil group – groups of soils that have similar runoff potential under similar climatic and land cover conditions. In Maine, soils are place into one of four hydrologic groups: A, B, C, and D. These groups are described as follows:

A: Soils with low runoff potential when thoroughly wet. Water is transmitted freely throughout the soil. These soils tend to have less than 10% clay and more than 90% sand or gravel.

B: These soils have moderately low runoff potential when thoroughly wet, with unimpeded water transmission. These soils are typically 10-20% clay or silt and 50-90% sand.

C: Soils with a moderately high runoff potential when thoroughly wet. Water transmission is somewhat restricted in this soil. These soils are typically 20-40% clay or silt and less than 50% sand.

D: These soils have a high runoff potential when thoroughly wet, with restricted or very restricted water transmission. These soils are 40% or greater clay or silt, and less than 50% sand. (USDA, *National Engineering Handbook*)

LIMITATIONS

Permeability – the ease with which gases, liquids, or plant roots penetrate through a mass or layer of soil. (Brady and Weil, *The Nature and Properties of Soils*)

Soil Potential Ratings – classes that indicate the relative quality of a soil for a particular use as compared with other soils in a given area. The purpose of this rating system is to identify the relative suitability of soils for a given use for planning purposes. These ratings are developed at the Federal (USDA) level, and range from very high potential, high potential, medium potential, low potential, to very low potential. (USDA, *National Soil Survey Handbook*)

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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 Northern Piscataquis and Northern Somerset County Area, Maine, and Penobscot County, Maine

May 26, 2021

Preface

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).

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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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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.


68° 49' 59" W
68° 48' 50" W
513000
513200
513400
513600
513800
514000
514200
514400
45° 43' 49" N
45° 42' 45" N
5064000
5063800
5063600
5063400
5063200
5063000
5062800
5062600
5062400
5062200
SHC
HSE
SHC
W
W
HhC
ShD
MsC
DAE
PgD
HSE
HhC
HvC
SHC
HeC
HhC
CaC
ShD
MrB
Map Scale: 1:9,660 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
100
200
400
600
Feet
0
450
900
1800
2700
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 scales ranging from 1:20,000 to 1:24,000.

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: Northern Piscataquis and Northern Somerset County Area, Maine
Survey Area Data: Version 10, Jun 3, 2020

Soil Survey Area: Penobscot County, Maine
Survey Area Data: Version 19, Jun 8, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Apr 29, 2013—Jul 2, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	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
DAE	Peru-Marlow association, 15 to 35 percent slopes, very bouldery	56.7	14.6%
HSE	Hermon-Skerry association, 15 to 35 percent slopes, very bouldery	24.5	6.3%
SHC	Skerry-Hermon-Monadnock association, 0 to 15 percent slopes, very bouldery	42.8	11.0%
Subtotals for Soil Survey Area		**124.0**	**31.8%**
Totals for Area of Interest		**389.4**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CaC	Canaan extremely rocky sandy loam, 5 to 15 percent slopes	44.1	11.3%
HeC	Hermon sandy loam, 8 to 15 percent slopes, very stony	7.1	1.8%
HhC	Hermon sandy loam, 3 to 15 percent slopes, extremely stony	65.7	16.9%
HvC	Howland silt loam, 8 to 15 percent slopes, very stony	16.2	4.2%
MrB	Monarda-Burnham complex, 0 to 3 percent slopes, very stony	3.3	0.9%
MsC	Monarda-Burnham complex, 0 to 15 percent slopes, extremely stony	21.1	5.4%
PgD	Plaisted gravelly loam, 15 to 30 percent slopes	29.9	7.7%
ShD	Stony land, hermon material, strongly sloping	72.8	18.7%
W	Water bodies	5.2	1.3%
Subtotals for Soil Survey Area		**265.5**	**68.2%**
Totals for Area of Interest		**389.4**	**100.0%**

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 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 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.

Northern Piscataquis and Northern Somerset County Area, Maine

DAE—Peru-Marlow association, 15 to 35 percent slopes, very bouldery

Map Unit Setting

National map unit symbol: 2qtm2
Elevation: 520 to 2,500 feet
Mean annual precipitation: 31 to 51 inches
Mean annual air temperature: 36 to 46 degrees F
Frost-free period: 80 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Marlow and similar soils: 41 percent
Peru and similar soils: 39 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlow

Setting

Landform: Drumlinoid ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from granite and gneiss

Typical profile

Oa - 0 to 4 inches: gravelly highly decomposed plant material
H1 - 4 to 7 inches: gravelly silt loam
H2 - 7 to 17 inches: gravelly loam
H3 - 17 to 35 inches: gravelly fine sandy loam
H4 - 35 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 21 to 38 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 31 to 43 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Peru

Setting

Landform: Drumlinoid ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from granite and gneiss

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 6 inches: bouldery silt loam
H2 - 6 to 22 inches: stony sandy loam
H3 - 22 to 37 inches: channery loam
H4 - 37 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 25 to 39 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Colonel

Percent of map unit: 5 percent
Landform: Till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ragmuff

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Rawsonville

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Upper third of mountainflank, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Brayton

Percent of map unit: 2 percent
Landform: Till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Hogback

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Monadnock

Percent of map unit: 2 percent
Landform: Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent

Perham

Percent of map unit: 1 percent
Landform: Drumlinoid ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

HSE—Hermon-Skerry association, 15 to 35 percent slopes, very bouldery

Map Unit Setting

National map unit symbol: 2x9qq
Elevation: 490 to 2,100 feet
Mean annual precipitation: 31 to 65 inches
Mean annual air temperature: 36 to 48 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Hermon, very bouldery, and similar soils: 65 percent
Skerry, very bouldery, and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hermon, Very Bouldery

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainflank, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly supraglacial meltout till derived from granite and gneiss

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
E - 2 to 3 inches: sandy loam
Bhs - 3 to 9 inches: sandy loam
Bs1 - 9 to 16 inches: very gravelly sandy loam
Bs2 - 16 to 32 inches: extremely gravelly loamy sand
C - 32 to 65 inches: very gravelly coarse sand

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.03 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 capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Skerry, Very Bouldery

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy lodgment till derived from granite and gneiss and/or schist over sandy lodgment till derived from granite and gneiss and/or schist

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
E - 2 to 4 inches: fine sandy loam
Bhs - 4 to 6 inches: fine sandy loam
Bs1 - 6 to 20 inches: gravelly fine sandy loam
Bs2 - 20 to 25 inches: gravelly fine sandy loam
Cd1 - 25 to 34 inches: gravelly loamy sand
Cd2 - 34 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 2.0 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 19 to 34 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Abram, very bouldery

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Mountaintop, mountainflank, side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Rawsonville, very bouldery

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Mountaintop, mountainflank, side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Colonel, very bouldery

Percent of map unit: 3 percent
Landform: Mountains, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainflank, side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ragmuff, very bouldery

Percent of map unit: 2 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountaintop, mountainflank, side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

SHC—Skerry-Hermon-Monadnock association, 0 to 15 percent slopes, very bouldery

Map Unit Setting

National map unit symbol: 2xk0f
Elevation: 490 to 1,900 feet
Mean annual precipitation: 31 to 65 inches
Mean annual air temperature: 36 to 48 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Skerry, very bouldery, and similar soils: 35 percent
Hermon, very bouldery, and similar soils: 30 percent
Monadnock, very bouldery, and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Skerry, Very Bouldery

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainbase, mountainflank, interfluve, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy lodgment till derived from granite and gneiss and/or schist over sandy lodgment till derived from granite and gneiss and/or schist

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
E - 2 to 4 inches: fine sandy loam
Bhs - 4 to 6 inches: fine sandy loam
Bs1 - 6 to 20 inches: gravelly fine sandy loam
Bs2 - 20 to 25 inches: gravelly fine sandy loam
Cd1 - 25 to 34 inches: gravelly loamy sand
Cd2 - 34 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 15 percent
Surface area covered with cobbles, stones or boulders: 2.0 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 19 to 34 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Hydric soil rating: No

Description of Hermon, Very Bouldery

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly supraglacial meltout till derived from granite and gneiss

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
E - 2 to 3 inches: sandy loam
Bhs - 3 to 9 inches: sandy loam

Bs1 - 9 to 16 inches: very gravelly sandy loam
Bs2 - 16 to 32 inches: extremely gravelly loamy sand
C - 32 to 65 inches: very gravelly coarse sand

Properties and qualities

Slope: 0 to 15 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 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 capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Monadnock, Very Bouldery

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial meltout till derived from granite and gneiss and/or mica schist and/or phyllite over sandy and gravelly supraglacial meltout till derived from granite and gneiss and/or mica schist and/or phyllite

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
E - 3 to 8 inches: fine sandy loam
Bs1 - 8 to 10 inches: fine sandy loam
Bs2 - 10 to 12 inches: fine sandy loam
Bs3 - 12 to 22 inches: gravelly fine sandy loam
BC - 22 to 25 inches: gravelly fine sandy loam
2C1 - 25 to 45 inches: gravelly loamy sand
2C2 - 45 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 15 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: 18 to 36 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Abram, very bouldery

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Mountaintop, mountainflank, side slope, nose slope, interfluve
Microfeatures of landform position: Rises, rises
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Colonel, very bouldery

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase, mountainflank, interfluve, side slope, nose slope
Microfeatures of landform position: Open depressions, closed depressions, closed depressions, open depressions
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: No

Wonsqueak

Percent of map unit: 3 percent
Landform: Mountains, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, mountainflank, interfluve, side slope, nose slope
Microfeatures of landform position: Closed depressions, open depressions, closed depressions, open depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Naumburg, very bouldery

Percent of map unit: 2 percent
Landform: Hills, mountains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase, mountainflank, interfluve, side slope, nose slope
Microfeatures of landform position: Closed depressions, closed depressions, open depressions, open depressions
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: No

Penobscot County, Maine

CaC—Canaan extremely rocky sandy loam, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9krh
Elevation: 180 to 1,510 feet
Mean annual precipitation: 44 to 46 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Canaan and similar soils: 75 percent
Rock outcrop: 20 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canaan

Setting

Landform: Hills, mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal supraglacial meltout till derived from granite and gneiss

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
H1 - 4 to 10 inches: sandy loam
H2 - 10 to 17 inches: sandy loam
R - 17 to 27 inches: bedrock

Properties and qualities

Slope: 5 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Free face

Typical profile

R - 0 to 10 inches: bedrock

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Hermon

Percent of map unit: 3 percent
Landform: Moraines, ridges, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Howland

Percent of map unit: 2 percent
Landform: Drumlins, till plains, drumlinoid ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

HeC—Hermon sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w9rd
Elevation: 0 to 1,080 feet
Mean annual precipitation: 31 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

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

Description of Hermon, Very Stony

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainflank, mountainbase, side slope, nose slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly supraglacial meltout till derived from granite and gneiss

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
E - 2 to 3 inches: sandy loam
Bhs - 3 to 9 inches: sandy loam
Bs1 - 9 to 16 inches: very gravelly sandy loam
Bs2 - 16 to 32 inches: extremely gravelly loamy sand
C - 32 to 65 inches: very gravelly coarse sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.03 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 capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Monadnock, very stony

Percent of map unit: 8 percent
Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Peru, very stony

Percent of map unit: 3 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve
Microfeatures of landform position: Closed depressions, open depressions, closed depressions, open depressions
Down-slope shape: Convex, concave
Across-slope shape: Linear, concave
Hydric soil rating: No

Tunbridge, very stony

Percent of map unit: 3 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainflank, mountainbase, interfluve, nose slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Brayton, very stony

Percent of map unit: 1 percent
Landform: Hills, mountains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve
Microfeatures of landform position: Open depressions, closed depressions, closed depressions, open depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

HhC—Hermon sandy loam, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w9rj
Elevation: 130 to 980 feet
Mean annual precipitation: 31 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

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

Description of Hermon, Extremely Stony

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainflank, mountainbase, side slope, nose slope, interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly supraglacial meltout till derived from granite and gneiss

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
E - 2 to 3 inches: sandy loam
Bhs - 3 to 9 inches: sandy loam
Bs1 - 9 to 16 inches: very gravelly sandy loam
Bs2 - 16 to 32 inches: extremely gravelly loamy sand
C - 32 to 65 inches: very gravelly coarse sand

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 6.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.03 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 capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Monadnock, extremely stony

Percent of map unit: 8 percent
Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Peru, extremely stony

Percent of map unit: 3 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve, base slope
Microfeatures of landform position: Closed depressions, open depressions, closed depressions, open depressions
Down-slope shape: Convex, concave
Across-slope shape: Linear, concave
Hydric soil rating: No

Tunbridge, extremely stony

Percent of map unit: 3 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainbase, mountainflank, nose slope, interfluve, side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Brayton, extremely stony

Percent of map unit: 1 percent
Landform: Hills, mountains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, mountainflank, interfluve, side slope, nose slope, base 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

HvC—Howland silt loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w3y9
Elevation: 120 to 2,500 feet
Mean annual precipitation: 35 to 52 inches
Mean annual air temperature: 37 to 44 degrees F
Frost-free period: 80 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Howland

Setting

Landform: Drumlinoid ridges, drumlins
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
E - 2 to 4 inches: silt loam
Bs - 4 to 18 inches: gravelly silt loam
BC - 18 to 25 inches: gravelly silt loam
Cd - 25 to 65 inches: gravelly silt loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 21 to 33 inches to densic material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 17 to 26 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Elliottsville

Percent of map unit: 5 percent
Landform: Drumlinoid ridges, drumlins
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Telos

Percent of map unit: 4 percent
Landform: Drumlinoid ridges, drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Ragmuff

Percent of map unit: 4 percent
Landform: Drumlinoid ridges, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear

Hydric soil rating: No

Plaisted

Percent of map unit: 2 percent
Landform: Drumlinoid ridges, drumlins
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

MrB—Monarda-Burnham complex, 0 to 3 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2t0yn
Elevation: 120 to 2,500 feet
Mean annual precipitation: 34 to 51 inches
Mean annual air temperature: 37 to 44 degrees F
Frost-free period: 80 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Monarda and similar soils: 45 percent
Burnham and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Monarda

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy lodgment till

Typical profile

Oe - 0 to 3 inches: mucky peat
Eg - 3 to 6 inches: silt loam
Bg - 6 to 20 inches: silt loam
Cd - 20 to 65 inches: gravelly silt loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 12 to 27 inches to densic material
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 0 to 12 inches

Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Description of Burnham

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy lodgment till

Typical profile

Oa - 0 to 13 inches: muck
Bg - 13 to 18 inches: channery silt loam
Cdg - 18 to 65 inches: channery silt loam

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 5 to 20 inches to densic material
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Telos

Percent of map unit: 7 percent
Landform: Ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ragmuff

Percent of map unit: 5 percent
Landform: Ground moraines
Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Monarda, 3 to 8 percent slopes
Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Wonsqueak
Percent of map unit: 1 percent
Landform: Ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

MsC—Monarda-Burnham complex, 0 to 15 percent slopes, extremely stony

Map Unit Setting
National map unit symbol: 2w3z8
Elevation: 120 to 2,500 feet
Mean annual precipitation: 35 to 52 inches
Mean annual air temperature: 37 to 44 degrees F
Frost-free period: 80 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition
Monarda and similar soils: 50 percent
Burnham and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Monarda

Setting
Landform: Drumlinoid ridges
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy lodgment till

Typical profile

Oe - 0 to 3 inches: mucky peat
Eg - 3 to 6 inches: silt loam
Bg - 6 to 20 inches: silt loam
Cd - 20 to 65 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 12 to 27 inches to densic material
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Description of Burnham

Setting

Landform: Drumlinoid ridges
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy lodgment till

Typical profile

Oa - 0 to 13 inches: muck
Bg - 13 to 18 inches: channery silt loam
Cdg - 18 to 65 inches: channery silt loam

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 5 to 20 inches to densic material
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Telos

Percent of map unit: 9 percent
Landform: Drumlinoid ridges
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Ragmuff

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

Chesuncook

Percent of map unit: 1 percent
Landform: Drumlinoid ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

PgD—Plaisted gravelly loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2w3yd
Elevation: 300 to 2,500 feet
Mean annual precipitation: 35 to 52 inches
Mean annual air temperature: 37 to 44 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Plaisted

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till

Typical profile

Ap - 0 to 7 inches: gravelly loam
Bs - 7 to 16 inches: gravelly silt loam
BC - 16 to 25 inches: gravelly silt loam
Cd - 25 to 65 inches: gravelly silt loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 30 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 26 to 41 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Howland

Percent of map unit: 7 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Elliottsville

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Telos

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Plaisted, very stony

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

ShD—Stony land, hermon material, strongly sloping

Map Unit Setting

National map unit symbol: 9kv9
Elevation: 10 to 2,800 feet
Mean annual precipitation: 30 to 48 inches
Mean annual air temperature: 37 to 54 degrees F
Frost-free period: 80 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Hermon and similar soils: 94 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hermon

Setting

Landform: Moraines, ridges, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal supraglacial meltout till derived from granite and gneiss

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 7 inches: very cobbly sandy loam
H2 - 7 to 19 inches: gravelly sandy loam
H3 - 19 to 26 inches: very gravelly loamy sand
H4 - 26 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 15 to 45 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Canaan

Percent of map unit: 2 percent
Landform: Hills, mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Free face
Hydric soil rating: No

Atherton

Percent of map unit: 1 percent
Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Hydric soil rating: Yes

Schoodic

Percent of map unit: 1 percent
Landform: Ridges, mountains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

W—Water bodies

Map Unit Composition

Water bodies: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water Bodies

Setting

Landform: Lakes

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SECTION 12

STORMWATER MANAGEMENT

Pre-Hydrology Report
Post-Hydrology Report
Millinocket Lake Phosphorus Worksheets
Pemadumcook Chair Phosphorus Worksheets
Soil Profile Logs

SECTION 12

STORMWATER MANAGEMENT

The purpose of this Stormwater Management Plan is to ensure compliance with the Maine Department of Environmental Protection (MDEP) Chapter 500 regulations. The proposed project includes the permitting of 41 subdivided lots for single-family homes, nine mixed-use lots, and several existing facilities, as outlined below.

Existing Facilities

Several of the facilities proposed in this application have already been permitted through the Land Use Planning Commission (LUPC) and constructed. Specifically, the Event Center and Activity Center were completed in 2021. Additionally, utility infrastructure has been installed throughout the site, including a community solar array (installed in 2021) and a cell tower (constructed in 2019). The site also includes an existing network of roads, recreational trails, and two gravel pits.

Matthew Polstein, the owner of Hammond Ridge Development Company, LLC, constructed a single-family home on the site in 2021. A comprehensive list of all existing facilities on the parcel can be found in **Section 31** of this application.

Site Overview and Watersheds

The parcel owned by the Applicant spans approximately 1,424 acres and lies within three distinct lake watersheds: the Millinocket Lake Watershed, the Pemadumcook Chain Watershed, and the Smith Pond (Little) Watershed. According to the Maine Watershed Map published by ArcGIS, the project area is situated within these three watersheds. However, based on the "Appendix C: Per Acre Phosphorus Allocations for Selected Maine Lakes" published by MDEP, only the Millinocket Lake and Pemadumcook Chain Watersheds require analysis for phosphorus export.

Pre-Development Conditions

The parcel has historically been used for timber harvesting and contains an established network of roads that predates Site Law. Therefore, for the purposes of this Stormwater Management Plan, the parcel's pre-development conditions have been assumed to align with its status prior to Site Law enactment. All development that occurred before the implementation of Stormwater Law in and Site Law has been considered as part of the pre-development conditions and will not be factored into the calculations for new impervious surfaces, stormwater quality, or phosphorus export.

A table listing the existing impervious surfaces on the parcel is provided below:

TABLE 1 | EXISTING IMPERVIOUS (PREDATES 1980)

DESCRIPTION	AREA (SF/AC)
Black Cat Road	110,325 SF (2.53 AC)
Katahdin View Road	38,881 SF (0.89 AC)
Hammond Ridge Road/Gravity Lane (pre-expansion)	44,581 SF (1.02 AC)

The development is proposing to treat runoff with vegetated buffers and roof dripline filters in accordance with MDEP Stormwater BMP Manual Chapter 5: Vegetated Buffers to treat the runoff for quality control and phosphorus export.

Erosion control measures will be in place prior to the start of any construction. Temporary and permanent measures will be installed in accordance with **Section 14** of this application. Upon completion of the construction and stabilization of all disturbed areas, the temporary erosion control measures will be removed.

Basic Standard Submission: Information is provided as required for the Basic Standard Submission in Section 14.0-Basic Standards.

General Standards Submission: The following Information is provided as required in the General Standard Submission.

1. *Treatment Requirements:*
   Details, Design, and Specifications: Sizing of the required stormwater treatment methods are included in Section 12A. The project intends to use vegetated buffers and roof dripline filters to treat runoff generated by roofs, walkways, driveways, and roads. The project provides a detailed post-development watershed treatment calculation summary at the end of **Section 12**, herein.
2. *Flooding Standard Submission:* The site ultimately drains to three separate bodies of water, Millinocket Lake, Pemadumcook Lake, and Smith Pond (Little). The development is required to meet the Flooding Standard.
3. *Phosphorus Standards Submission*: The project is located within two lake watersheds that are required to meet the Phosphorus Standard. Please refer to Section 12C.

SECTION 12A

STORMWATER QUALITY CONTROL NARRATIVE

The proposed project requires a Site Location of Development Act (SLODA) Permit, which mandates treatment of 95% of impervious areas and 80% of developed areas in accordance with MDEP Chapter 500 regulations. However, a portion of the impervious surfaces associated with this project qualifies as a "linear portion" under Chapter 500, meaning they only require 75% treatment of impervious surfaces and 50% treatment of developed areas.

To manage stormwater runoff, the applicant proposes a combination of forested vegetated buffers and roof dripline filters. The project will introduce approximately 771,185 square feet (17.7 acres) of new impervious surfaces and 541,015 square feet (12.4 acres) of lawn area.

The existing development currently has minimal lawn areas, with ditches that are not mowed or maintained as grass. The Applicant intends for the development to have a woodland aesthetic. It is assumed that 20% of each lot will be developed as lawn, which is a conservative estimate. Areas around drainage swales, roads, and buildings will revert to their pre-disturbance condition and will be maintained only as needed to prevent overgrowth onto roads, parking areas, and building perimeters.

Over the years, some existing logging roads have been widened. Specifically, Hammond Ridge Road/Gravity Lane, which begins near the proposed Maintenance Building off Katahdin View Drive and extends up to the cell tower and the Applicant's residential property, has been expanded. This widening has resulted in approximately 33,385 square feet of new impervious surface along the length of the road. At this time, the Applicant is not proposing to address the increased impervious area caused by the road widening.

The table below summarizes the impervious and developed areas created by the project and the associated treatment requirements.

TABLE 2 | PROJECT ROADWAY AREA (LINEAR)

PROJECT AREA	IMPERVIOUS AREA	DEVELOPED AREA
Roadway Area	335,504 SF	424,651 SF

TABLE 3 | STORMWATER TREATMENT AREA (LINEAR)

PROJECT AREA TREATED	ROADWAY AREA TREATED	
	IMPERVIOUS	DEVELOPED
All new roads	335,504 SF	424,651 SF
TOTAL	**323,399 SF**	**412,546 SF**
PRECENT TREATED OF AREAS	**96.39%**	**97.14%**

TABLE 4 | PROJECT AREA (SITE)

PROJECT AREA	IMPERVIOUS AREA	DEVELOPED AREA
Site Area	435,681 SF	1,011,789 SF

TABLE 5 | STORMWATER TREATMENT AREA (SITE)

PROJECT AREA TREATED	AREA TREATED	
	IMPERVIOUS	DEVELOPED
Site Area	435,681 SF	837,549 SF
TOTAL	**435,681 SF**	**837,549 SF**
PRECENT TREATED OF AREAS	**100%**	**82.7%**

CALCULATIONS:

Buffer 1:
Impervious Area: 71,727 SF (1.65 acres)
Landscaped Area: 112,818 SF (2.59 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class D soils, and 150-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(150 FT / imp acres x 1.65 acres) + (45 FT / veg acres x 2.59 acres) = 363.54 FT.
The berm length provided is 364 FT.

Buffer 2:
Impervious Area: 15,018 SF (0.34 acres)
Landscaped Area: 11,950 SF (0.27 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class C soils, and 150-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(100 FT / imp acres x 1.65 acres) + (30 FT / veg acres x 2.59 acres) = 42.71 FT.
The berm length provided is 43 FT.

Buffer 3:
Impervious Area: 23,245 SF (0.53 acres)
Landscaped Area: 19,782 SF (0.45 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT / imp acres x 0.53 acres) + (30 FT / veg acres x 0.45 acres) = 61.65 FT.
The berm length provided is 63 FT.

Buffer 4:
Impervious Area: 1,800 SF (0.04 acres)
Landscaped Area: 4,356 SF (0.10 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(75 FT / imp acres x 0.04 acres) + (25 FT / veg acres x 0.10 acres) = 5.60 FT.
The berm length provided is 6 FT.

Buffer 5:
Impervious Area: 45.844 SF (1.05 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class D soils, and 150-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(150 FT / imp acres x 1.05 acres) + (45 FT / veg acres x 0 acres) = 157.87 FT.
The berm length provided is 158 FT.

Buffer 6:
Impervious Area: 58,150 SF (1.33 acres)
Landscaped Area: 85,115 SF (1.95 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class C soils, and 100-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(150 FT / imp acres x 1.33 acres) + (45 FT / veg acres x 1.95 acres) = 288.17 FT.
The berm length provided is 290 FT.

Buffer 7:
Impervious Area: 23,524 SF (0.22 acres)
Landscaped Area: 19,472 SF (0.45 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT / imp acres x 0.54 acres) + (30 FT / veg acres x 0.45 acres) = 62.01 FT.
The berm length provided is 63 FT.

Buffer 8:
Impervious Area: 3,477 SF (0.08 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class D soils, and 150-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(150 FT / imp acres x 0.08 acres) + (45 FT / veg acres x 0 acres) = 11.97 FT.
The berm length provided is 12 FT.

Buffer 9:
Impervious Area: 38,822 SF (0.89 acres)
Landscaped Area: 29,447 SF (0.68 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class C soils, and 100-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(150 FT / imp acres x 0.89 acres) + (45 FT / veg acres x 0.68 acres) = 164.10 FT.
The berm length provided is 165 FT.

Buffer 10:
Impervious Area: 19,479 SF (0.45 acres)
Landscaped Area: 24,045 SF (0.55 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT / imp acres x 0.45 acres) + (30 FT / veg acres x 0.55 acres) = 56.81 FT.
The berm length provided is 57 FT.

Buffer 11:
Impervious Area: 20,811 SF (0.48 acres)
Landscaped Area: 9,583 SF (0.22 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(75 FT / imp acres x 0.48 acres) + (25 FT/ veg acres x 0.22 acres) = 41.33 FT.
The berm length provided is 42 FT.

Buffer 12:
Impervious Area: 11,372 SF (0.26 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class D soils, and 150-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(150 FT / imp acres x 0.26 acres) + (45 FT / veg acres x 0 acres) = 39.16 FT.
The berm length provided is 40 FT.

Buffer 13:
Impervious Area: 28,800 SF (0.66 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT / imp acres x 0.66 acres) + (30 FT / veg acres x 0 acres) = 59.50 FT.
The berm length provided is 60 FT.

Buffer 14:
Impervious Area: 27,600 SF (0.63 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT / imp acres x 0.63 acres) + (30 FT / veg acres x 0 acres) = 57.02 FT.
The berm length provided is 58 FT.

Buffer 15:
Impervious Area: 38,544 SF (0.88 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT / imp acres x 0.88 acres) + (30 FT / veg acres x 0 acres) = 79.64 FT.
The berm length provided is 80 FT.

Buffer 16:
Impervious Area: 45,131 SF (1.04 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 0-8% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(75 FT / imp acres x 1.04 acres) + (25 FT/ veg acres x 0 acres) = 77.70 FT.
The berm length provided is 78 FT.

Buffer 17:
Impervious Area: 33,760 SF (0.78 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT / imp acres x 0.78 acres) + (30 FT / veg acres x 0 acres) = 69.75 FT.
The berm length provided is 70 FT.

Buffer 18:
Impervious Area: 11,487 SF (0.26 acres)
Landscaped Area: 0 SF (0 acres)

Chapter 500 sizing to calculate the berm length is based on Table 5-5 of the *MDEP Stormwater BMPs Technical Design Manual*. For a forested buffer, 9-15% slope, class A soils, and 75-foot flow path through the buffer, the length of berm is calculated by:

Length of Berm:
(90 FT/ imp acres x 0.26 acres) + (30 FT/ veg acres x 0 acres) = 23.73 FT.
The berm length provided is 24 FT.

Roof Drip Line 1:
The proposed roof dripline filter will treat stormwater runoff from the single-family dwellings. The dripline has been sized to capture half of the roof area. The proposed single-family dwellings will be peaked and will include a dripline on both sides of the buildings. The exact dimensions of the buildings have not yet been finalized; therefore, a maximum roof area of 3,000 square feet and standard roof truss width of 32 feet have been assumed. The filter will include a geotextile separation liner to prevent infiltration and will outlet into natural drainage pathways.

Chapter 500 sizing to calculate the width of a roof dripline filter is based on Chapter 7.5 of the *MDEP Stormwater BMPs Technical Design Manual*.

Roof Area: 3,000 SF
Building Length: 94 FT

Required Treatment Volume:
= 1-inch * (Roof Area/2)
= (1/12) * (3,000/2 SF)
= 125 CF (Proposed filter has 131 CF at 12 inches of reservoir layer)

Required Filter Width:
= (Treatment Volume) / (Building Length * Depth * Porosity of Stone)
= (125 CF) / (94 LF * 1 LF * 0.4)
= 3.33 LF (Proposed filter is 3.5 LF wide)

Roof Drip Line 2:
The proposed roof dripline filter will treat stormwater runoff from the rental condominiums. The dripline has been sized to capture half of the roof area. The proposed condominiums will include a peaked roof and will include a dripline on both sides of the buildings. The condominiums will be 40 feet long by 24 feet wide. The filter will include a geotextile separation liner to prevent infiltration and will outlet into natural drainage pathways.

Chapter 500 sizing to calculate the width of a roof dripline filter is based on Chapter 7.5 of the *MDEP Stormwater BMPs Technical Design Manual*.

Roof Area: 960 SF
Building Length: 40 FT

Required Treatment Volume:
= 1-inch * (Roof Area/2)
= (1/12 FT) * (960/2 SF)
= 40 CF (Proposed filter has 48 CF at 12-inches of reservoir layer)

Required Filter Width:
= (Treatment Volume) / (Building Length * Depth * Porosity of Stone)
= (40 CF) / (40 LF * 1 LF * 0.4)
= 2.5 LF (Proposed filter is 3 LF wide)

Roof Drip Line 3:
The proposed roof dripline filter will treat stormwater runoff from the rental cabins. The dripline has been sized to capture half of the roof area. The proposed cabins will have a peaked roof and will include a dripline on both sides of the buildings. The condominiums will be 40 feet long by 20 feet wide. The filter will include a geotextile separation liner to prevent infiltration and will outlet into natural drainage pathways.

Chapter 500 sizing to calculate the width of a roof dripline filter is based on Chapter 7.5 of the *MDEP Stormwater BMPs Technical Design Manual*.

Roof Area: 800 SF
Building Length: 40 LF

Required Treatment Volume:
= 1-inch * (Roof Area/2)
= (1/12 LF) * (800 /2 SF)
= 33 CF (Proposed filter has 40 CF at 12-inches of reservoir layer)

Required Filter Width:
= (Treatment Volume) / (Building Length * Depth * Porosity of Stone)
= (40 CF) / (40 LF * 1 LF * 0.4)
= 2.1 LF (Proposed filter is 2.5 LF wide)

SECTION 12B

STORMWATER PEAK RUNOFF CONTROL NARRATIVE

To meet the Flooding Standard, HydroCAD calculations were performed to compare pre-development and post-development conditions. Curve numbers and peak runoff flows were calculated using HydroCAD.

The pre-development site is primarily forested with gravel roads, while the post-development site has been analyzed in terms of three watersheds, each corresponding to the lake it drains into. According to the pre- and post-development hydrology plans, runoff from the development flows into three separate lakes: Millinocket Lake, Pemadumcook Chain Lake, and Smith Pond (Little). Given the size of the parcel and the change in land use, runoff generally follows existing drainage patterns.

To assess the impact of development on runoff, three summation points were used to compare peak flow for the 2-year, 10-year, and 25-year storm events. These points are located along the property line for each sub-watershed, allowing for a direct comparison of pre- and post-development conditions.

Based on the results of the HydroCAD, it is expected that stormwater runoff from the site will be similar or less in post-development conditions than in pre-development conditions. A comparison of the watershed area in both pre- and post-development is organized in the table below.

TABLE 6 | PEAK FLOW SUMMARY

		2 Year (cfs)	10 Year (cfs)	25 Year (cfs)	25 Year Net Change (cfs)	25 Year % Change
Summation Point 1	Pre	6.60	35.77	69.66	**-1.82**	**-2.61%**
	Post	6.72	35.25	67.84		
Summation Point 2	Pre	124.10	232.88	318.45	**0.00**	**0.00%**
	Post	124.10	232.80	318.45		
Summation Point 3	Pre	3.76	46.39	119.86	**0.00**	**0.00%**
	Post	3.76	46.39	119.86		

As shown in the table above, the summation points either decrease or remain the same. Notably, during the 2-year storm event at Summation Point 1, there is a slight increase of approximately 0.12 cubic feet per second (a less than 2% increase), which is considered negligible.

SECTION 12C

STORMWATER LAKE AT RISK (PHOSPHORUS) NARRATIVE

The parcel owned by the Applicant spans approximately 1,424 acres and lies within three distinct lake watersheds: the Millinocket Lake Watershed, the Pemadumcook Chain Watershed, and the Smith Pond (Little) Watershed. According to the Maine Watershed Map published by ArcGIS, the project area is situated within these three watersheds. However, based on the "Appendix C: Per Acre Phosphorus Allocations for Selected Maine Lakes" published by MDEP, only the Millinocket Lake and Pemadumcook Chain Watersheds require analysis for phosphorus export.

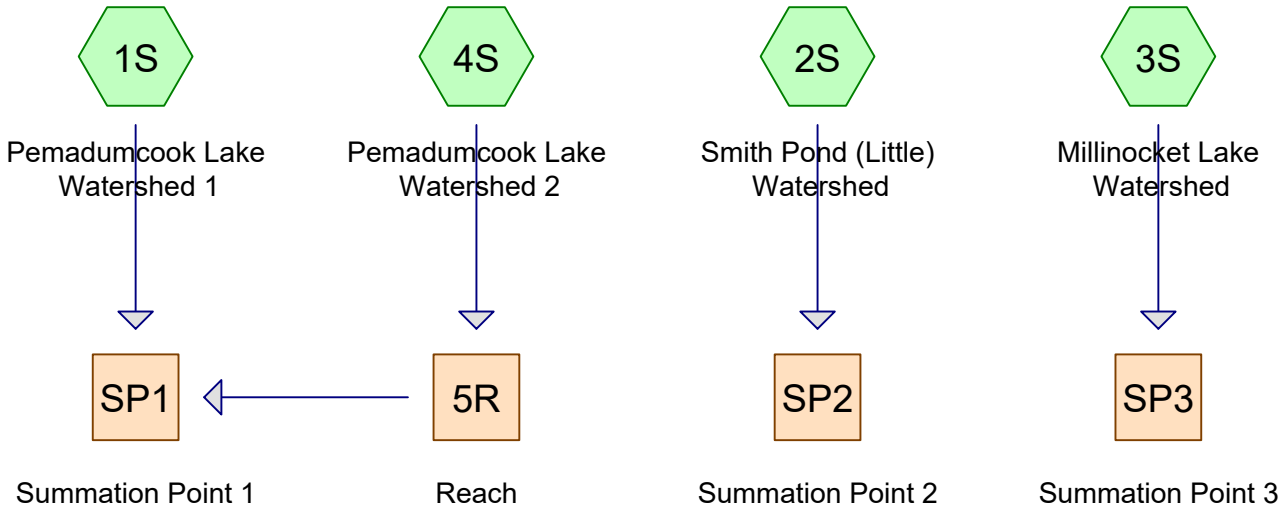
The worksheets related to phosphorus are attached as a reference. A summary of the findings is shown below.

TABLE 7 | PROJECT PHOSPHORUS EXPORT SUMMARY (MILLINOCKET LAKE)

Project Phosphorus Budget	18.70	Lbs/YR
Total Pre-treatment Phosphorus Export	26.56	Lbs/YR
Total Post-treatment Phosphorus Export	9.49	Lbs/YR
Total Phosphorus Mitigation Credit	0.00	Lbs/YR
PROJECT PHOSPHORUS EXPORT	**9.49**	**Lbs/YR**

TABLE 8 | PROJECT PHOSPHORUS EXPORT SUMMARY (PEMADUMCOOK CHAIN)

Project Phosphorus Budget	51.39	Lbs/YR
Total Pre-treatment Phosphorus Export	4.74	Lbs/YR
Total Post-treatment Phosphorus Export	1.93	Lbs/YR
Total Phosphorus Mitigation Credit	0.00	Lbs/YR
PROJECT PHOSPHORUS EXPORT	**1.93**	**Lbs/YR**



Subcat Reach Pond Link

Routing Diagram for PRE DEVELOPMENT
Prepared by Haley Ward, Printed 1/9/2025

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.329	98	Impervious A (4S)
3.172	98	Impervious, A (1S, 2S, 3S)
2.268	98	Impervious, D (2S, 3S)
173.638	98	Impervious, rock outcrop (2S, 3S)
606.773	30	Woods, Good, HSG A (1S, 2S, 3S, 4S)
69.434	70	Woods, Good, HSG C (1S, 3S)
570.176	77	Woods, Good, HSG D (1S, 2S, 3S, 4S)
0.215	98	impervious D (1S)
1,426.006	**59**	**TOTAL AREA**

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PemadumcookLake Runoff Area=8,378,393 sf 0.74% Impervious Runoff Depth>0.16"
Flow Length=6,020' Tc=140.9 min CN=59 Runoff=5.02 cfs 2.594 af

Subcatchment2S: Smith Pond (Little) Runoff Area=13,430,801 sf 45.39% Impervious Runoff Depth>1.16"
Flow Length=6,000' Tc=108.0 min CN=84 Runoff=124.10 cfs 29.678 af

Subcatchment3S: MillinocketLake Runoff Area=37,001,244 sf 4.46% Impervious Runoff Depth>0.04"
Flow Length=5,700' Tc=107.3 min CN=51 Runoff=3.76 cfs 2.739 af

Subcatchment4S: PemadumcookLake Runoff Area=3,306,368 sf 0.43% Impervious Runoff Depth>0.17"
Flow Length=1,900' Tc=61.5 min CN=59 Runoff=2.87 cfs 1.088 af

Reach 5R: Reach Avg. Flow Depth=0.33' Max Vel=0.77 fps Inflow=2.87 cfs 1.088 af
n=0.100 L=3,100.0' S=0.0194 '/' Capacity=4.35 cfs Outflow=1.87 cfs 0.948 af

Reach SP1: SummationPoint 1 Inflow=6.60 cfs 3.542 af
Outflow=6.60 cfs 3.542 af

Reach SP2: SummationPoint 2 Inflow=124.10 cfs 29.678 af
Outflow=124.10 cfs 29.678 af

Reach SP3: SummationPoint 3 Inflow=3.76 cfs 2.739 af
Outflow=3.76 cfs 2.739 af

Total Runoff Area = 1,426.006 ac Runoff Volume = 36.098 af Average Runoff Depth = 0.30"
87.40% Pervious = 1,246.383 ac 12.60% Impervious = 179.623 ac

Summary for Subcatchment 1S: Pemadumcook Lake Watershed 1

Runoff = 5.02 cfs @ 14.41 hrs, Volume= 2.594 af, Depth> 0.16"
Routed to Reach SP1 : Summation Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	52,888	98	Impervious, A
	3,956,584	77	Woods, Good, HSG D
	2,996,464	30	Woods, Good, HSG A
	1,363,072	70	Woods, Good, HSG C
*	9,385	98	impervious D
	8,378,393	59	Weighted Average
	8,316,120		99.26% Pervious Area
	62,273		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.4	100	0.0400	0.05		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.0	320	0.1300	1.80		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.3	560	0.0400	1.00		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
1.6	130	0.0700	1.32		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
11.3	680	0.0400	1.00		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
26.0	1,560	0.0400	1.00		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
7.2	375	0.0300	0.87		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
4.0	295	0.0600	1.22		**Shallow Concentrated Flow, SCF-7** Woodland Kv= 5.0 fps
47.1	2,000	0.0200	0.71		**Shallow Concentrated Flow, SCF-8** Woodland Kv= 5.0 fps
140.9	6,020	Total			

Summary for Subcatchment 2S: Smith Pond (Little) Watershed

Runoff = 124.10 cfs @ 13.32 hrs, Volume= 29.678 af, Depth> 1.16"
Routed to Reach SP2 : Summation Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	984	98	Impervious, A
*	10,684	98	Impervious, D
	6,471,272	77	Woods, Good, HSG D
	863,499	30	Woods, Good, HSG A
*	6,084,362	98	Impervious, rock outcrop
	13,430,801	84	Weighted Average
	7,334,771		54.61% Pervious Area
	6,096,030		45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1200	0.08		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
1.3	170	0.2000	2.24		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.7	715	0.0600	1.22		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
8.4	910	0.1300	1.80		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
52.8	2,745	0.0300	0.87		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
12.2	1,100	0.0900	1.50		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
108.0	6,000	Total			

Summary for Subcatchment 3S: Millinocket Lake Watershed

Runoff = 3.76 cfs @ 17.05 hrs, Volume= 2.739 af, Depth> 0.04"
Routed to Reach SP3 : Summation Point 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	84,316	98	Impervious, A
*	88,121	98	Impervious, D
	1,661,480	70	Woods, Good, HSG C
	12,363,824	77	Woods, Good, HSG D
	21,324,206	30	Woods, Good, HSG A
*	1,479,297	98	Impervious, rock outcrop
	37,001,244	51	Weighted Average
	35,349,510		95.54% Pervious Area
	1,651,734		4.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
7.9	410	0.0300	0.87		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
10.7	1,155	0.1300	1.80		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
11.8	1,000	0.0800	1.41		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
20.9	2,350	0.1400	1.87		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
13.2	560	0.0200	0.71		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
1.3	125	0.1100	1.66		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
107.3	5,700	Total			

Summary for Subcatchment 4S: Pemadumcook Lake Watershed 2

Runoff = 2.87 cfs @ 12.99 hrs, Volume= 1.088 af, Depth> 0.17"
Routed to Reach 5R : Reach

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	14,344	98	Impervious A
	1,246,856	30	Woods, Good, HSG A
	2,045,168	77	Woods, Good, HSG D
	3,306,368	59	Weighted Average
	3,292,024		99.57% Pervious Area
	14,344		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
20.0	1,800	0.0900	1.50		**Shallow Concentrated Flow, SCF** Woodland Kv= 5.0 fps
61.5	1,900	Total			

Summary for Reach 5R: Reach

Inflow Area = 75.904 ac, 0.43% Impervious, Inflow Depth > 0.17" for 2-yr event
Inflow = 2.87 cfs @ 12.99 hrs, Volume= 1.088 af
Outflow = 1.87 cfs @ 15.23 hrs, Volume= 0.948 af, Atten= 35%, Lag= 134.6 min
Routed to Reach SP1 : Summation Point 1

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.77 fps, Min. Travel Time= 67.0 min
Avg. Velocity = 0.62 fps, Avg. Travel Time= 82.8 min

Peak Storage= 7,534 cf @ 14.12 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 10.64'
Bank-Full Depth= 0.50' Flow Area= 4.5 sf, Capacity= 4.35 cfs

4.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 10.0 '/' Top Width= 14.00'
Length= 3,100.0' Slope= 0.0194 '/'
Inlet Invert= 670.00', Outlet Invert= 610.00'

‡

Summary for Reach SP1: Summation Point 1

Inflow Area = 268.245 ac, 0.66% Impervious, Inflow Depth > 0.16" for 2-yr event
Inflow = 6.60 cfs @ 14.67 hrs, Volume= 3.542 af
Outflow = 6.60 cfs @ 14.67 hrs, Volume= 3.542 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP2: Summation Point 2

Inflow Area = 308.329 ac, 45.39% Impervious, Inflow Depth > 1.16" for 2-yr event
Inflow = 124.10 cfs @ 13.32 hrs, Volume= 29.678 af
Outflow = 124.10 cfs @ 13.32 hrs, Volume= 29.678 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP3: Summation Point 3

Inflow Area = 849.432 ac, 4.46% Impervious, Inflow Depth > 0.04" for 2-yr event
Inflow = 3.76 cfs @ 17.05 hrs, Volume= 2.739 af
Outflow = 3.76 cfs @ 17.05 hrs, Volume= 2.739 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PemadumcookLake Runoff Area=8,378,393 sf 0.74% Impervious Runoff Depth>0.58"
Flow Length=6,020' Tc=140.9 min CN=59 Runoff=24.70 cfs 9.264 af

Subcatchment2S: Smith Pond (Little) Runoff Area=13,430,801 sf 45.39% Impervious Runoff Depth>2.13"
Flow Length=6,000' Tc=108.0 min CN=84 Runoff=232.80 cfs 54.791 af

Subcatchment3S: MillinocketLake Runoff Area=37,001,244 sf 4.46% Impervious Runoff Depth>0.29"
Flow Length=5,700' Tc=107.3 min CN=51 Runoff=46.39 cfs 20.236 af

Subcatchment4S: PemadumcookLake Runoff Area=3,306,368 sf 0.43% Impervious Runoff Depth>0.60"
Flow Length=1,900' Tc=61.5 min CN=59 Runoff=17.42 cfs 3.811 af

Reach 5R: Reach Avg. Flow Depth=0.87' Max Vel=1.15 fps Inflow=17.42 cfs 3.811 af
n=0.100 L=3,100.0' S=0.0194 '/' Capacity=4.35 cfs Outflow=11.16 cfs 3.567 af

Reach SP1: SummationPoint 1 Inflow=35.77 cfs 12.831 af
Outflow=35.77 cfs 12.831 af

Reach SP2: SummationPoint 2 Inflow=232.80 cfs 54.791 af
Outflow=232.80 cfs 54.791 af

Reach SP3: SummationPoint 3 Inflow=46.39 cfs 20.236 af
Outflow=46.39 cfs 20.236 af

Total Runoff Area = 1,426.006 ac Runoff Volume = 88.102 af Average Runoff Depth = 0.74"
87.40% Pervious = 1,246.383 ac 12.60% Impervious = 179.623 ac

Summary for Subcatchment 1S: Pemadumcook Lake Watershed 1

Runoff = 24.70 cfs @ 13.94 hrs, Volume= 9.264 af, Depth> 0.58"
Routed to Reach SP1 : Summation Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	52,888	98	Impervious, A
	3,956,584	77	Woods, Good, HSG D
	2,996,464	30	Woods, Good, HSG A
	1,363,072	70	Woods, Good, HSG C
*	9,385	98	impervious D
	8,378,393	59	Weighted Average
	8,316,120		99.26% Pervious Area
	62,273		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.4	100	0.0400	0.05		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.0	320	0.1300	1.80		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.3	560	0.0400	1.00		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
1.6	130	0.0700	1.32		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
11.3	680	0.0400	1.00		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
26.0	1,560	0.0400	1.00		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
7.2	375	0.0300	0.87		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
4.0	295	0.0600	1.22		**Shallow Concentrated Flow, SCF-7** Woodland Kv= 5.0 fps
47.1	2,000	0.0200	0.71		**Shallow Concentrated Flow, SCF-8** Woodland Kv= 5.0 fps
140.9	6,020	Total			

Summary for Subcatchment 2S: Smith Pond (Little) Watershed

Runoff = 232.80 cfs @ 13.31 hrs, Volume= 54.791 af, Depth> 2.13"
Routed to Reach SP2 : Summation Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	984	98	Impervious, A
*	10,684	98	Impervious, D
	6,471,272	77	Woods, Good, HSG D
	863,499	30	Woods, Good, HSG A
*	6,084,362	98	Impervious, rock outcrop
	13,430,801	84	Weighted Average
	7,334,771		54.61% Pervious Area
	6,096,030		45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1200	0.08		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
1.3	170	0.2000	2.24		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.7	715	0.0600	1.22		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
8.4	910	0.1300	1.80		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
52.8	2,745	0.0300	0.87		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
12.2	1,100	0.0900	1.50		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
108.0	6,000	Total			

Summary for Subcatchment 3S: Millinocket Lake Watershed

Runoff = 46.39 cfs @ 13.71 hrs, Volume= 20.236 af, Depth> 0.29"
Routed to Reach SP3 : Summation Point 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	84,316	98	Impervious, A
*	88,121	98	Impervious, D
	1,661,480	70	Woods, Good, HSG C
	12,363,824	77	Woods, Good, HSG D
	21,324,206	30	Woods, Good, HSG A
*	1,479,297	98	Impervious, rock outcrop
	37,001,244	51	Weighted Average
	35,349,510		95.54% Pervious Area
	1,651,734		4.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
7.9	410	0.0300	0.87		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
10.7	1,155	0.1300	1.80		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
11.8	1,000	0.0800	1.41		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
20.9	2,350	0.1400	1.87		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
13.2	560	0.0200	0.71		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
1.3	125	0.1100	1.66		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
107.3	5,700	Total			

Summary for Subcatchment 4S: Pemadumcook Lake Watershed 2

Runoff = 17.42 cfs @ 12.78 hrs, Volume= 3.811 af, Depth> 0.60"
Routed to Reach 5R : Reach

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	14,344	98	Impervious A
	1,246,856	30	Woods, Good, HSG A
	2,045,168	77	Woods, Good, HSG D
	3,306,368	59	Weighted Average
	3,292,024		99.57% Pervious Area
	14,344		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
20.0	1,800	0.0900	1.50		**Shallow Concentrated Flow, SCF** Woodland Kv= 5.0 fps
61.5	1,900	Total			

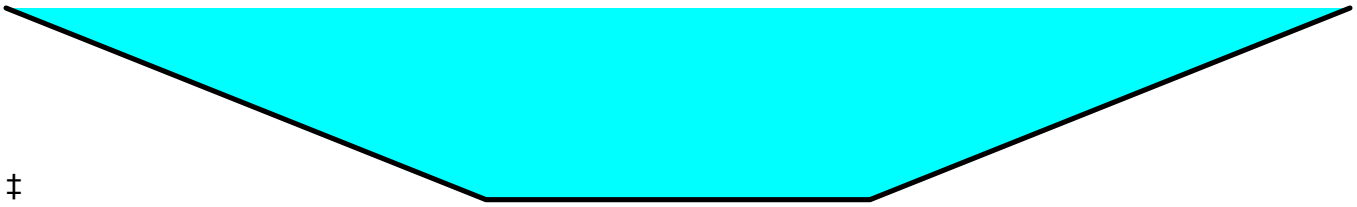
Summary for Reach 5R: Reach

Inflow Area = 75.904 ac, 0.43% Impervious, Inflow Depth > 0.60" for 10-yr event
Inflow = 17.42 cfs @ 12.78 hrs, Volume= 3.811 af
Outflow = 11.16 cfs @ 14.09 hrs, Volume= 3.567 af, Atten= 36%, Lag= 78.3 min
Routed to Reach SP1 : Summation Point 1

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.15 fps, Min. Travel Time= 44.8 min
Avg. Velocity = 0.85 fps, Avg. Travel Time= 60.6 min

Peak Storage= 30,022 cf @ 13.34 hrs
Average Depth at Peak Storage= 0.87' , Surface Width= 21.43'
Bank-Full Depth= 0.50' Flow Area= 4.5 sf, Capacity= 4.35 cfs

4.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 10.0 '/' Top Width= 14.00'
Length= 3,100.0' Slope= 0.0194 '/'
Inlet Invert= 670.00', Outlet Invert= 610.00'



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Summary for Reach SP1: Summation Point 1

Inflow Area = 268.245 ac, 0.66% Impervious, Inflow Depth > 0.57" for 10-yr event
Inflow = 35.77 cfs @ 14.04 hrs, Volume= 12.831 af
Outflow = 35.77 cfs @ 14.04 hrs, Volume= 12.831 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP2: Summation Point 2

Inflow Area = 308.329 ac, 45.39% Impervious, Inflow Depth > 2.13" for 10-yr event
Inflow = 232.80 cfs @ 13.31 hrs, Volume= 54.791 af
Outflow = 232.80 cfs @ 13.31 hrs, Volume= 54.791 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP3: Summation Point 3

Inflow Area = 849.432 ac, 4.46% Impervious, Inflow Depth > 0.29" for 10-yr event
Inflow = 46.39 cfs @ 13.71 hrs, Volume= 20.236 af
Outflow = 46.39 cfs @ 13.71 hrs, Volume= 20.236 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PemadumcookLake Runoff Area=8,378,393 sf 0.74% Impervious Runoff Depth>1.00"
Flow Length=6,020' Tc=140.9 min CN=59 Runoff=47.44 cfs 16.095 af

Subcatchment2S: Smith Pond (Little) Runoff Area=13,430,801 sf 45.39% Impervious Runoff Depth>2.92"
Flow Length=6,000' Tc=108.0 min CN=84 Runoff=318.45 cfs 74.917 af

Subcatchment3S: MillinocketLake Runoff Area=37,001,244 sf 4.46% Impervious Runoff Depth>0.59"
Flow Length=5,700' Tc=107.3 min CN=51 Runoff=119.86 cfs 41.629 af

Subcatchment4S: PemadumcookLake Runoff Area=3,306,368 sf 0.43% Impervious Runoff Depth>1.04"
Flow Length=1,900' Tc=61.5 min CN=59 Runoff=34.59 cfs 6.585 af

Reach 5R: Reach Avg. Flow Depth=1.48' Max Vel=1.23 fps Inflow=34.59 cfs 6.585 af
n=0.100 L=3,100.0' S=0.0194 '/' Capacity=4.35 cfs Outflow=22.23 cfs 6.252 af

Reach SP1: SummationPoint 1 Inflow=69.66 cfs 22.347 af
Outflow=69.66 cfs 22.347 af

Reach SP2: SummationPoint 2 Inflow=318.45 cfs 74.917 af
Outflow=318.45 cfs 74.917 af

Reach SP3: SummationPoint 3 Inflow=119.86 cfs 41.629 af
Outflow=119.86 cfs 41.629 af

Total Runoff Area = 1,426.006 ac Runoff Volume = 139.226 af Average Runoff Depth = 1.17"
87.40% Pervious = 1,246.383 ac 12.60% Impervious = 179.623 ac

Summary for Subcatchment 1S: Pemadumcook Lake Watershed 1

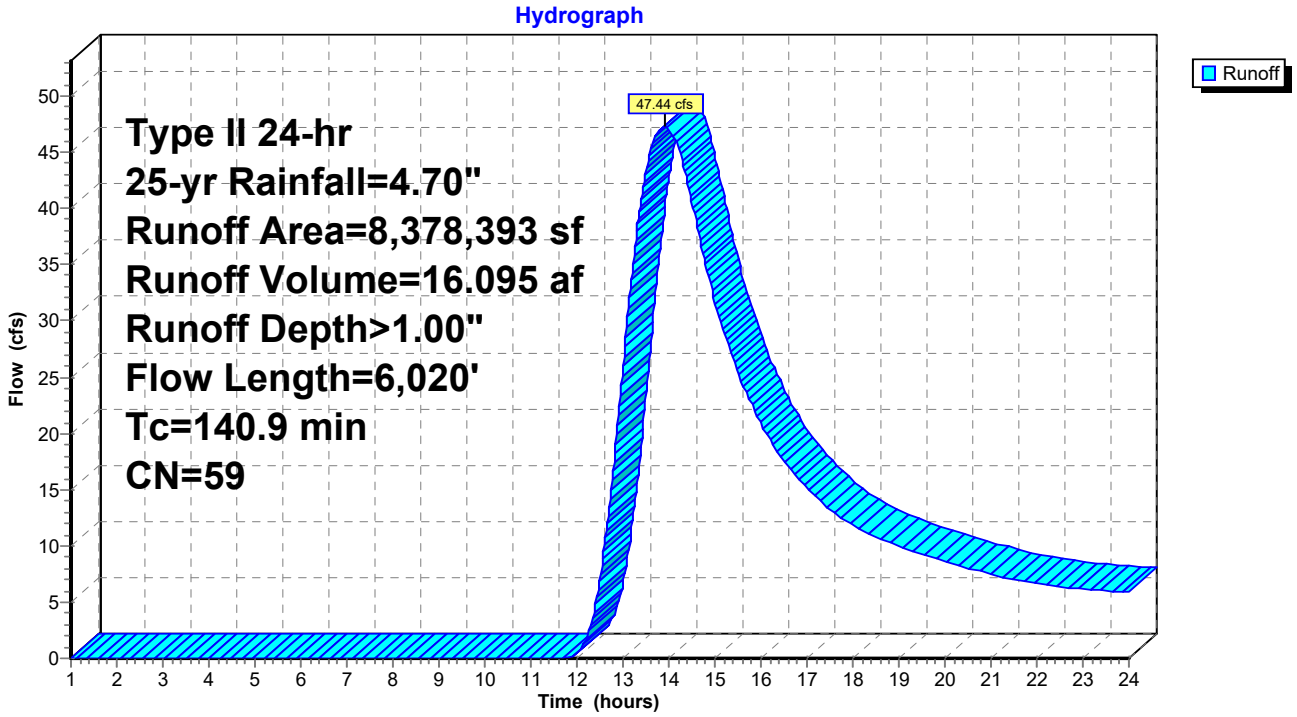
Runoff = 47.44 cfs @ 13.93 hrs, Volume= 16.095 af, Depth> 1.00"
Routed to Reach SP1 : Summation Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	52,888	98	Impervious, A
	3,956,584	77	Woods, Good, HSG D
	2,996,464	30	Woods, Good, HSG A
	1,363,072	70	Woods, Good, HSG C
*	9,385	98	impervious D
	8,378,393	59	Weighted Average
	8,316,120		99.26% Pervious Area
	62,273		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.4	100	0.0400	0.05		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.0	320	0.1300	1.80		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.3	560	0.0400	1.00		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
1.6	130	0.0700	1.32		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
11.3	680	0.0400	1.00		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
26.0	1,560	0.0400	1.00		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
7.2	375	0.0300	0.87		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
4.0	295	0.0600	1.22		**Shallow Concentrated Flow, SCF-7** Woodland Kv= 5.0 fps
47.1	2,000	0.0200	0.71		**Shallow Concentrated Flow, SCF-8** Woodland Kv= 5.0 fps
140.9	6,020	Total			

Subcatchment 1S: Pemadumcook Lake Watershed 1



Summary for Subcatchment 2S: Smith Pond (Little) Watershed

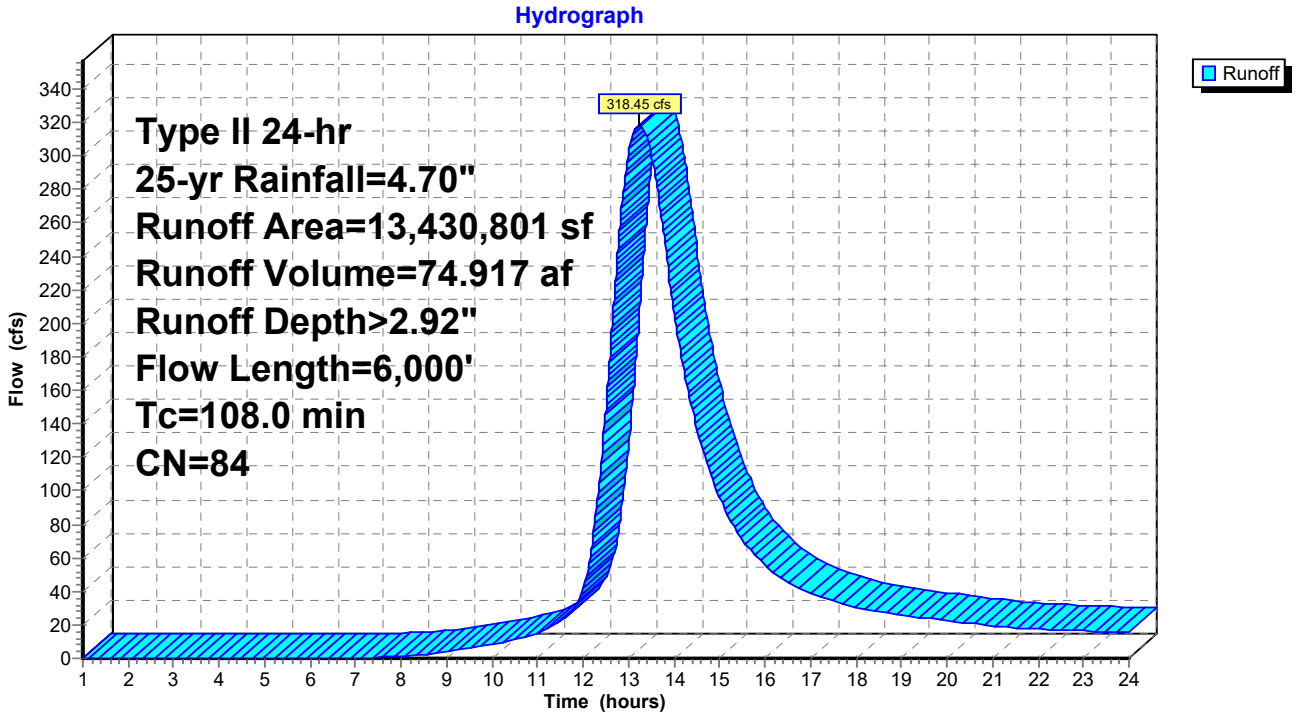
Runoff = 318.45 cfs @ 13.21 hrs, Volume= 74.917 af, Depth> 2.92"
Routed to Reach SP2 : Summation Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	984	98	Impervious, A
*	10,684	98	Impervious, D
	6,471,272	77	Woods, Good, HSG D
	863,499	30	Woods, Good, HSG A
*	6,084,362	98	Impervious, rock outcrop
	13,430,801	84	Weighted Average
	7,334,771		54.61% Pervious Area
	6,096,030		45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1200	0.08		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
1.3	170	0.2000	2.24		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.7	715	0.0600	1.22		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
8.4	910	0.1300	1.80		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
52.8	2,745	0.0300	0.87		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
12.2	1,100	0.0900	1.50		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
108.0	6,000	Total			

Subcatchment 2S: Smith Pond (Little) Watershed



Summary for Subcatchment 3S: Millinocket Lake Watershed

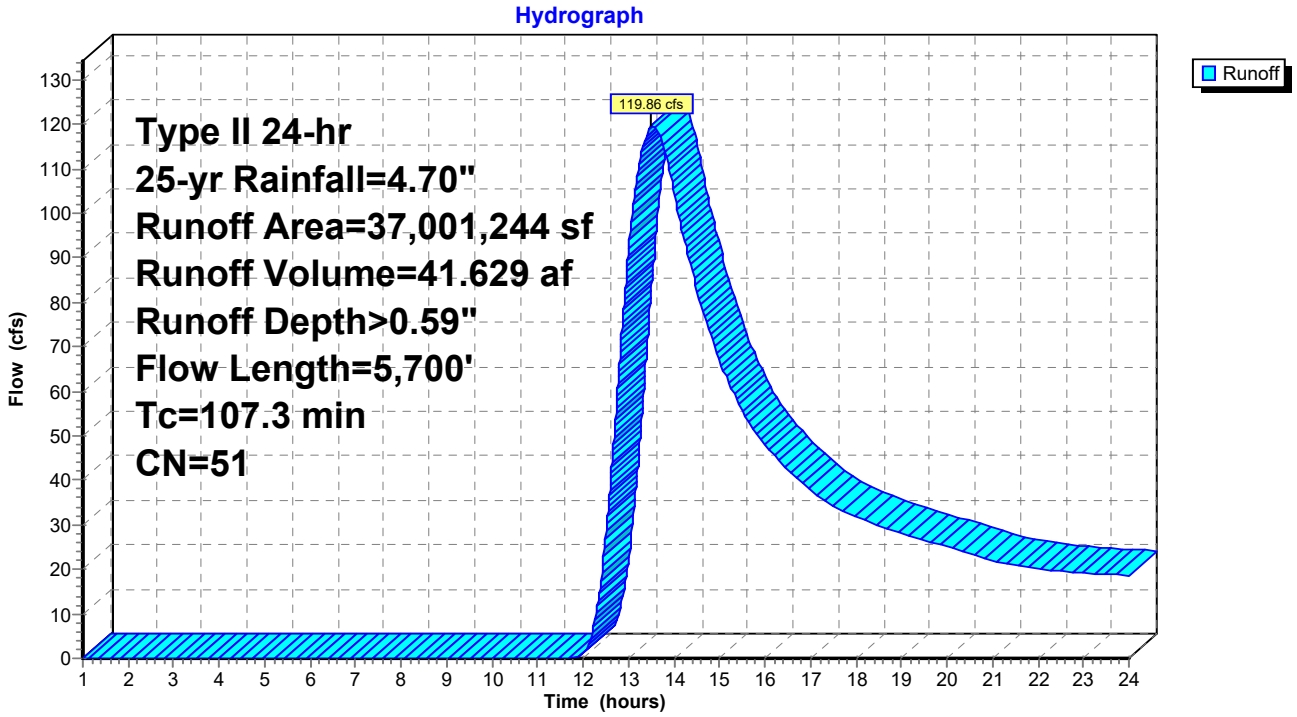
Runoff = 119.86 cfs @ 13.48 hrs, Volume= 41.629 af, Depth> 0.59"
Routed to Reach SP3 : Summation Point 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	84,316	98	Impervious, A
*	88,121	98	Impervious, D
	1,661,480	70	Woods, Good, HSG C
	12,363,824	77	Woods, Good, HSG D
	21,324,206	30	Woods, Good, HSG A
*	1,479,297	98	Impervious, rock outcrop
	37,001,244	51	Weighted Average
	35,349,510		95.54% Pervious Area
	1,651,734		4.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
7.9	410	0.0300	0.87		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
10.7	1,155	0.1300	1.80		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
11.8	1,000	0.0800	1.41		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
20.9	2,350	0.1400	1.87		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
13.2	560	0.0200	0.71		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
1.3	125	0.1100	1.66		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
107.3	5,700	Total			

Subcatchment 3S: Millinocket Lake Watershed



Summary for Subcatchment 4S: Pemadumcook Lake Watershed 2

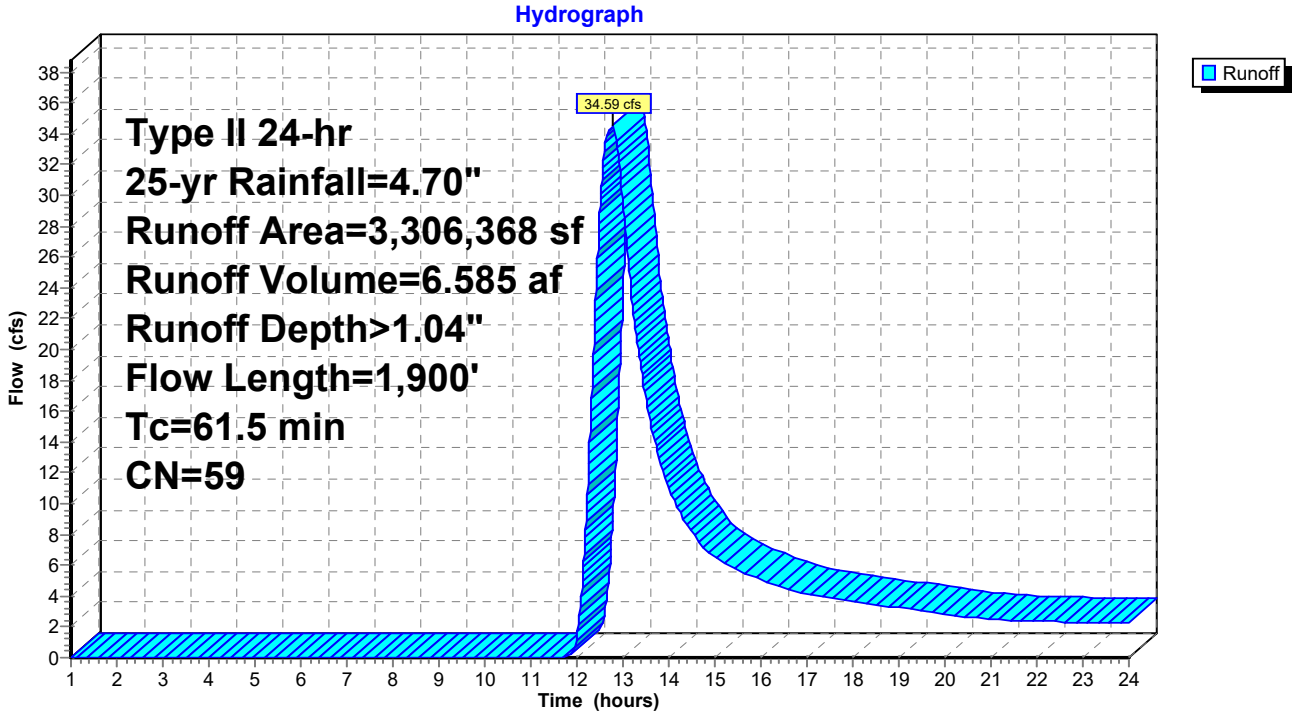
Runoff = 34.59 cfs @ 12.77 hrs, Volume= 6.585 af, Depth> 1.04"
Routed to Reach 5R : Reach

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	14,344	98	Impervious A
	1,246,856	30	Woods, Good, HSG A
	2,045,168	77	Woods, Good, HSG D
	3,306,368	59	Weighted Average
	3,292,024		99.57% Pervious Area
	14,344		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
20.0	1,800	0.0900	1.50		**Shallow Concentrated Flow, SCF** Woodland Kv= 5.0 fps
61.5	1,900	Total			

Subcatchment 4S: Pemadumcook Lake Watershed 2



Summary for Reach 5R: Reach

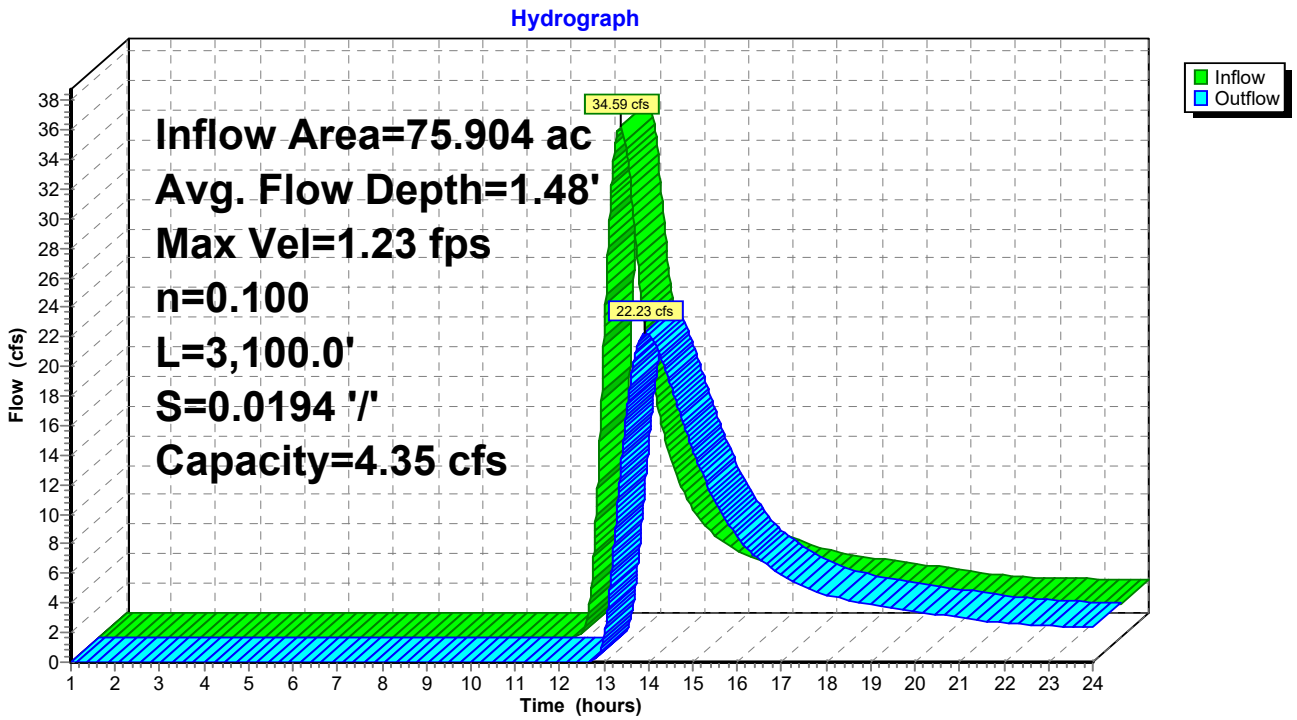
Inflow Area = 75.904 ac, 0.43% Impervious, Inflow Depth > 1.04" for 25-yr event
Inflow = 34.59 cfs @ 12.77 hrs, Volume= 6.585 af
Outflow = 22.23 cfs @ 13.94 hrs, Volume= 6.252 af, Atten= 36%, Lag= 70.3 min
Routed to Reach SP1 : Summation Point 1

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.23 fps, Min. Travel Time= 42.1 min
Avg. Velocity = 0.94 fps, Avg. Travel Time= 54.8 min

Peak Storage= 56,155 cf @ 13.24 hrs
Average Depth at Peak Storage= 1.48' , Surface Width= 33.52'
Bank-Full Depth= 0.50' Flow Area= 4.5 sf, Capacity= 4.35 cfs

4.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 10.0 '/' Top Width= 14.00'
Length= 3,100.0' Slope= 0.0194 '/'
Inlet Invert= 670.00', Outlet Invert= 610.00'

‡

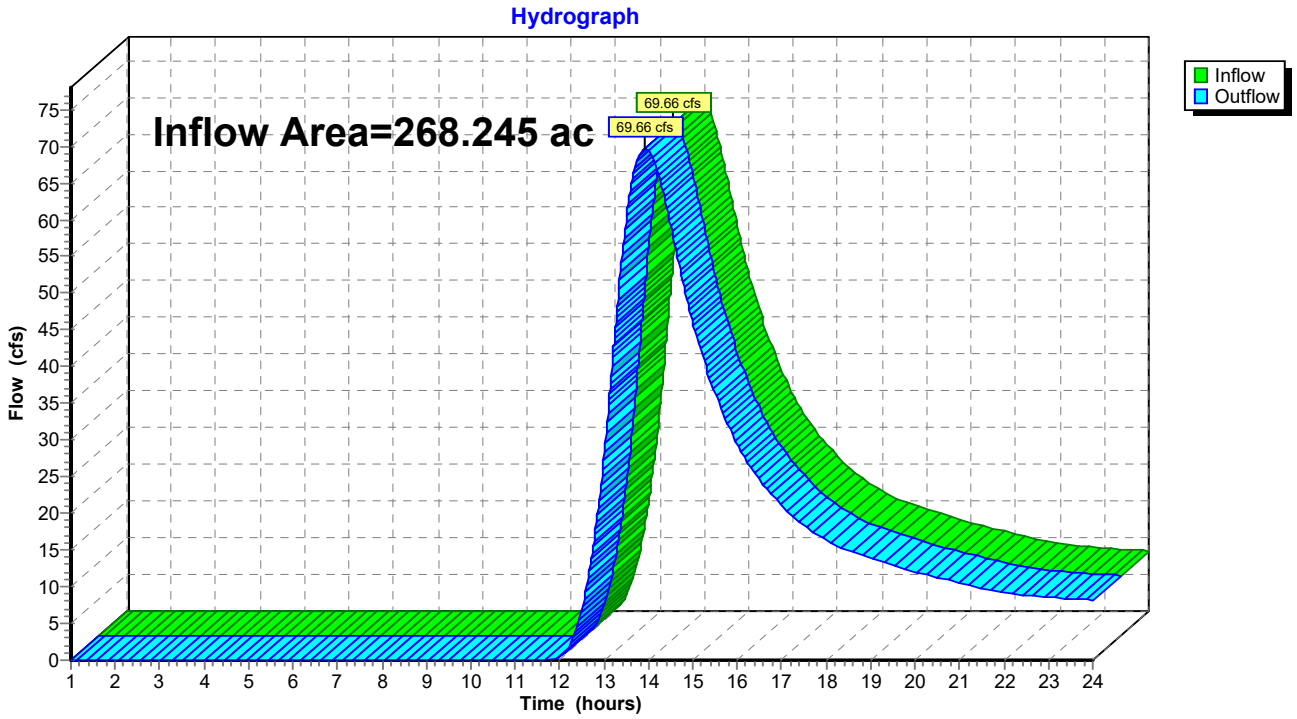


Summary for Reach SP1: Summation Point 1

Inflow Area = 268.245 ac, 0.66% Impervious, Inflow Depth > 1.00" for 25-yr event
Inflow = 69.66 cfs @ 13.93 hrs, Volume= 22.347 af
Outflow = 69.66 cfs @ 13.93 hrs, Volume= 22.347 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Reach SP1: Summation Point 1

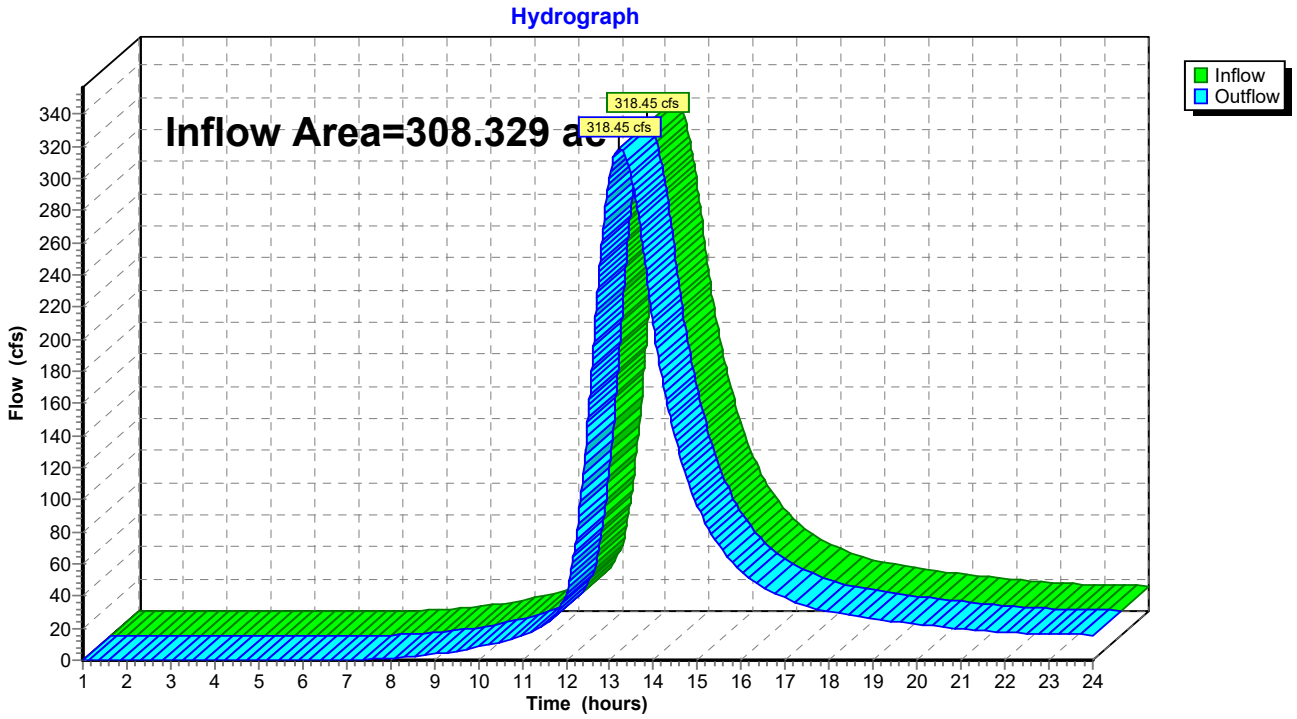


Summary for Reach SP2: Summation Point 2

Inflow Area = 308.329 ac, 45.39% Impervious, Inflow Depth > 2.92" for 25-yr event
Inflow = 318.45 cfs @ 13.21 hrs, Volume= 74.917 af
Outflow = 318.45 cfs @ 13.21 hrs, Volume= 74.917 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Reach SP2: Summation Point 2

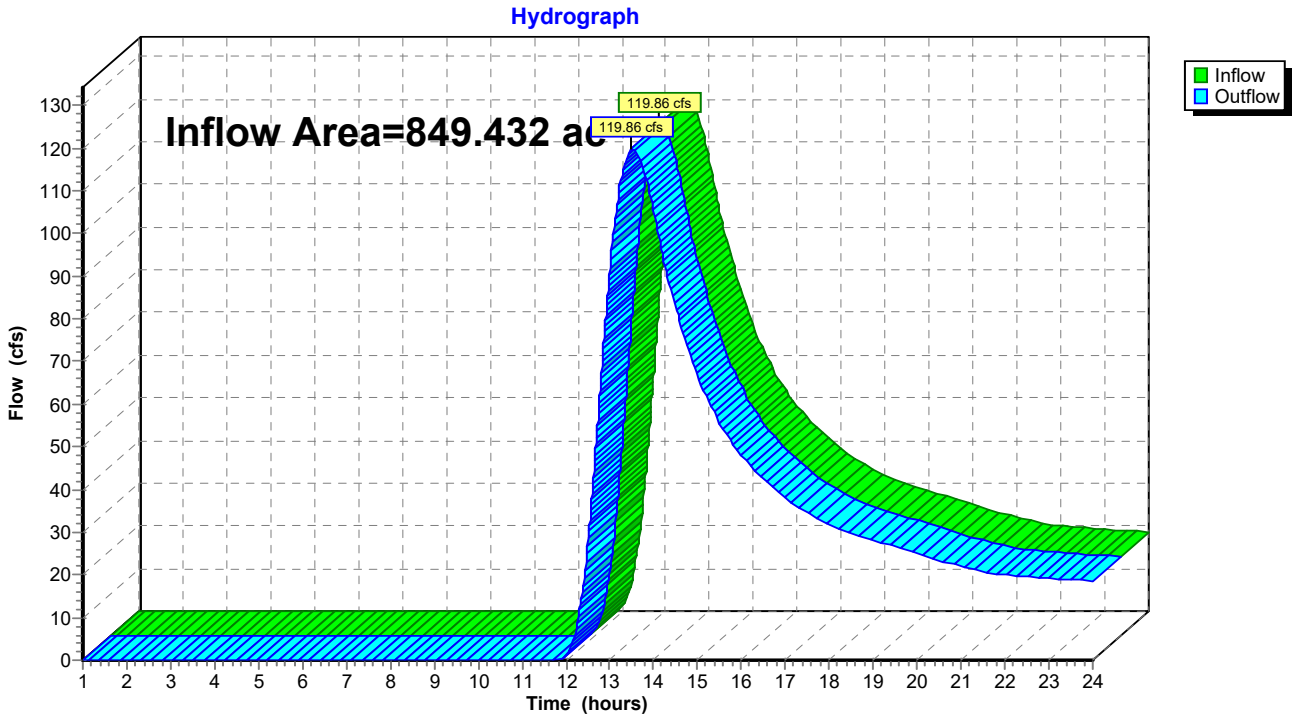


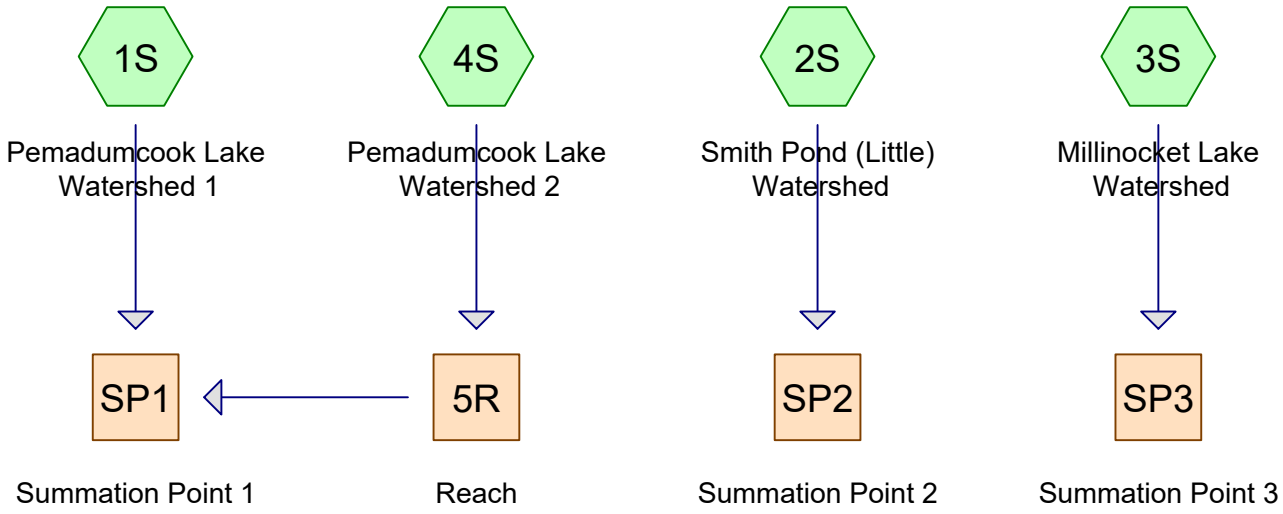
Summary for Reach SP3: Summation Point 3

Inflow Area = 849.432 ac, 4.46% Impervious, Inflow Depth > 0.59" for 25-yr event
Inflow = 119.86 cfs @ 13.48 hrs, Volume= 41.629 af
Outflow = 119.86 cfs @ 13.48 hrs, Volume= 41.629 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Reach SP3: Summation Point 3





Subcat Reach Pond Link

Routing Diagram for POST DEVELOPMENT
Prepared by Haley Ward, Printed 1/9/2025

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.328	39	>75% Grass cover, Good, HSG A (3S)
2.705	74	>75% Grass cover, Good, HSG C (3S)
5.387	80	>75% Grass cover, Good, HSG D (1S, 3S)
18.199	98	Impervious (3S)
1.365	98	Impervious A (4S)
1.065	98	Impervious, A (1S, 2S)
2.502	98	Impervious, D (1S, 2S)
33.960	98	Impervious, rock outcropping (3S)
139.678	98	Rock outcropping (2S)
594.499	30	Woods, Good, HSG A (1S, 2S, 3S, 4S)
63.772	70	Woods, Good, HSG C (1S, 3S)
558.545	77	Woods, Good, HSG D (1S, 2S, 3S, 4S)
1,426.006	**60**	**TOTAL AREA**

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PemadumcookLake Runoff Area=8,378,393 sf 1.63% Impervious Runoff Depth>0.16"
Flow Length=6,020' Tc=140.9 min CN=59 Runoff=5.02 cfs 2.594 af

Subcatchment2S: Smith Pond (Little) Runoff Area=13,430,801 sf 45.44% Impervious Runoff Depth>1.16"
Flow Length=6,000' Tc=108.0 min CN=84 Runoff=124.10 cfs 29.678 af

Subcatchment3S: MillinocketLake Runoff Area=37,001,244 sf 6.14% Impervious Runoff Depth>0.04"
Flow Length=5,700' Tc=107.3 min CN=51 Runoff=3.76 cfs 2.739 af

Subcatchment4S: PemadumcookLake Runoff Area=3,306,368 sf 1.80% Impervious Runoff Depth>0.19"
Flow Length=1,900' Tc=81.7 min CN=60 Runoff=3.01 cfs 1.211 af

Reach 5R: Reach Avg. Flow Depth=0.36' Max Vel=0.80 fps Inflow=3.01 cfs 1.211 af
n=0.100 L=3,100.0' S=0.0194 '/' Capacity=4.35 cfs Outflow=2.16 cfs 1.064 af

Reach SP1: SummationPoint 1 Inflow=6.72 cfs 3.658 af
Outflow=6.72 cfs 3.658 af

Reach SP2: SummationPoint 2 Inflow=124.10 cfs 29.678 af
Outflow=124.10 cfs 29.678 af

Reach SP3: SummationPoint 3 Inflow=3.76 cfs 2.739 af
Outflow=3.76 cfs 2.739 af

Total Runoff Area = 1,426.006 ac Runoff Volume = 36.222 af Average Runoff Depth = 0.30"
86.20% Pervious = 1,229.237 ac 13.80% Impervious = 196.769 ac

Summary for Subcatchment 1S: Pemadumcook Lake Watershed 1

Runoff = 5.02 cfs @ 14.41 hrs, Volume= 2.594 af, Depth> 0.16"
Routed to Reach SP1 : Summation Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	44,781	98	Impervious, A
*	91,767	98	Impervious, D
	2,995,186	30	Woods, Good, HSG A
	1,363,072	70	Woods, Good, HSG C
	3,813,891	77	Woods, Good, HSG D
	69,696	80	>75% Grass cover, Good, HSG D
	8,378,393	59	Weighted Average
	8,241,845		98.37% Pervious Area
	136,548		1.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.4	100	0.0400	0.05		**Sheet Flow, SF-1** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.0	320	0.1300	1.80		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.3	560	0.0400	1.00		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
1.6	130	0.0700	1.32		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
11.3	680	0.0400	1.00		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
26.0	1,560	0.0400	1.00		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
7.2	375	0.0300	0.87		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
4.0	295	0.0600	1.22		**Shallow Concentrated Flow, SCF-7** Woodland Kv= 5.0 fps
47.1	2,000	0.0200	0.71		**Shallow Concentrated Flow, SCF-8** Woodland Kv= 5.0 fps
140.9	6,020	Total			

Summary for Subcatchment 2S: Smith Pond (Little) Watershed

Runoff = 124.10 cfs @ 13.32 hrs, Volume= 29.678 af, Depth> 1.16"
Routed to Reach SP2 : Summation Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	1,610	98	Impervious, A
*	17,220	98	Impervious, D
	862,873	30	Woods, Good, HSG A
	6,464,736	77	Woods, Good, HSG D
*	6,084,362	98	Rock outcropping
	13,430,801	84	Weighted Average
	7,327,609		54.56% Pervious Area
	6,103,192		45.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1200	0.08		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
1.3	170	0.2000	2.24		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.7	715	0.0600	1.22		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
8.4	910	0.1300	1.80		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
52.8	2,745	0.0300	0.87		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
12.2	1,100	0.0900	1.50		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
108.0	6,000	Total			

Summary for Subcatchment 3S: Millinocket Lake Watershed

Runoff = 3.76 cfs @ 17.05 hrs, Volume= 2.739 af, Depth> 0.04"
Routed to Reach SP3 : Summation Point 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	383,392	98	Impervious
*	128,802	98	Impervious
*	280,548	98	Impervious
	20,836,602	30	Woods, Good, HSG A
	1,414,848	70	Woods, Good, HSG C
	12,006,435	77	Woods, Good, HSG D
	188,528	39	>75% Grass cover, Good, HSG A
	117,830	74	>75% Grass cover, Good, HSG C
	164,962	80	>75% Grass cover, Good, HSG D
*	1,479,297	98	Impervious, rock outcropping
	37,001,244	51	Weighted Average
	34,729,205		93.86% Pervious Area
	2,272,039		6.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
7.9	410	0.0300	0.87		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
10.7	1,155	0.1300	1.80		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
11.8	1,000	0.0800	1.41		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
20.9	2,350	0.1400	1.87		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
13.2	560	0.0200	0.71		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
1.3	125	0.1100	1.66		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
107.3	5,700	Total			

Summary for Subcatchment 4S: Pemadumcook Lake Watershed 2

Runoff = 3.01 cfs @ 13.34 hrs, Volume= 1.211 af, Depth> 0.19"
Routed to Reach 5R : Reach

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	59,473	98	Impervious A
	1,201,727	30	Woods, Good, HSG A
	2,045,168	77	Woods, Good, HSG D
	3,306,368	60	Weighted Average
	3,246,895		98.20% Pervious Area
	59,473		1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
13.9	1,250	0.0900	1.50		**Shallow Concentrated Flow, SCF** Woodland Kv= 5.0 fps
22.7	100	0.0900	0.07		**Sheet Flow, SF-2** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.6	450	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
81.7	1,900	Total			

Summary for Reach 5R: Reach

Inflow Area = 75.904 ac, 1.80% Impervious, Inflow Depth > 0.19" for 2-yr event
Inflow = 3.01 cfs @ 13.34 hrs, Volume= 1.211 af
Outflow = 2.16 cfs @ 15.41 hrs, Volume= 1.064 af, Atten= 28%, Lag= 124.6 min
Routed to Reach SP1 : Summation Point 1

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.80 fps, Min. Travel Time= 64.4 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 80.7 min

Peak Storage= 8,358 cf @ 14.34 hrs
Average Depth at Peak Storage= 0.36' , Surface Width= 11.13'
Bank-Full Depth= 0.50' Flow Area= 4.5 sf, Capacity= 4.35 cfs

4.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 10.0 '/' Top Width= 14.00'
Length= 3,100.0' Slope= 0.0194 '/'
Inlet Invert= 670.00', Outlet Invert= 610.00'

‡

Summary for Reach SP1: Summation Point 1

Inflow Area = 268.245 ac, 1.68% Impervious, Inflow Depth > 0.16" for 2-yr event
Inflow = 6.72 cfs @ 14.87 hrs, Volume= 3.658 af
Outflow = 6.72 cfs @ 14.87 hrs, Volume= 3.658 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP2: Summation Point 2

Inflow Area = 308.329 ac, 45.44% Impervious, Inflow Depth > 1.16" for 2-yr event
Inflow = 124.10 cfs @ 13.32 hrs, Volume= 29.678 af
Outflow = 124.10 cfs @ 13.32 hrs, Volume= 29.678 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP3: Summation Point 3

Inflow Area = 849.432 ac, 6.14% Impervious, Inflow Depth > 0.04" for 2-yr event
Inflow = 3.76 cfs @ 17.05 hrs, Volume= 2.739 af
Outflow = 3.76 cfs @ 17.05 hrs, Volume= 2.739 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PemadumcookLake Runoff Area=8,378,393 sf 1.63% Impervious Runoff Depth>0.58"
Flow Length=6,020' Tc=140.9 min CN=59 Runoff=24.70 cfs 9.264 af

Subcatchment2S: Smith Pond (Little) Runoff Area=13,430,801 sf 45.44% Impervious Runoff Depth>2.13"
Flow Length=6,000' Tc=108.0 min CN=84 Runoff=232.80 cfs 54.791 af

Subcatchment3S: MillinocketLake Runoff Area=37,001,244 sf 6.14% Impervious Runoff Depth>0.29"
Flow Length=5,700' Tc=107.3 min CN=51 Runoff=46.39 cfs 20.236 af

Subcatchment4S: PemadumcookLake Runoff Area=3,306,368 sf 1.80% Impervious Runoff Depth>0.64"
Flow Length=1,900' Tc=81.7 min CN=60 Runoff=15.70 cfs 4.054 af

Reach 5R: Reach Avg. Flow Depth=0.88' Max Vel=1.15 fps Inflow=15.70 cfs 4.054 af
n=0.100 L=3,100.0' S=0.0194 '/' Capacity=4.35 cfs Outflow=11.27 cfs 3.799 af

Reach SP1: SummationPoint 1 Inflow=35.25 cfs 13.063 af
Outflow=35.25 cfs 13.063 af

Reach SP2: SummationPoint 2 Inflow=232.80 cfs 54.791 af
Outflow=232.80 cfs 54.791 af

Reach SP3: SummationPoint 3 Inflow=46.39 cfs 20.236 af
Outflow=46.39 cfs 20.236 af

Total Runoff Area = 1,426.006 ac Runoff Volume = 88.345 af Average Runoff Depth = 0.74"
86.20% Pervious = 1,229.237 ac 13.80% Impervious = 196.769 ac

Summary for Subcatchment 1S: Pemadumcook Lake Watershed 1

Runoff = 24.70 cfs @ 13.94 hrs, Volume= 9.264 af, Depth> 0.58"
Routed to Reach SP1 : Summation Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	44,781	98	Impervious, A
*	91,767	98	Impervious, D
	2,995,186	30	Woods, Good, HSG A
	1,363,072	70	Woods, Good, HSG C
	3,813,891	77	Woods, Good, HSG D
	69,696	80	>75% Grass cover, Good, HSG D
	8,378,393	59	Weighted Average
	8,241,845		98.37% Pervious Area
	136,548		1.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.4	100	0.0400	0.05		**Sheet Flow, SF-1** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.0	320	0.1300	1.80		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.3	560	0.0400	1.00		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
1.6	130	0.0700	1.32		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
11.3	680	0.0400	1.00		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
26.0	1,560	0.0400	1.00		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
7.2	375	0.0300	0.87		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
4.0	295	0.0600	1.22		**Shallow Concentrated Flow, SCF-7** Woodland Kv= 5.0 fps
47.1	2,000	0.0200	0.71		**Shallow Concentrated Flow, SCF-8** Woodland Kv= 5.0 fps
140.9	6,020	Total			

Summary for Subcatchment 2S: Smith Pond (Little) Watershed

Runoff = 232.80 cfs @ 13.31 hrs, Volume= 54.791 af, Depth> 2.13"
Routed to Reach SP2 : Summation Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	1,610	98	Impervious, A
*	17,220	98	Impervious, D
	862,873	30	Woods, Good, HSG A
	6,464,736	77	Woods, Good, HSG D
*	6,084,362	98	Rock outcropping
	13,430,801	84	Weighted Average
	7,327,609		54.56% Pervious Area
	6,103,192		45.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1200	0.08		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
1.3	170	0.2000	2.24		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.7	715	0.0600	1.22		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
8.4	910	0.1300	1.80		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
52.8	2,745	0.0300	0.87		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
12.2	1,100	0.0900	1.50		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
108.0	6,000	Total			

Summary for Subcatchment 3S: Millinocket Lake Watershed

Runoff = 46.39 cfs @ 13.71 hrs, Volume= 20.236 af, Depth> 0.29"
Routed to Reach SP3 : Summation Point 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	383,392	98	Impervious
*	128,802	98	Impervious
*	280,548	98	Impervious
	20,836,602	30	Woods, Good, HSG A
	1,414,848	70	Woods, Good, HSG C
	12,006,435	77	Woods, Good, HSG D
	188,528	39	>75% Grass cover, Good, HSG A
	117,830	74	>75% Grass cover, Good, HSG C
	164,962	80	>75% Grass cover, Good, HSG D
*	1,479,297	98	Impervious, rock outcropping
	37,001,244	51	Weighted Average
	34,729,205		93.86% Pervious Area
	2,272,039		6.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
7.9	410	0.0300	0.87		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
10.7	1,155	0.1300	1.80		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
11.8	1,000	0.0800	1.41		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
20.9	2,350	0.1400	1.87		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
13.2	560	0.0200	0.71		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
1.3	125	0.1100	1.66		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
107.3	5,700	Total			

Summary for Subcatchment 4S: Pemadumcook Lake Watershed 2

Runoff = 15.70 cfs @ 13.07 hrs, Volume= 4.054 af, Depth> 0.64"
Routed to Reach 5R : Reach

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=3.80"

	Area (sf)	CN	Description
*	59,473	98	Impervious A
	1,201,727	30	Woods, Good, HSG A
	2,045,168	77	Woods, Good, HSG D
	3,306,368	60	Weighted Average
	3,246,895		98.20% Pervious Area
	59,473		1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
13.9	1,250	0.0900	1.50		**Shallow Concentrated Flow, SCF** Woodland Kv= 5.0 fps
22.7	100	0.0900	0.07		**Sheet Flow, SF-2** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.6	450	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
81.7	1,900	Total			

Summary for Reach 5R: Reach

Inflow Area = 75.904 ac, 1.80% Impervious, Inflow Depth > 0.64" for 10-yr event
Inflow = 15.70 cfs @ 13.07 hrs, Volume= 4.054 af
Outflow = 11.27 cfs @ 14.39 hrs, Volume= 3.799 af, Atten= 28%, Lag= 79.5 min
Routed to Reach SP1 : Summation Point 1

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.15 fps, Min. Travel Time= 44.8 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 59.8 min

Peak Storage= 30,286 cf @ 13.65 hrs
Average Depth at Peak Storage= 0.88' , Surface Width= 21.55'
Bank-Full Depth= 0.50' Flow Area= 4.5 sf, Capacity= 4.35 cfs

4.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 10.0 '/' Top Width= 14.00'
Length= 3,100.0' Slope= 0.0194 '/'
Inlet Invert= 670.00', Outlet Invert= 610.00'

‡

Summary for Reach SP1: Summation Point 1

Inflow Area = 268.245 ac, 1.68% Impervious, Inflow Depth > 0.58" for 10-yr event
Inflow = 35.25 cfs @ 14.21 hrs, Volume= 13.063 af
Outflow = 35.25 cfs @ 14.21 hrs, Volume= 13.063 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP2: Summation Point 2

Inflow Area = 308.329 ac, 45.44% Impervious, Inflow Depth > 2.13" for 10-yr event
Inflow = 232.80 cfs @ 13.31 hrs, Volume= 54.791 af
Outflow = 232.80 cfs @ 13.31 hrs, Volume= 54.791 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach SP3: Summation Point 3

Inflow Area = 849.432 ac, 6.14% Impervious, Inflow Depth > 0.29" for 10-yr event
Inflow = 46.39 cfs @ 13.71 hrs, Volume= 20.236 af
Outflow = 46.39 cfs @ 13.71 hrs, Volume= 20.236 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PemadumcookLake Runoff Area=8,378,393 sf 1.63% Impervious Runoff Depth>1.00"
Flow Length=6,020' Tc=140.9 min CN=59 Runoff=47.44 cfs 16.095 af

Subcatchment2S: Smith Pond (Little) Runoff Area=13,430,801 sf 45.44% Impervious Runoff Depth>2.92"
Flow Length=6,000' Tc=108.0 min CN=84 Runoff=318.45 cfs 74.917 af

Subcatchment3S: MillinocketLake Runoff Area=37,001,244 sf 6.14% Impervious Runoff Depth>0.59"
Flow Length=5,700' Tc=107.3 min CN=51 Runoff=119.86 cfs 41.629 af

Subcatchment4S: PemadumcookLake Runoff Area=3,306,368 sf 1.80% Impervious Runoff Depth>1.09"
Flow Length=1,900' Tc=81.7 min CN=60 Runoff=30.40 cfs 6.909 af

Reach 5R: Reach Avg. Flow Depth=1.45' Max Vel=1.23 fps Inflow=30.40 cfs 6.909 af
n=0.100 L=3,100.0' S=0.0194 '/' Capacity=4.35 cfs Outflow=21.68 cfs 6.563 af

Reach SP1: SummationPoint 1 Inflow=67.84 cfs 22.658 af
Outflow=67.84 cfs 22.658 af

Reach SP2: SummationPoint 2 Inflow=318.45 cfs 74.917 af
Outflow=318.45 cfs 74.917 af

Reach SP3: SummationPoint 3 Inflow=119.86 cfs 41.629 af
Outflow=119.86 cfs 41.629 af

Total Runoff Area = 1,426.006 ac Runoff Volume = 139.551 af Average Runoff Depth = 1.17"
86.20% Pervious = 1,229.237 ac 13.80% Impervious = 196.769 ac

Summary for Subcatchment 1S: Pemadumcook Lake Watershed 1

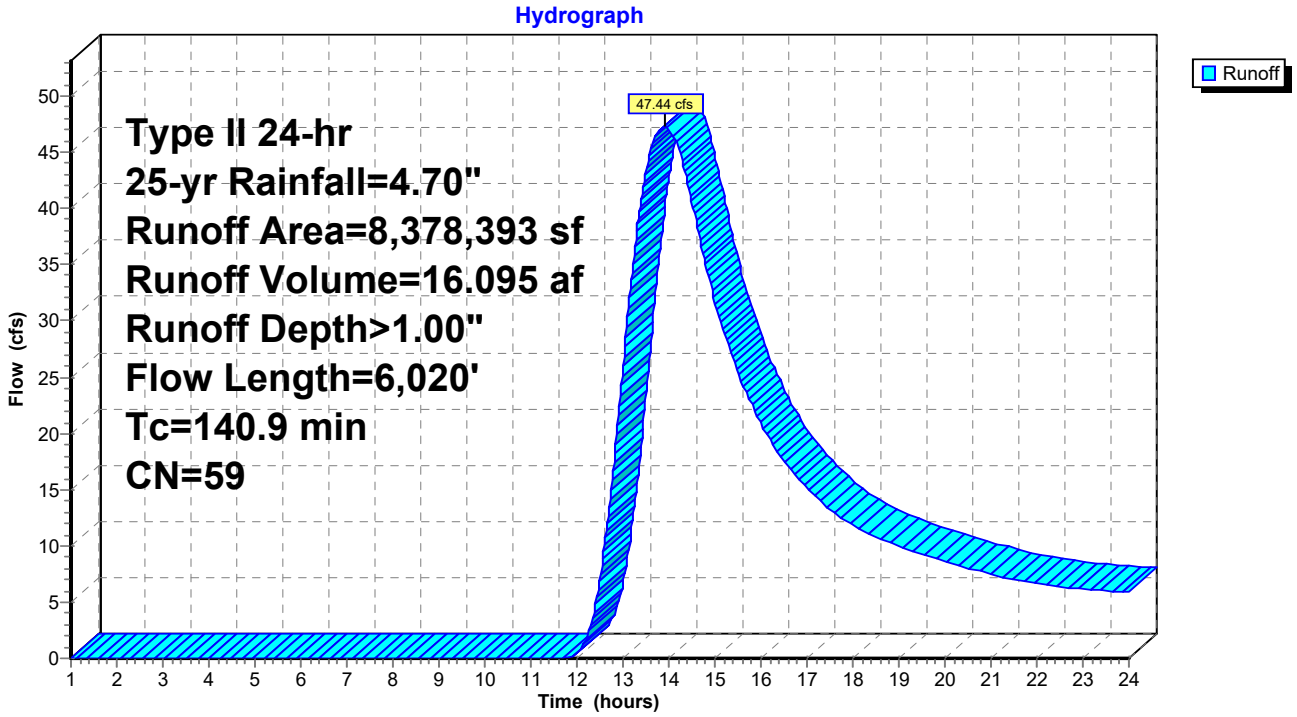
Runoff = 47.44 cfs @ 13.93 hrs, Volume= 16.095 af, Depth> 1.00"
Routed to Reach SP1 : Summation Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	44,781	98	Impervious, A
*	91,767	98	Impervious, D
	2,995,186	30	Woods, Good, HSG A
	1,363,072	70	Woods, Good, HSG C
	3,813,891	77	Woods, Good, HSG D
	69,696	80	>75% Grass cover, Good, HSG D
	8,378,393	59	Weighted Average
	8,241,845		98.37% Pervious Area
	136,548		1.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.4	100	0.0400	0.05		**Sheet Flow, SF-1** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.0	320	0.1300	1.80		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.3	560	0.0400	1.00		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
1.6	130	0.0700	1.32		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
11.3	680	0.0400	1.00		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
26.0	1,560	0.0400	1.00		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
7.2	375	0.0300	0.87		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
4.0	295	0.0600	1.22		**Shallow Concentrated Flow, SCF-7** Woodland Kv= 5.0 fps
47.1	2,000	0.0200	0.71		**Shallow Concentrated Flow, SCF-8** Woodland Kv= 5.0 fps
140.9	6,020	Total			

Subcatchment 1S: Pemadumcook Lake Watershed 1



Summary for Subcatchment 2S: Smith Pond (Little) Watershed

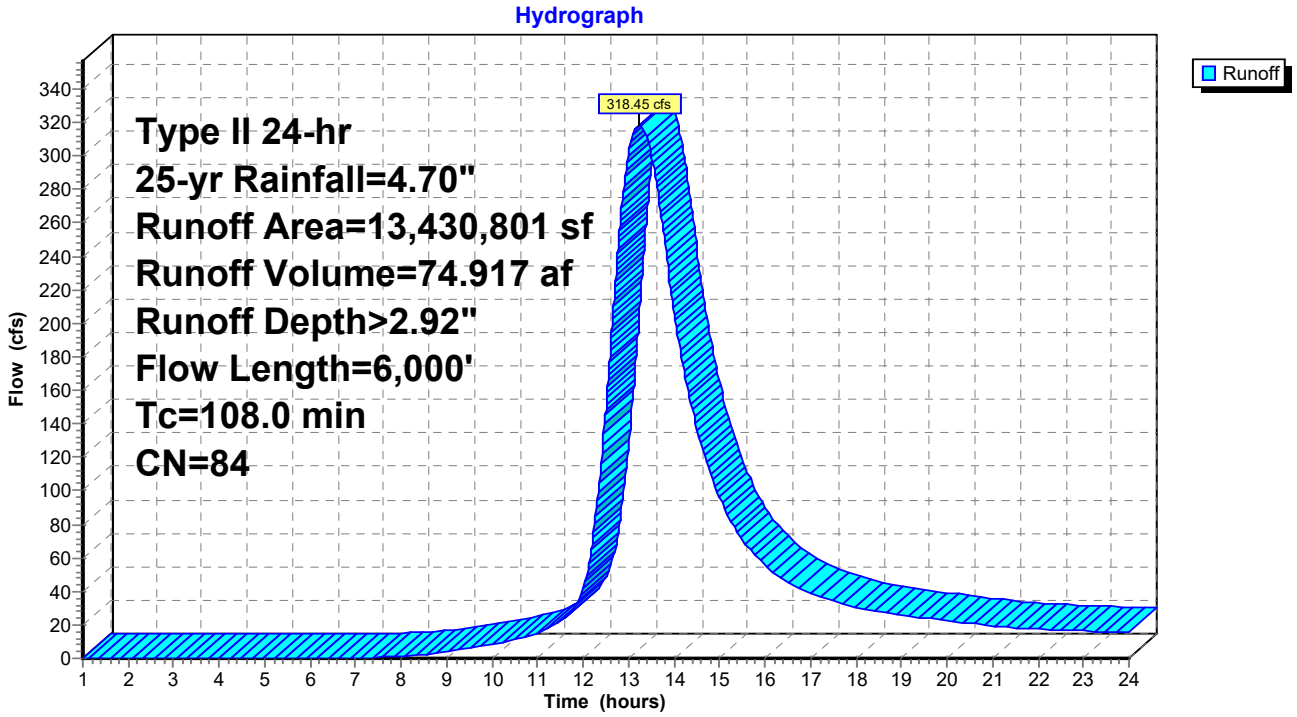
Runoff = 318.45 cfs @ 13.21 hrs, Volume= 74.917 af, Depth> 2.92"
Routed to Reach SP2 : Summation Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	1,610	98	Impervious, A
*	17,220	98	Impervious, D
	862,873	30	Woods, Good, HSG A
	6,464,736	77	Woods, Good, HSG D
*	6,084,362	98	Rock outcropping
	13,430,801	84	Weighted Average
	7,327,609		54.56% Pervious Area
	6,103,192		45.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1200	0.08		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
1.3	170	0.2000	2.24		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
9.7	715	0.0600	1.22		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
8.4	910	0.1300	1.80		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
52.8	2,745	0.0300	0.87		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
12.2	1,100	0.0900	1.50		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
108.0	6,000	Total			

Subcatchment 2S: Smith Pond (Little) Watershed



Summary for Subcatchment 3S: Millinocket Lake Watershed

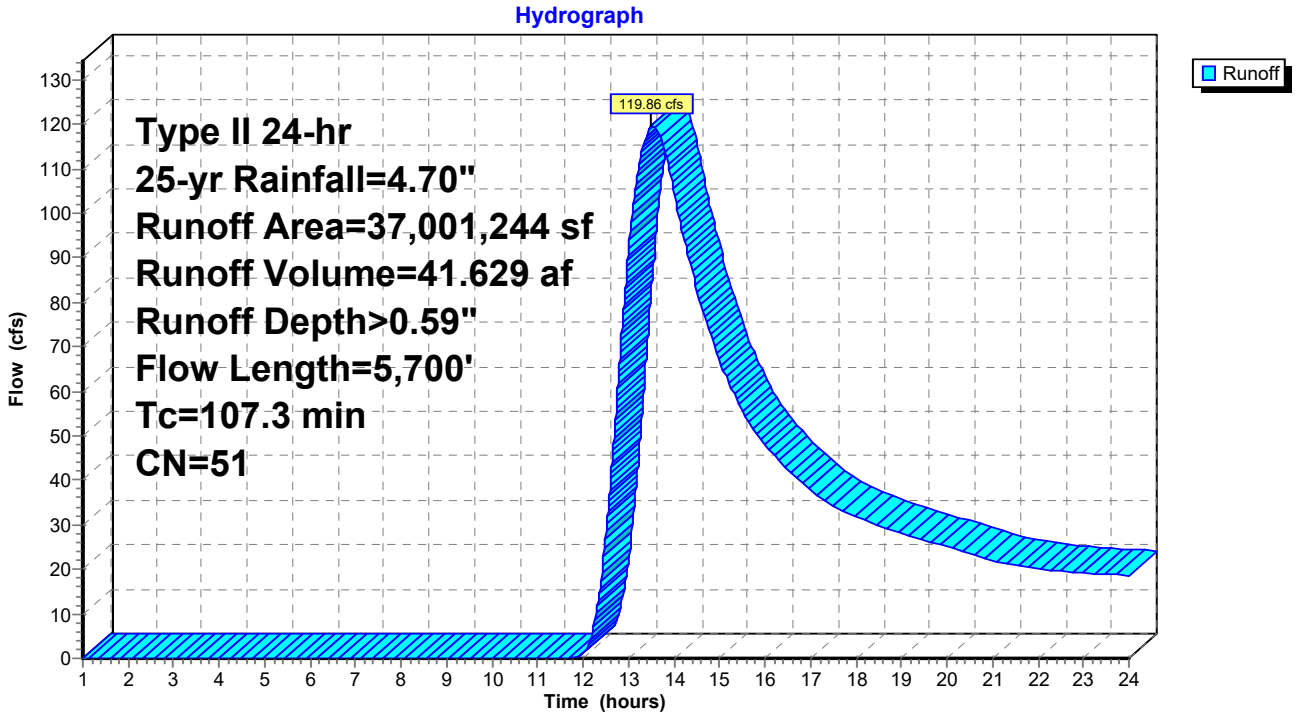
Runoff = 119.86 cfs @ 13.48 hrs, Volume= 41.629 af, Depth> 0.59"
Routed to Reach SP3 : Summation Point 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	383,392	98	Impervious
*	128,802	98	Impervious
*	280,548	98	Impervious
	20,836,602	30	Woods, Good, HSG A
	1,414,848	70	Woods, Good, HSG C
	12,006,435	77	Woods, Good, HSG D
	188,528	39	>75% Grass cover, Good, HSG A
	117,830	74	>75% Grass cover, Good, HSG C
	164,962	80	>75% Grass cover, Good, HSG D
*	1,479,297	98	Impervious, rock outcropping
	37,001,244	51	Weighted Average
	34,729,205		93.86% Pervious Area
	2,272,039		6.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
7.9	410	0.0300	0.87		**Shallow Concentrated Flow, SCF-1** Woodland Kv= 5.0 fps
10.7	1,155	0.1300	1.80		**Shallow Concentrated Flow, SCF-2** Woodland Kv= 5.0 fps
11.8	1,000	0.0800	1.41		**Shallow Concentrated Flow, SCF-3** Woodland Kv= 5.0 fps
20.9	2,350	0.1400	1.87		**Shallow Concentrated Flow, SCF-4** Woodland Kv= 5.0 fps
13.2	560	0.0200	0.71		**Shallow Concentrated Flow, SCF-5** Woodland Kv= 5.0 fps
1.3	125	0.1100	1.66		**Shallow Concentrated Flow, SCF-6** Woodland Kv= 5.0 fps
107.3	5,700	Total			

Subcatchment 3S: Millinocket Lake Watershed



Summary for Subcatchment 4S: Pemadumcook Lake Watershed 2

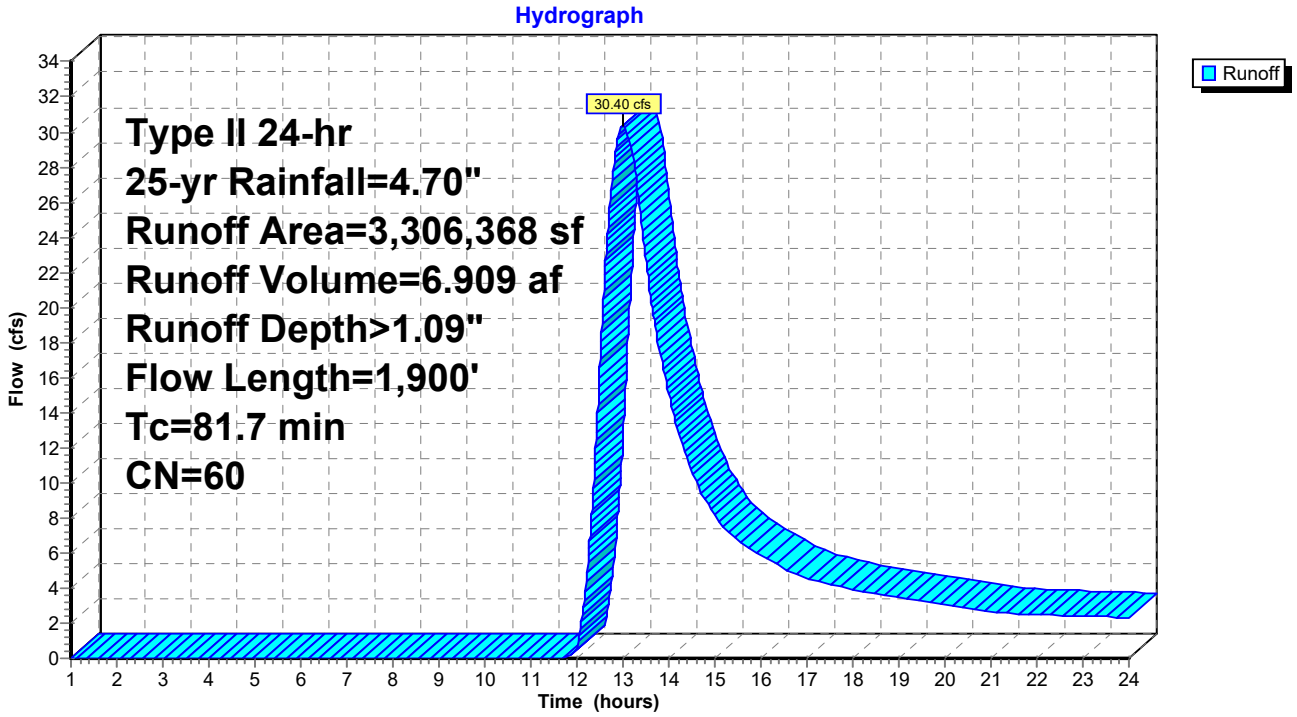
Runoff = 30.40 cfs @ 12.98 hrs, Volume= 6.909 af, Depth> 1.09"
Routed to Reach 5R : Reach

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	59,473	98	Impervious A
	1,201,727	30	Woods, Good, HSG A
	2,045,168	77	Woods, Good, HSG D
	3,306,368	60	Weighted Average
	3,246,895		98.20% Pervious Area
	59,473		1.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	100	0.0200	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.60"
13.9	1,250	0.0900	1.50		**Shallow Concentrated Flow, SCF** Woodland Kv= 5.0 fps
22.7	100	0.0900	0.07		**Sheet Flow, SF-2** Woods: Dense underbrush n= 0.800 P2= 2.60"
3.6	450	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
81.7	1,900	Total			

Subcatchment 4S: Pemadumcook Lake Watershed 2



Summary for Reach 5R: Reach

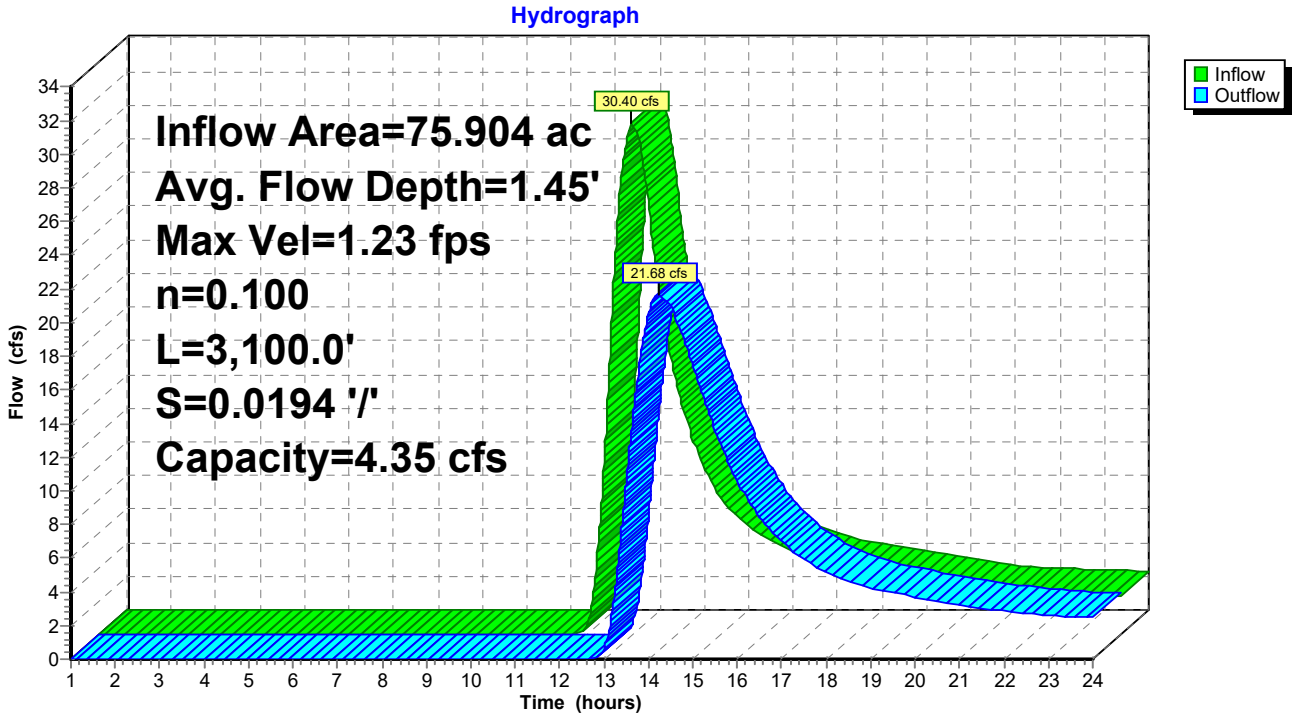
Inflow Area = 75.904 ac, 1.80% Impervious, Inflow Depth > 1.09" for 25-yr event
Inflow = 30.40 cfs @ 12.98 hrs, Volume= 6.909 af
Outflow = 21.68 cfs @ 14.25 hrs, Volume= 6.563 af, Atten= 29%, Lag= 76.0 min
Routed to Reach SP1 : Summation Point 1

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.23 fps, Min. Travel Time= 42.2 min
Avg. Velocity = 0.95 fps, Avg. Travel Time= 54.4 min

Peak Storage= 54,867 cf @ 13.55 hrs
Average Depth at Peak Storage= 1.45' , Surface Width= 32.92'
Bank-Full Depth= 0.50' Flow Area= 4.5 sf, Capacity= 4.35 cfs

4.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 10.0 '/' Top Width= 14.00'
Length= 3,100.0' Slope= 0.0194 '/'
Inlet Invert= 670.00', Outlet Invert= 610.00'

‡

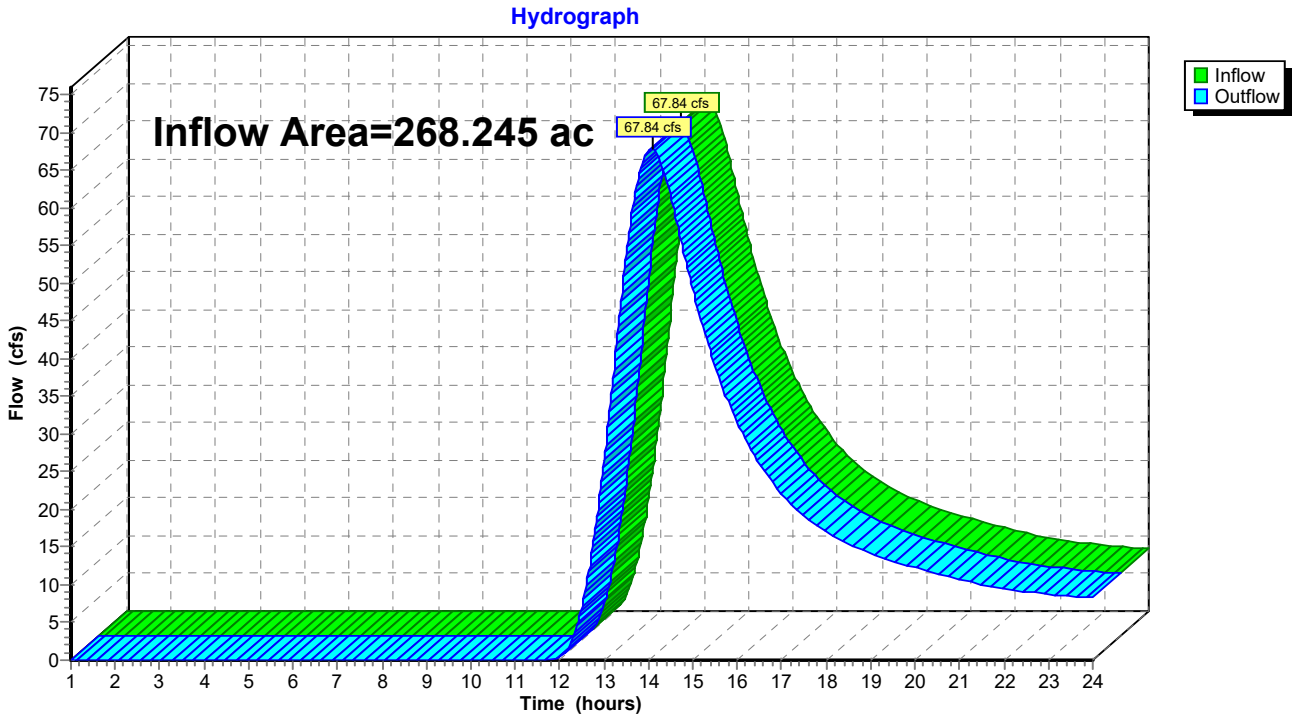


Summary for Reach SP1: Summation Point 1

Inflow Area = 268.245 ac, 1.68% Impervious, Inflow Depth > 1.01" for 25-yr event
Inflow = 67.84 cfs @ 14.09 hrs, Volume= 22.658 af
Outflow = 67.84 cfs @ 14.09 hrs, Volume= 22.658 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Reach SP1: Summation Point 1

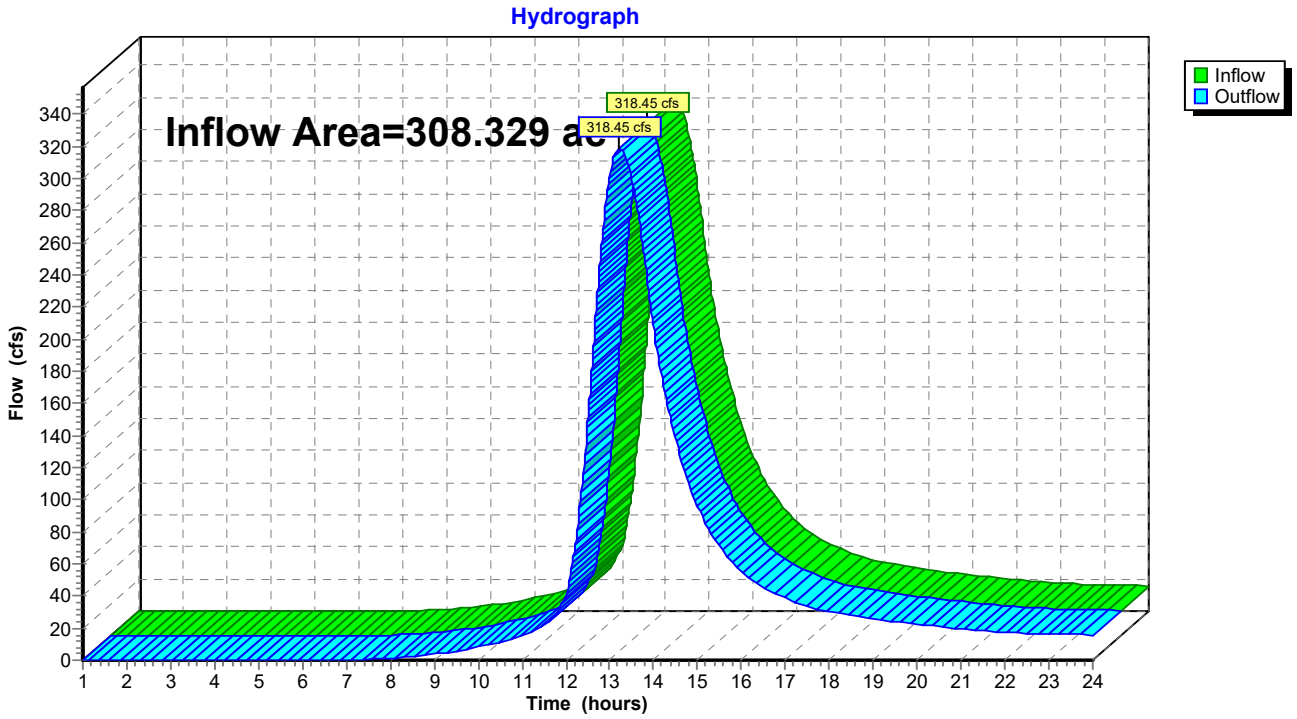


Summary for Reach SP2: Summation Point 2

Inflow Area = 308.329 ac, 45.44% Impervious, Inflow Depth > 2.92" for 25-yr event
Inflow = 318.45 cfs @ 13.21 hrs, Volume= 74.917 af
Outflow = 318.45 cfs @ 13.21 hrs, Volume= 74.917 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Reach SP2: Summation Point 2

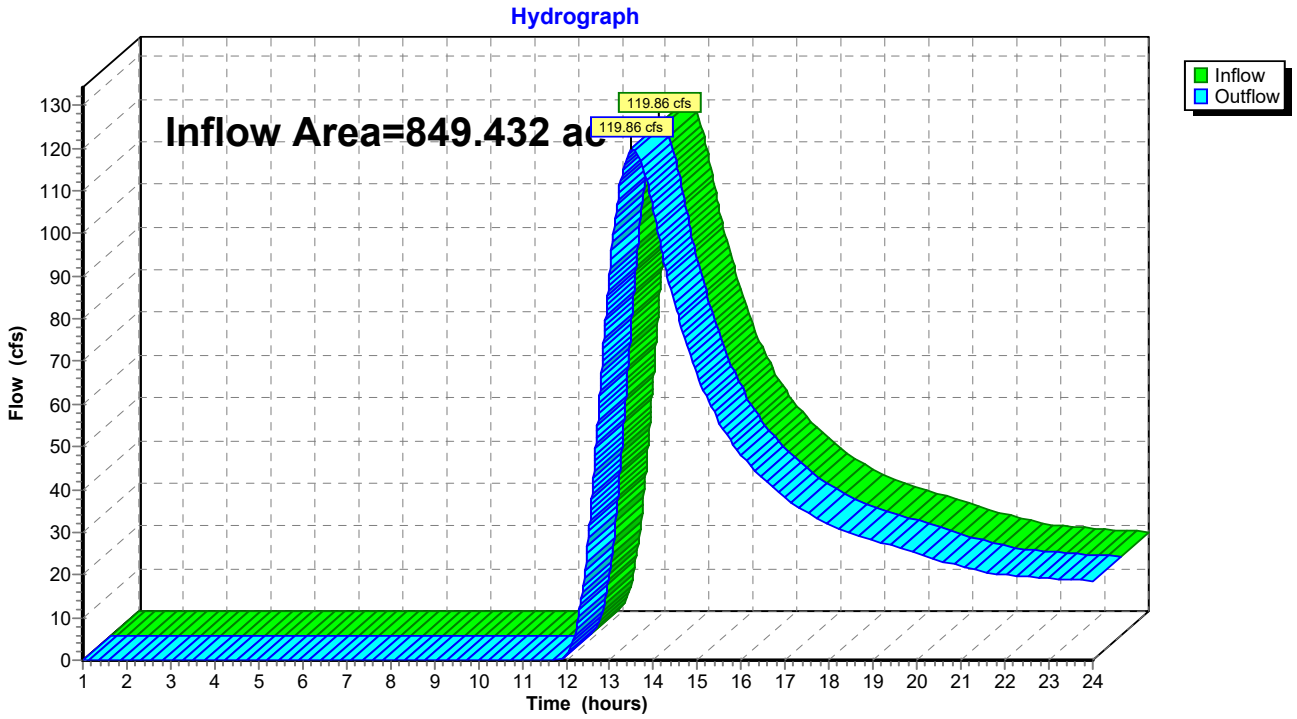


Summary for Reach SP3: Summation Point 3

Inflow Area = 849.432 ac, 6.14% Impervious, Inflow Depth > 0.59" for 25-yr event
Inflow = 119.86 cfs @ 13.48 hrs, Volume= 41.629 af
Outflow = 119.86 cfs @ 13.48 hrs, Volume= 41.629 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs

Reach SP3: Summation Point 3



Worksheet 1 - PPB calculations

Project Name: Hammond Ridge

Lake Watershed: Millinocket Lake

Town: T1 R8 WELS

Standard Calculations

Watershed per acre phosphorus budget (Appendix C)	**PAPB**	0.053	lbs P/acre/year
Total acreage of development parcel:	**TA**	849.43	acres
NWI wetland acreage:	**WA**	5.64	acres
Steep slope acreage:	**SA**	38.18	acres
Project acreage: A = TA - (WA+ SA)	**A**	805.61	acres
Project Phosphorus Budget: PPB = P x A	**PPB**	42.69751543	**lbs P/year**

Small Watershed Adjustment

If Project Acreage (A) is greater than the threshold acreage for the small watershed threshold (SWT, from pertinent lake and town info in the table in Appendix C), calculate an alternative PPB using the analysis below and use this value if it is less than the the Standard Calculation PPB.

Small Watershed Threshold (Appendix C):	**SWT**	249	acres
Project acreage:	**A**	805.61	acres
Allowable increase in town's share of annual phosphorus load to lake (Appendix C):	**FC**	53.31	lbs P/year
Area available for development (Appendix C):	**AAD**	3990	acres
Ratio of A to AAD (R=A/AAD)	**R**	0.202	

Project Phosphorus Budget

If R < 0.5, PPB = [(FC x R)/2] + [FC/4]	**PPB**	18.709	**lbs P/year**
If R> 0.5, PPB = FC x R	**PPB**	10.764	**lbs P/year**

Worksheet 2
Pre-PPE and Post-PPE Calculations

Calculate phosphorus export from development for before and after treatment
Use as many sheets as needed for each development type (commercial, roads, residential lots, etc.)

Project name: Hammond Ridge Development **Development type**: Commercial/Residential Sheet # 2

Land Surface Type with description	Acres or # of lots	Export Coefficient from Table 3.1 Table 3.2	Pre-treatment Algal Av. P Export (lbs P/year)	Treatment Factor for BMP(s) from Chapter 6	Post-treatment Algal Av. P Export (lbs P/year)	Description of BMPs
Sub A Roads/Driveways	2.05	1.75	3.5875	0.4	1.435	Buffer (Type D)
Sub A Lawn	3.2	0.8	2.56	0.4	1.024	Buffer (Type D)
Sub A Roofs	0.72	0.5	0.36	0.25	0.09	Dripline Filter
Start of Sub A Road	0.14	1.75	0.245	0.3	0.0735	Buffer (Type C)
Start of Sub A Road Lawn	0.12	0.8	0.096	0.3	0.0288	Buffer (Type C)
Sub B Road to ST 15+72	0.53	1.75	0.9275	0.15	0.139125	Buffer (Type A)
Sub B Lawn to ST 15+72	0.45	0.2	0.09	0.15	0.0135	Buffer (Type A)
Sub B Driveways Other lots	0.66	1.75	1.155	0.15	0.17325	Buffer (Type A)
Sub B Lawn Other Lots	1.66	0.2	0.332	0.15	0.0498	Buffer (Type A)
Sub B Lots 31-33, 50/51 Driveways	0.2	1.75	0.35	0.3	0.105	Buffer (Type C)
Sub B Lots 31-33, 50/51 Lawn	0.54	0.6	0.324	0.3	0.0972	Buffer (Type C)
Sub B Roofs	0.72	0.5	0.36	0.25	0.09	Dripline Filter
Lot 3,4,5,6,8,9 Roofs	1.3	0.5	0.65	0.25	0.1625	Dripline Filter
Portion of Lot 9 Road, Walkways/Driveways, Lot 7 Road (left of parcel)	0.76	1.75	1.33	0.3	0.399	Buffer (Type C)
Lot 9 Parking	0.15	1.25	0.1875	0.3	0.05625	Buffer (Type C)
Lot 9 Lawn, Lot 7 Lawn and open space	1.3	0.6	0.78	0.3	0.234	Buffer (Type C)
Lot 9 Road ST 0+00 to 3+50, Lot 8 Driveways/Walkways	0.33	1.75	0.5775	0.15	0.086625	Buffer (Type A)
Lot 9 Road ST 0+00 to 3+50 Ditch, Lot 8 Lawn	0.45	0.6	0.27	0.15	0.0405	Buffer (Type A)
Lot 8 Parking	0.07	1.25	0.0875	0.15	0.013125	Buffer (Type A)
Lot 9 Road ST 3+50 to 6+50	0.08	1.75	0.14	0.15	0.021	Roadside Buffer (Type A)
Lot 9 Road ST 3+50 to 6+50 Ditch	0.08	0.6	0.048	0.15	0.0072	Roadside Buffer (Type A)
Lot 7 Amplitheather (lawn)	4	0.6	2.4	1	2.4	No treatment
Lot 5 and 6 Parking	0.3	1.25	0.375	0.3	0.1125	Buffer (Type C)
Lot 5 and 6 Driveways/Walkways	0.98	1.75	1.715	0.3	0.5145	Buffer (Type C)
Lot 5 and 6 Lawns	0.94	0.6	0.564	0.3	0.1692	Buffer (Type C)
Lot 3 and 4 Parking	0.14	1.25	0.175	0.15	0.02625	Buffer (Type A)
Lot 3 and 4 Driveways/Walkways	0.79	1.75	1.3825	0.15	0.207375	Buffer (Type A)
Lot 3 and 4 Lawns	0.77	0.6	0.462	0.15	0.0693	Buffer (Type A)
Lot 1 and 2 Parking	0.03	1.25	0.0375	0.4	0.015	Buffer (Type D)
Lot 1 and 2 Driveways/Walkways	0.3	1.75	0.525	0.4	0.21	Buffer (Type D)
Lot 1 and 2 Roofs	0.12	0.5	0.06	0.4	0.024	Buffer (Type D)
Lot 1 and 2 Lawn	0.61	0.6	0.366	0.4	0.1464	Buffer (Type D)
Hammond Ridge Road (CES 2019)	2.13	1.75	3.7275	0.15	0.559125	Buffers (Type A)
Hammond Ridge Road Ext.	0.27	1.75	0.4725	1	0.4725	Buffers (Type D)
Event Center Gravel	0.83	1.75	1.4525	0.15	0.217875	Buffer (Type A)
Event Center Roof	0.2	0.5	0.1	0.15	0.015	Buffer (Type A)
		Total Pre-PPE (lbs P/year)	28.272	**Total PostPPE (lbs P/year)**	9.4984	

Appendix D: Worksheet 3 - Mitigation credit

Project name: Hammond Ridge Development **Development type**: Commerical/Residential Sheet # 3

Mitigation credit when a pre-existing source is being eliminated

Mitigation Source Area Land Use	Acres	Export Coefficient (lbs P/acre/year)	Modifier	Pre-treatment Historical P Export (lbs P/year)	Treatment Factor for Historical BMP(s) (1.0 if no BMPs)	Historical P Export (lbs P/year)			Mitigation Credit (lbs P/year)	Comments
			0.5	0	1	0			0	
			0.5	0	1	0			0	
			0.5	0	1	0			0	
				Total source elimination mitiagion credit (SEC)					**0**	**lbs P/year**

Mitigation credit when a pre-existing source is treated by a new BMP

Mitigation Source Area Land Use	Acres	Export Coefficient (lbs P/acre/year)	Modifier	Pre-treatment Historical P Export (lbs P/year)	Treatment Factor for Historical BMP(s) (1.0 if no BMPs)	Historical P Export (lbs P/year)		Treatment Factor for New BMP(s) Chapter 6	Mitigation Credit (lbs P/year)	Comments
			0.5	0	1	0	1 -		0	
			0.5	0	1	0	1 -		0	
			0.5	0	1	0	1 -		0	
				Total source treatment mitiagion credit (STC)					**0**	**lbs P/year**

TOTAL MITIGATION CREDIT (SEC + STC)	**0**	**lbs P/year**

WORKSHEET 4 - PROJECT PHOSPHORUS EXPORT SUMMARY

Summarizing the project's algal available phosphorus export (PPE)

Project Name: Hammond Ridge Development

Project Phosphorus Budget - Worksheet 1	**PPB**	18.70	lbs P/year
Total Pre-Treatment Phosphorus Export - Worksheet 2	**Pre-PPE**	28.27	lbs P/year
Total Post-Treatment Phosphorus Export - Worksheet 2	**Post-PPE**	9.49	lbs P/year
Total Phosphorus Mitigation Credit - Worksheet 3	**TMC**	0.00	lbs P/year
Project Phosphorus Export (Post-PPE - TMC)	**PPE**	9.49	lbs P/year

Is the Project Phosphorus Export ≤ the Project Phosphorus Budget? (PPE≤PPB)

*If **YES**, PPE is less than or equal to PPB and the project meets its phosphorus budget .* *If **NO,** PPE is greater than PPB, more reduction in phosphorus export is required or the payment of a compensation fee may be an option*	YES
The amount of phosphorus that needs further treatment or compensation	lbs P/year

Has Project Phosphorus Export been sufficiently reduced?
Is (Pre-PPE - Post-PPE)/Pre-PPE greater than 0.60?

*If **YES**, in some watersheds the compensation fee is an available option.* *If **NO**, more treatment must be provided. PPE must be further reduced.*	
*The post-treatment phosphorus export must be less than 40% of the pre-treatment export (Post-PPE < 0.4*Pre-PPE)*	%

If the project is located in a watershed that is eligible for a compensation fee (or is a residential subdivision with buffers), a compensation fee may be appropriate as follows:

If Project Export has been reduced by greater than 60% and less than 75%, $25,000 per pound minus $833 per 1% Percent Export	
If Project Export has been reduced by greater than 75%, $12,500 per pound minus $500 per 1% Project Export	

Worksheet 1 - PPB calculations

Project Name: Hammond Ridge Development

Lake Watershed: Pemadumcook Chain

Town: T1 R8 WELS

Standard Calculations

Watershed per acre phosphorus budget (Appendix C)	**PAPB**	0.542	lbs P/acre/year
Total acreage of development parcel:	**TA**	268.25	acres
NWI wetland acreage:	**WA**	1.3	acres
Steep slope acreage:	**SA**	3.53	acres
Project acreage: A = TA - (WA+ SA)	**A**	263.42	acres
Project Phosphorus Budget: PPB = P x A	**PPB**	142.77364	**lbs P/year**

Small Watershed Adjustment

If Project Acreage (A) is greater than the threshold acreage for the small watershed threshold (SWT, from pertinent lake and town info in the table in Appendix C), calculate an alternative PPB using the analysis below and use this value if it is less than the the Standard Calculation PPB.

Small Watershed Threshold (Appendix C):	**SWT**	63	acres
Project acreage:	**A**	263.42	acres
Allowable increase in town's share of annual phosphorus load to lake (Appendix C):	**FC**	148.44	lbs P/year
Area available for development (Appendix C):	**AAD**	1369	acres
Ratio of A to AAD (R=A/AAD)	**R**	0.192	

Project Phosphorus Budget

If R < 0.5, PPB = [(FC x R)/2] + [FC/4]	**PPB**	51.391	**lbs P/year**
If R> 0.5, PPB = FC x R	**PPB**	28.563	**lbs P/year**

Worksheet 2
Pre-PPE and Post-PPE Calculations

Calculate phosphorus export from development for before and after treatment
Use as many sheets as needed for each development type (commercial, roads, residential lots, etc.)

Project name: Hammond Ridge Development **Development type**: _Commercial/Residential Sheet # 2

Land Surface Type or Lot #(s) with description	Acres or # of lots	Export Coefficient from Table 3.1 Table 3.2	Pre-treatment Algal Av. P Export (lbs P/year)	Treatment Factor for BMP(s) from Chapter 6	Post-treatment Algal Av. P Export (lbs P/year)	Description of BMPs
Hammond Ridge Rd/Gravity Lane Ext.	0.34	1.75	0.595	1	0.595	No Treatment
Activity Center Building	0.16	0.5	0.08	0.4	0.032	Buffer (Type D)
Activity Center Parking	0.31	1.25	0.3875	0.4	0.155	Buffer (Type D)
Activity Center Drives/walkways	0.45	1.75	0.7875	0.4	0.315	Buffer (Type D)
Activity Center Storage Building	0.13	0.5	0.065	0.4	0.026	Buffer (Type D)
Lots 1 and 2 Lawn	0.3	0.6	0.18	0.4	0.072	Buffer (Type D)
Maintenance Building	0.34	0.5	0.17	0.15	0.0255	Buffer (Type A)
Maintenance Building Parking	0.69	1.25	0.8625	0.15	0.129375	Buffer (Type A)
Lot 8 Drive	0.08	1.75	0.14	0.4	0.056	Buffer (Type D) back side of lot 8
Lot 8 Drive	0.25	1.75	0.4375	0.3	0.13125	Buffer (Type C) by Lot 9
Lot 8 Roofs and Sub A Roofs	0.27	0.5	0.135	0.25	0.03375	Dripline filters
Sub A drives	0.07	1.75	0.1225	0.4	0.049	Buffer (Type D)
Sub A Lawns	1.3	0.6	0.78	0.4	0.312	Buffer (Type D)
Solar Shed Roof	0.004	0.5	0.002	1	0.002	Buffer
		Total Pre-PPE (lbs P/year)	4.7445	**Total PostPPE (lbs P/year)**	1.933875	

Appendix D: Worksheet 3 - Mitigation credit

Project name: Hammond Ridge Development **Development type**:Commerical/Residential Sheet # 3

Mitigation credit when a pre-existing source is being eliminated

Mitigation Source Area Land Use	Acres	Export Coefficient (lbs P/acre/year)	Modifier	Pre-treatment Historical P Export (lbs P/year)	Treatment Factor for Historical BMP(s) (1.0 if no BMPs)	Historical P Export (lbs P/year)			Mitigation Credit (lbs P/year)	Comments
			0.5	0	1	0			0	
			0.5	0	1	0			0	
			0.5	0	1	0			0	
				Total source elimination mitiagion credit (SEC)					**0**	**lbs P/year**

Mitigation credit when a pre-existing source is treated by a new BMP

Mitigation Source Area Land Use	Acres	Export Coefficient (lbs P/acre/year)	Modifier	Pre-treatment Historical P Export (lbs P/year)	Treatment Factor for Historical BMP(s) (1.0 if no BMPs)	Historical P Export (lbs P/year)		Treatment Factor for New BMP(s) Chapter 6	Mitigation Credit (lbs P/year)	Comments
			0.5	0	1	0	1 -		0	
			0.5	0	1	0	1 -		0	
			0.5	0	1	0	1 -		0	
				Total source treatment mitiagion credit (STC)					**0**	**lbs P/year**

TOTAL MITIGATION CREDIT (SEC + STC)	**0**	**lbs P/year**

WORKSHEET 4 - PROJECT PHOSPHORUS EXPORT SUMMARY

Summarizing the project's algal available phosphorus export (PPE)

Project Name: Hammond Ridge Development

Project Phosphorus Budget - Worksheet 1	**PPB**	51.39	lbs P/year
Total Pre-Treatment Phosphorus Export - Worksheet 2	**Pre-PPE**	4.74	lbs P/year
Total Post-Treatment Phosphorus Export - Worksheet 2	**Post-PPE**	1.93	lbs P/year
Total Phosphorus Mitigation Credit - Worksheet 3	**TMC**	0.00	lbs P/year
Project Phosphorus Export (Post-PPE - TMC)	**PPE**	1.93	lbs P/year

Is the Project Phosphorus Export ≤ the Project Phosphorus Budget? (PPE≤PPB)

*If **YES**, PPE is less than or equal to PPB and the project meets its phosphorus budget .* *If **NO,** PPE is greater than PPB, more reduction in phosphorus export is required or the payment of a compensation fee may be an option*	YES
The amount of phosphorus that needs further treatment or compensation	lbs P/year

Has Project Phosphorus Export been sufficiently reduced?
Is (Pre-PPE - Post-PPE)/Pre-PPE greater than 0.60?

*If **YES**, in some watersheds the compensation fee is an available option.* *If **NO**, more treatment must be provided. PPE must be further reduced.*	
*The post-treatment phosphorus export must be less than 40% of the pre-treatment export (Post-PPE < 0.4*Pre-PPE)*	%

If the project is located in a watershed that is eligible for a compensation fee (or is a residential subdivision with buffers), a compensation fee may be appropriate as follows:

If Project Export has been reduced by greater than 60% and less than 75%, $25,000 per pound minus $833 per 1% Percent Export	
If Project Export has been reduced by greater than 75%, $12,500 per pound minus $500 per 1% Project Export	

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # TP101 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

50 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/6	grav SL	gran	vfr	
Bs1	10YR 3/6	cobb SL	↓	friable	none
Bs2	10YR 4/6	↓	↓	↓	↓
BC	10YR 5/4	cobb L	abk		
C	2.5Y 6/3	cobb SL	massive	firm	10YR 4/6
		LLI = 50" / excav dwg			

Soil Details

Soil Series/Phase Name: Skerry grav SL

Limiting Factor: 24" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # L02 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

55 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 5/3	SL	gran	vfr	
Bs1	10YR 3/6	↓	↓	fr	none
Bs2	7.5YR 4/6	↓	↓	fr/corn	↓
BC	10YR 5/4	loam	platy	firm	7.5YR 5/6
C	2.5Y 6/3	bould SL	platy-ma	vfirm	
		LLI = 55" / excav dwg			

Soil Details

Soil Series/Phase Name: skerry sandy loam

Limiting Factor: 19" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 103 — ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	SL	gran	vfr	none
Bs	7.5YR 4/6	cobb SL	platy	friable	10YR 4/6
BC	10YR 5/4	↓	↓	↓	↓
C	2.5Y 5/3	↓	platy-ma	vfirm	
		LLI = 60" / excav dwg			

Soil Details

Soil Series/Phase Name: Westbury SL

Limiting Factor: 13" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 104 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

70 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 5/3				
Bhs	7.5YR 4/6	SL	gran	vfr	none
Bs	10YR 3/6	↓	abk	fr	
BC	10YR 5/4	↓		firm	10YR 5/6
C	2.5Y 5/3	stony SL	massive	vfirm	↓
		LLI = 70" / excav dwg			

Soil Details

Soil Series/Phase Name: skerry sandy loam

Limiting Factor: 16" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
Signature

Johanna E Szillery
Name Printed

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 105

☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

40 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	cobb SL	gran	vfr	none
Bs	7.5YR 4/6	↓	↓	↓	↓
BC	10YR 4/6	↓	abk	fr	10YR 4/6
C	2.5Y 6/3	↓	abk/ma	firm	↓

LL = 40" / refusal / lg rocks?

excav dug

Soil Details

Soil Series/Phase Name: Skerry cobb SL

Limiting Factor: 18 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 106

☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

48 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	stony fsl	gran	vfr	rare
Bs	7.5YR 4/6	↓	↓	↓	↓
BC	10YR 5/4	cobb fsl	platy	fr	10YR 4/6
C	2.5Y 6/3	↓	platy/ma	firm	↓

LL = 48" excav dug

Soil Details

Soil Series/Phase Name: Waumbek stonySL

Limiting Factor: 25 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 107

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	10YR 6/2	St. fsl			
Bs1	10YR 3/6	cobbl fsl	gran	vfr	none
Bs2	10YR 5/6	St SL	↓	↓	↓
BC	10YR 5/4	↓	platy	fr	10YR 4/4
C	2.5Y 5/3	↓	platy/ma	firm	↓

LL = 60" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek stonySL

Limiting Factor: 23 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 108

☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	St fsl	gran	vfr	
Bs1	7.5YR 4/6	↓	↓	fr	none
Bs2	10YR 4/6	St SL	↓	↓	↓
BC	10YR 5/4	↓	abk	↓	10YR 5/6
C	2.5Y 6/3	↓	massiv	firm	↓

LL = 60" / excav dug

Soil Details

Soil Series/Phase Name: Skerry St. fsl

Limiting Factor: 20 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 109 — ☒ Test Pit ☐ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

60" Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 5/3,	b fsl	gran	vfr	
Bs1	7.5YR 4/6	st fsl			none
Bs2	10YR 4/6				
BC	10YR 5/4	cb fsl	abk	firm	10YR 5/6
C	2.5Y 6/3		abk/ ma		

LL1 = 60" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek b. fsl

Limiting Factor: 22" Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 110 — ☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

55 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	stony fsl	gran	vfr	none
Bs	7.5YR 4/6				
BC	10YR 5/4	cb fsl	abk	fr	10YR 4/4
C	2.5Y 6/3		massiv	firm	

LL1 = 55" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek st. fsl

Limiting Factor: 21" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 111 — ☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

70 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs1	10YR 3/6	cb SL	gran	vfr	none
Bs2	7.5YR 4/6				
BC	10YR 5/4	stony SL	abk	fr	10YR 4/6
C	2.5Y 5/3		abk/ ma	firm	

LL1 = 70" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek cb SL

Limiting Factor: 19" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 112 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

70 " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	5YR 4/4	stony fsl	gran	vfr	none
BC	2.5YR 5/4	stony SL	abk	(cem)	10YR 4/6
C	2.5Y 5/3	ccbb SL (pockets silo)	massiv	firm	

LL1 = 70" / excav dug

Soil Details

Soil Series/Phase Name: Waumbek st. fsl

Limiting Factor: 18" Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
(Signature)

Johanna E Szillery
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 113

☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	5YR 4/4	stony fsl	gran	vfr	none
BS	7.5YR 4/6	stony SL	abk → gran	fr cem	none
BC	10YR 5/6			firm cem	10YR 5/6
C	2.5Y 6/3		massiv	firm	

LL = 60" / excav

Soil Details

Soil Series/Phase Name: Waumbek St. fsl

Limiting Factor: 23 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 114

☐ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/2				
Bhs	7.5YR 5/6	cobb SL	gran	very friable	none
BS	10YR 5/4				
BC	10YR 5/6		abk	fr	
C	2.5Y 5/3		ma	firm	7.5YR 4/6

LL = 55" / excav

Soil Details

Soil Series/Phase Name: Waumbek cob fsl

Limiting Factor: 27 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 115

☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/1	stony fsl	gran	vfr	none
Bhs	7.5YR 4/4				
BS	10YR 4/6	cob fsl		fr	

LL = 16" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 116

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/1	stony fsl	vfr	gran	none
Bhs	7.5YR 5/4				
BS	10YR 5/3				

LL = 17" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
(Signature)

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 117

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs	10YR 3/4	cobb fsl	gran	vfr	none
Bs2	10YR 4/6	↓	↓	fr	(assume)
BC					

LLI = 15" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: 12 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 118

☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	very stony fsl	gran	vfr	none
Bs1	7.5 4/6	↓	↓	↓	↓
Bs2	↓	↓	↓	↓	↓

LLI = 15" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 119

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	st fsl	gran	vfr	none
Bs	10YR 4/6	st l	↓	↓	↓

LLI = 17" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 120

☒ Test Pit ☐ Boring ☐ Probe

5 " Organic horizon thickness Ground surface elev. ____

20 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/4	v stony fsl	gran	vfr	none
Bs	7.5YR 4/6	↓	↓	↓	↓

LLI = 20" / excav

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 121 — ☒ Test Pit ☐ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

20 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	very stony fsl	gran	vfr	none
BS	10YR 4/6	LLI = 20"/excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 122 — ☒ Test Pit ☐ Boring ☐ Probe

8 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 6/2	v. stony fsl	vfr	gran	none
Bhs	7.5 4/4				
BS	10YR 3/6	LLI = 16" / excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 123 — ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	cobb SL	gran	fr	none
BS	10YR 4/6	LLI = 17"/excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 124 — ☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

20 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	b SL	gran	fr	none
BS1	7.5YR 4/6	st. fsl			
BS2	10YR 5/4	LLI = 20"/excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
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Johanna E Szillery
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 125

☒ Test Pit ☐ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

21 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	stony	gran	vfr	none
Bs	7.5YR 4/6	SL	↓	↓	↓
		LL = 21" / excavator dug			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 126

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/3	stony	gran	vfr	none
Bs	7.5YR 5/4	fsl	↓	↓	↓
Bs2	10YR 4/6	↓	abk	↓	↓
		LL = 17"/ excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 127

☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

21 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	10YR 6/2	sand	gran	vfr	none
Bhs	7.5YR 4/4	↓	↓	↓	↓
Bs	10YR 4/6	SL	↓	↓	↓
		LL = 21" / excav dug			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 128

☒ Test Pit ☐ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	cobb	gran	vfr	none
Bs	7.5Y 5/4	SL	↓	↓	↓
Bs2	10YR 5/4	↓	↓	↓	↓
		LL = 18" / excav			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 129

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

19 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	loam	gran	vfr	none
Bs	7.5 4/4			↓	
Bs2	10YR 5/4	fsl			
BC	2.5Y 6/3		abk	fr	assumed

LLI = 19" / auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: 16 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 130

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/4	grav SL	gran	vfr	none
Bs	10YR 3/6				
BC	10YR 4/6	↓	abk	↓	↓

LLI / refusal = 16" auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 131

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

25 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	10 6/2				
Bhs	7.5 4/4	grav	gran	vfr	none
Bs	10YR 5/4	fsl	↓	↓	↓
BC	10YR 6/4	↓	abk	fr	mott

LLI = 25" / auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: 21 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 132

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

19 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	grav	gran	vfr	none
Bs	7.5 4/6	fsl	↓	↓	↓
BC	2.5Y 6/3	↓	↓	fr	assume

LLI = 19" / auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: 17 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 133 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 5/3	SiL	gran	vfr	
Bhs	5/4 5/3				
Bs	7.5YR 5/4	SiL fsl	abk	fr	none
			↓	↓	↓
		LLI = 15" / auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 134 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs1	7.5YR 4/6				
Bs2	10 5/4	grav L	gran	vfr	none
					↓
BC	10 5/3	grav fsl	abk	fr	assume
	LLI = 17" / refusal auger				

Soil Details

Soil Series/Phase Name:

Limiting Factor: 15 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 135 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

17 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	10 6/2				
Bhs	7.5 4/4	gr fsl	gran	v fr	none
Bs	10YR 4/6	cb fsl	↓	fr ↓	↓
	LLI =	17" auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 136 — ☐ Test Pit ☒ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/2	gravL	gran	v fr	
Bh	5 3/4		↓		none
Bhs	7.5 4/6	gr fsl	↓	fr	↓
	LLI = 13" / refusal auger				

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 137 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	vfr	none
Bs	10YR4/6	gr SL	↓	↓	↓

LLI = 13" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 138 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

12 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/3	gr SL	gran	vfr	none
Bs	7.5 4/6	↓	↓	↓	↓

LLI = 12" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 139 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	gr L	gran	vfr	none
Bs	10YR4/6	grav fsl	abk	fr	↓
Bs2	10YR5/6	↓	↓	↓	↓

LLI = 16" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 140 ☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/3	fsl	gran	vfr	none
Bhs	7.5 4/4	↓	↓	↓	↓
Bs	10 4/6	gr SL	↓	↓	↓

LLI = 14" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 141 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	10 6/2	grav fsl	gran	vfr	none
Bhs	7.5 4/4				
Bs	10 4/6		abk		
		LL1=	13" / refusal		
			auger		

Soil Details: Soil Series/Phase Name: | Limiting Factor NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☒ No ☐ Yes | Hydrologic Soil Group

Exploration Symbol # 142 ☐ Test Pit ☒ Boring ☐ Probe

6 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	7.5 3/2	muck vgrav SiLo	ma	fr/sat	none
Bw	10 5/1	vgrav +cb SiLo			
		LL1=	18" / auger		

Soil Details: Soil Series/Phase Name: Brayton silo | Limiting Factor 0 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☐ No ☒ Yes | Hydrologic Soil Group

Exploration Symbol # 143 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 5/3	gr SL	gran	vfr	none
Bs	10 3/6	gr fsl			
		LL1=	14"/refusal		
			auger		

Soil Details: Soil Series/Phase Name: | Limiting Factor NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☒ No ☐ Yes | Hydrologic Soil Group

Exploration Symbol # 144 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

23 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl			
Bs	10 3/6	grav	gran	vfr	none
Bs2	10YR 4/6	fsl		fr	matt
		LL1=	23" / refusal		
			auger		

Soil Details: Soil Series/Phase Name: | Limiting Factor 13 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD | Slope ____ Percent | Hydric Soil ☒ No ☐ Yes | Hydrologic Soil Group

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 145

☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs1	10YR 3/6	fsl	gran	vfr	none
Bs2	10YR 4/6	grav fsl	↓	fr	mott
		LL1=18" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: 13 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 146

☐ Test Pit ☒ Boring ☐ Probe

5 " Organic horizon thickness Ground surface elev. ____

12 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5YR 5/3	v. grav SL	gran ↓	vfr ↓	none ↓
		LL1=12" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 147

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

11 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	cb fsl	gran	vfr	none
		LL1=11" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # 148

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

11 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	fr	none
Bs	7.5 4/6	grav fsl	↓	↓	↓
		LL1=11" / refusal auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 149

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

10 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	grav fsl	gran	fr	none
Bs	7.5 5/6				
		LLI = 10" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 150

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	grav fsl	gran	fr	none
Bs	7.5 4/6				
		LLI = 13" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 151

☐ Test Pit ☒ Boring ☐ Probe

4 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	fr	none
Bs	10YR 4/6	grav fsl	↓	↓	↓
		LLI = 14" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 152

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

9 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
E	10.6/2	fsl	gran	fr	none
Bhs	7.5 4/4	L	↓	↓	↓
		LLI = 9" / refusal auger			

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Applicant Name: Hammond Ridge Development

Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 153

☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

13 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/3	grav fsl	gran	fr	none
Bs1	7.5 4/6	↓	↓	↓	↓
Bs2	7.5 5/6	↓	↓	↓	↓

LLI = 13" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 154

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

14 " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E Bhs	7.5 4/3	fsl	gran	vfr	none
Bs	7.5 4/6	grav fsl	↓	↓	↓

LLI = 14" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 155

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

22 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	gr fsl	gran	vfr	none
Bs	10YR 4/6	gr sl	↓	↓	↓

LLI = 22" auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # 156

☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

16 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	fsl	gran	vfr	none
Bs	10 4/6	grav fsl	↓	↓	↓

LLI = 16" / refusal auger

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

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PAGE ____ OF ____

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
	Hammond Ridge Development	T1 R8 WELS ME

Exploration Symbol # 157 — ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

9 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/6	fsl	gran	vfr	none
Bs	10YR 5/6	gr fsl	↓	↓	↓
		LLI = 9"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 158 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

11 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
E	7.5 6/2	gr SL	gran	vfr	none
Bs	10YR 5/6	gr fsl	↓	↓	↓
		LLI = 11"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 159 — ☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

10 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs	10YR 3/6	fsl	gran	vfr	none
		LLI = 10"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 160 — ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

18 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 3/4	fsl	gran	vfr	none
Bs	7.5 4/6	gr L	↓	↓	↓
		LLI = 18"/refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # 161 ☐ Test Pit ☒ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. ____

22 " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	vfr	none
Bs	7.5 5/6	gr fsl	↓	↓	↓
	↓	↓ LL1 = 22"	↓	↓	↓
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 162 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

15 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/3	fsl	gran	vfr	none
Bs	7.5 5/6	gr fsl	↓	fr	↓
			LL1 = 15" / refusal		
			auger		

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 163 ☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

21 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5 4/4	fsl	gran	vfr	
Bs	7.5 4/6	↓	↓	↓	none
Bs2	10 5/4	gr SL	abk	fr	↓
		LL1 = 21" / refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

Exploration Symbol # 164 ☐ Test Pit ☒ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

8 " Depth: ☐ of exploration, or ☒ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Bs	7.5YR 4/6	fsl	gran	vfr	none
		LL1 = 8" / refusal			
		auger			

Soil Details

Soil Series/Phase Name:

Limiting Factor: NO " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic: ____ Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # TP 326 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal (excav)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	gravSL	gran	vfr	
~~BS1~~	7.5YR 4/6	cobb SL			none
BS2					
BC	10YR 5/4	grav SL	abk/ platy	friable	few fine
C	2.5Y 5/3	cobb SL	massive	firm	c+d

LL = 60" / excavator

Soil Details: Soil Series/Phase Name: skerry grav SL

Limiting Factor: 25 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # TP327 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

28 " Depth: ☐ of exploration, or ☒ to refusal (hand)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	grav fsl	gran	vfr	
~~BS1~~	7.5YR 4/6				none
BS2	7.5YR 4/6				
BC	10YR 5/4		abk	fr	few fine

LL = 28" / refusal hand dug

Soil Details: Soil Series/Phase Name:

Limiting Factor: 18 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

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SECTION 13

URBAN IMPAIRED STREAM SUBMISSIONS

SECTION 13

URBAN IMPAIRED STREAM

The site is not located in the watershed of an urban impaired stream; therefore, this section is not applicable.

SECTION 14

BASIC STANDARDS SUBMISSIONS

SECTION 14

BASIC STANDARDS

EROSION AND SEDIMENTATION PLAN

A. Narrative. The proposed 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 on-site vegetation or disturbance of any on-site soil. The general erosion and sediment control specifications and details, as provided within this section, are intended to describe measures to be used by contractors working on the site to maintain compliance with the standards established in the BMPs. These standards include information on temporary and permanent erosion control measures, rates of seeding and applied mulch, slope and soil stabilization, effect of construction schedule, and other details.

   The proposed location and use of erosion control measures on-site are shown on the plan located in Section 12 of this application. There are no known existing erosion control concerns with the site. Implementation of proper erosion control measures will be required by site contractors to confine sediment and debris within the limit of soil disturbance. Proper use and maintenance of erosion control measures will provide protection against off-site transport of sediment and discharge of sediment to undisturbed areas of the development.

B. Completion Date: Summer 2027.

C. Site Features. For site features please refer to the enclosed plan.

D. Temporary and Permanent Erosion Control Measures. For temporary and permanent erosion control measures please refer to the enclosed plan.

E. Limits of Disturbed Areas. Areas of disturbance will be limited to the proposed work shown on the enclosed plan.

F. Design Drawings and Specifications. For design drawings please refer to the enclosed plan. The following specifications will be utilized by the site contractor during construction of the project.

APPENDIX 14A

EROSION CONTROL PLAN SPECIFICATIONS

A. General

1. All work and measures will be as per the Maine Erosion and Sediment Control BMPs manual.

2. The following specifications will be employed.

B. Prior to Construction

1. Prior to beginning of construction, erosion and sedimentation controls shall be in place.

C. During Construction

1. Exposed soil surfaces will be treated immediately if they are to remain ungraded more than 30 days, or if they are at final grades.

2. Drainage ways, either designed or incidental, will have filter barriers installed.

3. All work and materials necessary to minimize sediment loss from the site will be provided.

4. All erosion control measures will be inspected and repaired after every rainfall greater than ½-inch and at least daily during rain events lasting longer than 24 hours.

D. Post Construction

1. Erosion control measures will be maintained until permanent soil stabilization has been achieved with a growth of vegetation greater than 90%.

SOIL PROTECTION AND EROSION CONTROL

PART 1 - GENERAL

1.01 Description of Work

A. Provide and maintain devices to control erosion, siltation, sedimentation, and dust that occur during construction operations. Undertake every reasonable precaution and do whatever is necessary to avoid erosion of soil and to prevent silting of wetland areas and drainage ditches.

B. Provide measures to control dust caused whether on or off the project site. Maintenance of surrounding trees will reduce fugitive dust emissions and keep any generation confined to the operation area.

C. Deficiencies in erosion control measures indicated by failures or erosion will be corrected as soon as reasonably possible by providing additional measures or different techniques to correct the situation and prevent subsequent erosion.

D. Exposure of soils on embankments, excavations, and graded areas will be kept as short as possible. Initiate seeding and other erosion control practices as soon as reasonably possible.

1.02 Quality Assurance

A. Conform to all requirements of applicable Federal, State, and local permits and conform to the recommendations of the Maine Erosion and Sediment Control BMPs (see Part B below) whether the measures are specifically noted herein, or not.

B. Standards: Maine Erosion and Sediment Control BMPs Manual, hereinafter called Erosion Control Handbook.

PART 2 - PRODUCTS

2.01 Materials: Use the following materials to implement and construct erosion control measures.

A. Erosion Control Logs/Wattles: Tubular shaped photodegradable netted cylindrical fiber filled lineal erosion control products. Products such as Green Solutions (TM) are weed free and naturally biodegradable.
B. Temporary Erosion Control Matting (where necessary):

1. Surface Preparation:
   a. Conform to grades for slopes and ditches shown of the drawings.

b. Finish to a smooth and even condition with all debris, roots, stones, and lumps raked out and removed.
c. Loosen soil surface to permit bedding of the matting.
d. Unless otherwise directed, apply seed prior to placement.

2. Installation:
   a. Place strips lengthwise in the direction of the flow of water.
   b. Where strips are laid parallel or meet as in a tee, overlap at least four inches.
   c. Overlap ends at least six inches in a shingle fashion.
   d. The up-slope end of each strip of the matting will be turned down and buried to a depth of not less than six inches with the soil firmly tamped against it.
   e. Build check slots at right angles to the direction of the flow of water. Space so that one check slot or one end occurs within each 50 feet of slope length. Construct by placing a tight fold of the matting at least six inches vertically into the ground and tamp the same as up-slope ends.
   f. Bury edges of matting around the edges of the catch basins and other structures.
   g. Where determined by the Engineers, additional seed will be spread over matting, particularly at those locations disturbed by building the slots. Matting will then be pressed onto the ground with a light lawn roller or by other satisfactory means.
   h. Drive staples vertically into the ground flush with the surface.
   i. On slopes flatter than 4:1, space staples not more than three feet and one row, alternately spaced, down the center.
   j. On grades 4:1 or steeper, place in the same three rows, but spaced two feet apart.
   k. On all overlapping or butting edges, double the number of staples, with the spacing halved; all ends of the matting and all required check slots will likewise have staples spaced every foot.

C. Hay Bale: Rectangular shaped bales of hay or straw weighing at least 40 pounds per bale; free from noxious weed seeds and rough or woody materials.

D. Mulch: Type and use as specified by the Erosion Control Handbook

1. Long fibered hay or straw in dry condition and which are relatively free of weeds and foreign matter detrimental to plant life.
2. Mulch netting: Plastic or nylon mesh netting with approximate openings of ¼-inch to 1-inch.

E. Permanent Seeding: Cut and fill slopes and disturbed areas will be stabilized as follows:

1. Four inches of loam will be spread over disturbed areas and smoothed to a uniform surface.

2. In lieu of tests, agricultural limestone will be spread at the rate of three tons per acre. 10-20-20 fertilizer will follow at the rate of 800 lbs. per acre. These two soil additives will be incorporated into the soil prior to seeding.

3. Following seed bed preparation, back slopes will be seeded to a mixture of 83% creeping red fescue, and 17% rye grass. Seeding rate is 3 lbs. per 1,000 square feet. Lawn quality sod may be substituted for seed.

4. Hay mulch at the rate of 90 lbs. per 1,000 square feet of a hydro-application of asphalt, wood, or paper fiber will be applied following seeding. A suitable binder such as Curasol or Terratack will be used on hay mulch for wind control.

5. If final seeding of the disturbed areas is not completed by September 15th of the year of the construction, then on that date these areas will be graded and a cover crop of rye at the rate of 112 lb/acre or 3 lb/1,000 sq. ft. will be applied. The rye seeding will be preceded by an application of 3 tons of lime and 800 lbs. of 10-20-20 fertilizer or its equivalent and covered by a layer of jute mat to aide in stabilization.

PART 3 - EXECUTION

3.01 Construction

A. Hay Bales:

1. Install as directed by Erosion Control Handbook, and stake with required stakes.

B. Mulch:

1. Undertake after each area has been properly prepared.

2. When seed for erosion control is sown prior to placing the mulch, place mulch on the seeded areas within 48 hours after seeding.

3. Blowing chopped mulch will be permitted.

4. Hay mulch should cover the ground enough to shade it, but the mulch should not be so thick that a person standing cannot see the ground through the mulch.

5. Remove matted mulch or bunches.

C. Temporary Erosion Control Matting (where necessary):

1. Surface Preparation:
   a. Conform to grades for slopes and ditches shown of the drawings.
   b. Finish to a smooth and even condition with all debris, roots, stones, and lumps raked out and removed.
   c. Loosen soil surface to permit bedding of the matting.
   d. Unless otherwise directed, apply seed prior to placement.

2. Installation:
   a. Place strips lengthwise in the direction of the flow of water.
   b. Where strips are laid parallel or meet as in a tee, overlap at least four inches.
   c. Overlap ends at least six inches in a shingle fashion.
   d. The up-slope end of each strip of the matting will be turned down and buried to a depth of not less than six inches with the soil firmly tamped against it.
   e. Build check slots at right angles to the direction of the flow of water. Space so that one check slot or one end occurs within each 50 feet of slope length. Construct by placing a tight fold of the matting at least six inches vertically into the ground and tamp the same as up-slope ends.
   f. Bury edges of matting around the edges of the catch basins and other structures.
   g. Where determined by the Engineers, additional seed will be spread over matting, particularly at those locations disturbed by building the slots. Matting will then be pressed onto the ground with a light lawn roller or by other satisfactory means.
   h. Drive staples vertically into the ground flush with the surface.
   i. On slopes flatter than 4:1, space staples not more than three feet and one row, alternately spaced, down the center.
   j. On grades 4:1 or steeper, place in the same three rows, but spaced two feet apart.
   k. On all overlapping or butting edges, double the number of staples, with the spacing halved; all ends of the matting and all required check slots will likewise have staples spaced every foot.

D. Permanent Seeding:

1. Seed with appropriate seeds and application rates as noted in Section 2.01C.

2. Mulch areas where seeding has been applied. Do not mulch seeded areas where matting will be immediately installed.

E. Topsoil Storage:

1. Topsoil which is stockpiled on the site for use in loam applications will be placed out of natural drainages, in piles that have side slopes of 2:1 to 1.5:1.

2. A trench (depth as required) will be constructed around the base of the pile to prevent eroding soil from washing into drainages.

F. Dust Control: Utilize the application of sprinkled water to reduce the emission of airborne soil particulates from the Project site.

G. Temporary Berms: Construct temporary barriers along the toe of embankments using side drains as necessary.

H. Temporary Basins: Construct temporary sedimentation basins adequate to avoid siltation of surface water bodies.

I. Other Temporary Measures:

1. Type and use will be as specified in the Erosion Control Handbook.

J. Winter Stabilization Notes

1. At this time, it is not expected that significant soil disturbance will occur during winter months or periods of heavy icing. If construction is performed during these times, the following construction practices will be followed.
   a. All disturbed areas not stabilized with stone or other measures will have approved erosion control matting installed and be dormant seeded.
   b. No frozen soil material or material containing significant snow or ice will be used for fill material.
   c. All material stockpiles will have silt fence and/or hay bales installed downgradient of piles.
   d. Follow general erosion control notes described previously wherever possible and as conditions permit.

3.02 Maintenance

A. Inspect erosion control practices immediately after each rainfall greater than ½-inch and at least daily during rainfall lasting longer than 24 hours or snowmelt for damage. Provide maintenance and make appropriate repairs or replacement.

B. Remove silt from around hay bales when it has reached one foot above grade or prior to expected heavy runoff or siltation.

C. Repair matting if any staples become loosened or raised, or if any matting becomes loose, torn, or undermined, make satisfactory repairs immediately.

3.03 Removal of Temporary Erosion Control

A. Remove temporary materials and devices when permanent soil stabilization has been substantially achieved. For vegetated areas, substantially complete means 95% vegetated cover has been established.

B. Level and grade to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.

C. Remove unsuitable materials from site and dispose of them in a lawful manner.

APPENDIX 14B

INSPECTION AND MAINTENANCE

The following Maintenance Plan will be employed for this facility. The Owner will be responsible for all maintenance. Erosion control measures for this site were designed by:

Chip Haskell, P.E.
Haley Ward, Inc.
One Merchants Plaza, Suite 701
Bangor, Maine 04401
(207) 989-4824
chaskell@haleyward.com

A Pre- and Post-Construction Maintenance Plan for the stormwater management system and erosion control measures are included in this section.

MAINTENANCE PLAN

The MDEP's Stormwater Management for Maine: Best Management Practices (2006), and the MDEP's Chapter 500: Stormwater Management were used as guidelines in the development of this Maintenance Plan. General maintenance requirements are listed below.

A. DURING CONSTRUCTION

The general contractor will be responsible for the inspection and maintenance of all stormwater management system components during construction.

Inspection: Inspection of disturbed and impervious areas, erosion control measures, materials' storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site will be performed at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. Inspections shall be conducted by a person with knowledge of erosion and stormwater control, including the standards and conditions in the permit.

Maintenance: All erosion control measures will be kept in effective operating condition until areas are permanently stabilized. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation will be completed within seven calendar days and prior to any rainfall event.

Documentation: A log shall be kept summarizing the inspections and any corrective action taken. A copy of the log is provided at the end of this section, and is titled, *Construction Inspection Log.*

B. POST-CONSTRUCTION

The Owner or their assigns will be responsible for the inspection and maintenance of all stormwater management system components.

Inspection and Corrective Action

1. *Vegetated Areas:* Inspections and maintenance of vegetated areas will be performed early in the growing season or after significant rainfall to identify any erosion problems. Areas where erosion is evident will be covered with an appropriate lining, or erosive flows will be diverted to an area able to handle the flows. Any bare areas or areas with sparse growth will be replanted.

2. *Gravel Surfaces:* Inspections and maintenance of gravel surfaces shall be conducted in the spring, fall, and after significant rain events. Areas showing signs of scouring shall be promptly addressed to prevent water channelization. Additionally, the surface should be stabilized to minimize dust during operations.

3. *Roadways:* Gravel roadways will be graded regularly as needed.

4. *Ditches, Swales, and Culverts*: Inspections and maintenance of ditches, culverts, and swales will be performed in the Spring, late Fall, and after rain events greater than 1-inch in depth to remove any obstructions to flow, to remove any accumulated sediments within the structures, and to repair any erosion of channel linings, check dams, inlet protection, or outlet protection. Vegetated ditches and swales must be mowed no more than twice per year and cut no less than 6-inch in height.

5. *Stone-berm Level Lip Spreader:* Inspections and maintenance for stone-bermed level lip spreaders shall occur annually, at a minimum, and will encompass inspection and repair of the downslope and turnout for any erosion. If necessary, level spreader shall be increased in size if the flow is not distributed to the buffer evenly. Any accumulation of sediment within the spreader bays or turnout pools shall be cleaned out.

6. *Inspection:* Shall be performed by an individual with experience and/or training on the maintenance and functions of these devices.

7. *Documentation:* A log will be kept summarizing the inspections, maintenance, and any corrective action taken. A copy of the log is provided at the end of this section, and is titled, *BMP Inspection Log*.

8. *Recertification Requirement*: 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.

    a. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
    b. 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.
    c. 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.

APPENDIX 14C

HOUSEKEEPING

1. Spill Prevention - During construction, controls will be used to prevent pollutants from being discharged from materials on site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

2. Groundwater Protection - During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater will not be stored or handled in areas of the site draining to an infiltration area. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

3. Fugitive Sediment and Dust - Actions will be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil will not be used for dust control. Water will be used for dust control during construction.

   Operations during wet months that cause mud to be tracked off the site onto public roads will provide sweeping of the road areas at least once per week and prior to significant storm events.

4. Debris and Other Materials - Litter, construction debris, and chemicals exposed to stormwater will be prevented from becoming a pollutant source. The nature of this development will not cause problems related to debris and other materials.

5. Trench or Foundation De-Watering - If de-watering is necessary, the collected water will be removed from the ponded area and spread through natural wooded buffers or discharged into a construction sedimentation basin. The water will not be allowed to flow over disturbed areas to the site.

HAMMOND RIDGE DEVELOPMENT COMPANY, LLC
CONSTRUCTION INSPECTION LOG

Inspection Date	Inspector (Name and Qualifications)	Major Observations	Work Performed

Notes

1) Major Observations include the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Major Observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.
2) Work Performed will include a description of the corrective action taken, the date the corrective action was taken, and the name and qualifications of the person taking the corrective actions
3) The log must be made accessible to MDEP staff, and a copy must be provided upon request.
4) The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

HAMMOND RIDGE DEVELOPMENT COMPANY, LLC
CONSTRUCTION INSPECTION LOG

Date	Inspector (Name and Qualifications)	ID Number	BMP Structure	Work Performed	Comments

Notes

1) If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal.
2) BMP structures shall be numbered sequentially and located on attached site map.
3) The log must be made accessible to MDEP staff, and a copy must be provided upon request.
4) The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization.

INSPECTION AND MAINTENANCE PLAN FOR STORMWATER MANAGEMENT STRUCTURES (BMPS)		
	INSPECTION SCHEDULE	**CORRECTIVE ACTIONS**
VEGETATED AREAS	Annually early spring and after heavy rains	Inspect all slopes and embankments and replant areas of bare soil or with sparse growth
		Armor 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
DITCHES, SWALES AND OPEN STORMWATER CHANNELS	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
CULVERTS	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
CATCHBASINS	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
ROADWAYS AND PARKING AREAS	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
RESOURCE AND TREATEMENT BUFFERS	Annually in the spring	Inspect buffers for evidence of erosion, concentrated flow, or encroachment by development
		Manage the buffer's vegetation with the requirements in any deed restrictions
		Repair any sign of erosion within a buffer
		Inspect and repair down-slope of all spreaders and turn-outs for erosion
		Install more level spreaders, or ditch turn-outs if needed for a better distribution of flow
		Clean-out any accumulation of sediment within the spreader bays or turnout pools
		Mow non-wooded buffers no shorter than six inches and less than three times per year
WETPONDS AND DETENTION BASINS	Annually in fall and after heavy rains	Inspect the embankments for settlement, slope erosion, piping, and slumping
		Mow the embankment to control woody vegetation
		Inspect the outlet structure for broken seals, obstructed orifices, and plugged trash racks
		Remove and dispose of sediments and debris within the control structure
		Repair any damage to trash racks or debris guards
		Replace any dislodged stone in riprap spillways
		Remove and dispose of accumulated sediments within the impoundment and forebay
FILTRATION AND INFILTRATION BASINS	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
PROPRIETARY DEVICES	As specified by manufacturer	Contract with a third-party for inspection and maintenance
		Follow the manufacturer's plan for cleaning of devices
OTHER PRACTICES	As specified for devices	Contact the department for appropriate inspection and maintenance requirements for other drainage control and runoff treatment measures.

NOTE: This is a general list of stormwater BMPs. Not all BMPs are applicable for a given site.

SECTION 15

GROUNDWATER

Bedrock Geology Map
Surficial Geology Map

SECTION 15

GROUNDWATER

Narrative and Report:

1. Location and Maps: Applicable maps have been provided in this section.

2. Quantity: Hammond Ridge Development Company, LLC is proposing a subdivision consisting of 41 single-family dwelling lots, nine commercial/mixed-use lots that will potentially include multi-family condominiums, rental cabins, a laundry facility, public restrooms, a retail space, and a maintenance garage. Each single-family dwelling lot will include a three-bedroom, single-family home that generates 270 gallons per day (gpd) of wastewater per dwelling for a total of 13,770 gpd. The commercial/mixed-use lots approximate wastewater generation is projected to be the following:

    - Laundry facility – 1,272 gpd
    - Condominiums (29 units total) – 6,564 gpd
    - Retail space – 244 gpd
    - Public restroom – 1,500 gpd
    - Rental cabins (22 units total) – 4,000 gpd
    - Maintenance garage – 120 gpd

    The combined residential and commercial/mixed-use wastewater generation is projected to be 24,770 gpd. This amounts to an estimated total combined yearly flow of approximately 9.05 million gallons (MG). Water usage has been estimated based on the assumption that water usage is 20% higher than wastewater generation. This is based on calculations using the State of Maine Subsurface Wastewater Disposal Rules. It is therefore expected that the site will use approximately 29,724 gpd of groundwater during maximum usage. See **Section 16**, Subsection C for more information.

3. Sources: There will be no storage of hazardous materials on the site. The site will utilize subsurface wastewater disposal, and the applicable HHE-200 documentation will be provided when available. No engineered stormwater infiltration is proposed for this development. There is an existing gasoline aboveground storage tank (AST) located at the Activity Center (Knifes Edge Brewery), approximately 350 feet from the nearest portion of one of the proposed two-bedroom multi-family rental units. There are no other known sources of potential contamination nearby.

4. Measures to prevent degradation: At a minimum, the proposed developed drinking water wells will be at least 300 feet upgradient/cross-gradient from the proposed subsurface wastewater disposal systems and the existing gasoline AST. If any proposed well locations are to be located within 1,000 feet of an

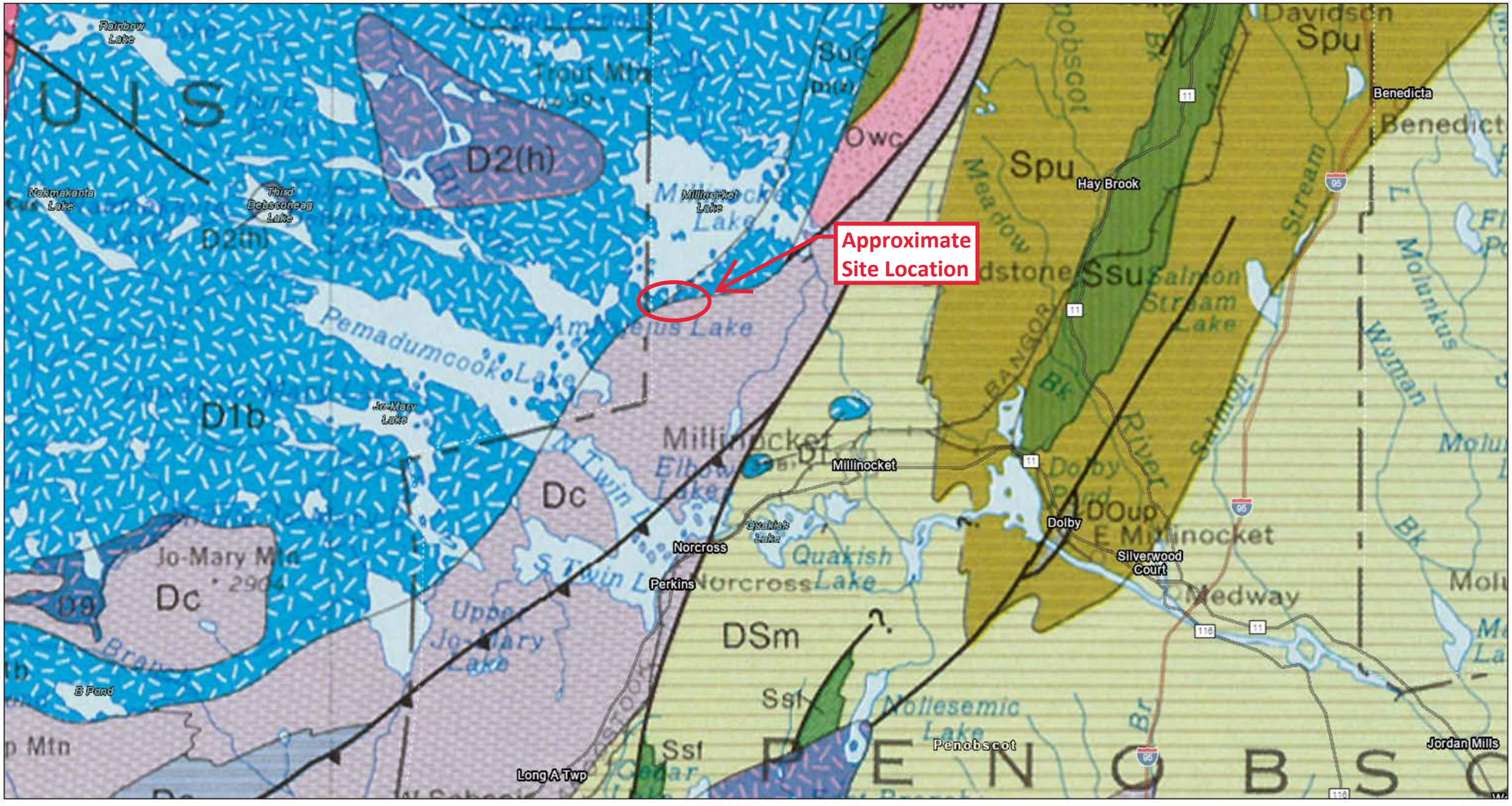
underground storage tank (UST), a setback waiver will be requested through the Drinking Water Program. No USTs are currently planned for installation at the site. No monitoring program is necessary or proposed for this development.

Groundwater Protection Plan: This development does not meet the criteria of being required to provide a Groundwater Protection Plan.

Monitoring Plan: This development does not meet the criteria of being required to provide a Monitoring Plan.

Monitoring well installation report: This development does not meet the criteria of being required to provide a well installation report.

MGS Bedrock Map



LEGEND:
Dc = Carrabassett Formation (Metamorphic Bedrock)
D1b = Devonian Granite (Intrusive Bedrock)

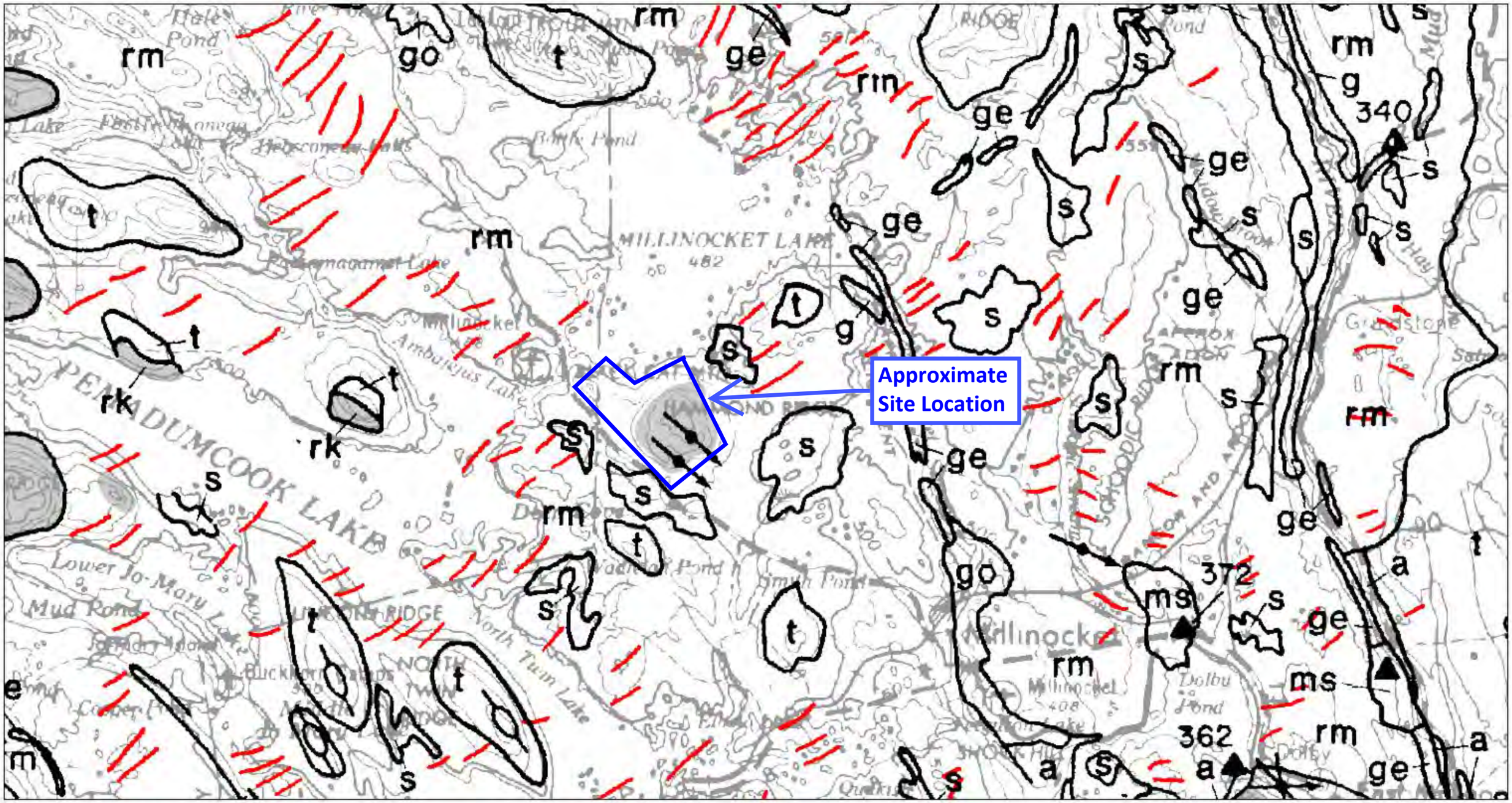
Source: Maine Geological Survey, Bedrock Geologic Map of Maine, 1985

1:230,387

0 2 4 8 mi
0 3.25 6.5 13 km

Earthstar Geographics, Maine Geological Survey, Province of New Brunswick, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS, NRCan, Parks Canada

MGS Surficial Geology Map



LEGEND:

rm = Ribbed moraine, mostly till, but stratified sediments are present in some of the deposits.

Gray Shaded Areas = Thin drift, defined as mostly bedrock outcrops or thin (< 3 meters) surficial deposits.

Arrows with circle = glacial striations indicating ice flow direction on bedrock.

Source: Maine Geological Survey, Surficial Geology of the Millinocket 1^{O} X 2^{O} Quadrangle, Maine, Open File No. 87-12, 1987.

1:138,232

0 1.25 2.5 5 mi

0 1.75 3.5 7 km

Maine Geological Survey

SECTION 16

WATER SUPPLY

Water Well Table
Water Well Map

SECTION 16

WATER SUPPLY

INTRODUCTION

Hammond Ridge Development Company, LLC is proposing a subdivision consisting of 41 single-family dwelling lots, nine commercial/mixed-use lots, and one maintenance facility lot. Each single-family dwelling lot will include a three-bedroom, single-family home that generates 270 gallons per day (gpd) of wastewater per dwelling, which in total is 13,770 gpd. In addition, the proposed development will contain nine commercial/mixed-use lots that will potentially include multi-family condominiums, rental cabins, a laundry facility, public restrooms, a retail space, and a maintenance garage. The maintenance garage will be located south and separated from the majority of the rest of the development. The commercial/mixed-use lots approximate waste generation is projected to be the following:

- Laundry facility – 1,272 gpd
- Condominiums (29 units total) – 6,564 gpd
- Retail space – 244 gpd
- Public restroom – 1,500 gpd
- Rental cabins (22 units total) – 4,000 gpd
- Maintenance garage – 120 gpd

The combined residential and commercial/mixed-use wastewater generation is projected to be 24,770 gpd.

The area associated with this development is anticipated to be approximately 125 acres, within the larger portion of the property owned by Hammond Ridge Development Company, LLC, which in total is approximately 1,424 acres.

Bedrock groundwater wells will be utilized as the potable water supply sources for the development. The single-family dwelling lots and maintenance facility will have individual wells, as could the commercial lots. If well(s) drilled in or near the commercial lots have sufficient groundwater yield to serve as a Public Water Supply (PWS) well, the owner may elect to submit the appropriate PWS application for one or more wells.

For ease of review, the order and labels of this section follow the order of the SLODA permit guidance.

A. WATER SUPPLY METHOD

Any new water supply well(s) proposed to supply groundwater for drinking and sanitary water at the site will be located using the proper setbacks and well construction methods. Any proposed PWS wells will be required to follow the Maine

Department of Health and Human Services (DHHS) Drinking Water Program (DWP) guidelines. A new PWS well for the commercial lots will likely be a Non-Transient Non-Community (NTNC) PWS.

1) **Individual Well(s)**

Hammond Ridge Development Company, LLC is proposing 41 individual wells to service single-family dwellings on 41 lots, and one individual well to service the maintenance facility.

2) **Common Well(s)**

At a minimum, any PWS well will be at least 300 feet upgradient/cross-gradient from the proposed subsurface wastewater disposal systems. If any proposed well locations are to be located within 1,000 feet of an underground storage tank (UST), a setback waiver will be requested through the DWP. No USTs are currently planned for installation at the site.

a. *Hydrogeology Report*

The average daily demand based on the calculated operational requirements is 24,770 gpd, which equates to a daily proposed development well demand (all wells) of approximately 17.2 gallons per minute (gpm), as detailed in *Section C Total Usage*, below.

Based on data available from the Maine Geological Survey (MGS) Well Database, there are three existing bedrock wells on-site and ten bedrock wells within a 6,000-foot radius of the site (see map and table following this section). The search radius was extended beyond 2,000 feet to capture more wells in the area and gain more data. Note that the MGS water well database identifies three wells on-site, but it is our understanding that only two wells are currently at the site and neither of them are the 345 gpm well listed as number 139229. The driller likely entered incorrect well location coordinates and this wells' information will be disregarded for the purposes of our assessment. In addition, the on-site wells are mapped in the correct location on MGS mapping and there are likely other wells in the area that are not listed on the MGS water well database.

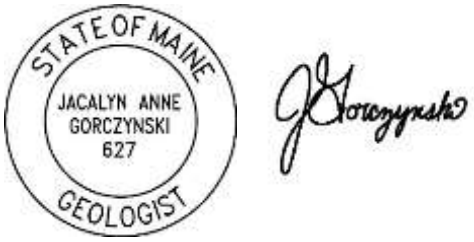
The MGS water well database identifies depths of identified wells on or around the site ranging from 160 to 520 feet below ground surface and water bearing fractures at depths ranging from 6 feet to 300 feet below ground surface. The reported well yields are from drilled bedrock wells and are generally between 0.75 and greater than 30 gpm.

The majority of the proposed development is located in the "saddle" between Black Cat Mountain (to the west) and Hammond Ridge (to the east), with the surrounding topography dropping off to the north and south. Groundwater flow in the proposed development area is expected to be north on the

northern portion of the development toward Millinocket Lake north of the site, and to the south on the southern portion of the development toward a wetland south of the Golden Road, following respective topographic grades. The development would therefore be upgradient of four of the nearby private drinking water wells between the proposed development and Millinocket Lake. The MGS water well database wells listed south of the development are shown to be along the shore of Ambajejus Lake.

As evident by the MGS Well Database, bedrock wells drilled by residential well drillers in the area commonly find adequate water for residential use, with some wells exhibiting a yield exceeding typical residential use. Given these high yields, site development is not anticipated to impact the availability or quality of groundwater to nearby residents. As the water demand for the site is higher than residential demands, any shortfall could be met with storage or additional wells.

Should the owner decide to have an on-site PWS well, Haley Ward will work closely with the Maine DWP to ensure that the required steps for approval of a new public water supply are met. This work will be completed under the supervision of a geologist certified (or licensed) to practice in the State of Maine. The geologist will also have significant specific experience in the study of groundwater resources and the development of groundwater drinking water supplies.



January 10, 2025
Jacalyn Gorczynski, LG
Senior Project Geologist
Haley Ward, Inc.

b. *Engineering Report*

Drinking water wells have not yet been drilled for the proposed portion of the development and thus the yield and water quality are not known, therefore, an engineering report cannot be submitted at this time. However, once the information is available, a report from a registered professional engineer will be compiled to document adequate provisions for the proper long-term operation and maintenance of the water supply system, identification of the personnel responsible for that operation and maintenance, and design plans and detail sheets, as appropriate, for the water storage, treatment, and distribution system. The engineer's report will be submitted after installation, testing, and submittal of the well installation report.

c. *Drinking Water Well Installation Report*

Any drinking water PWS well(s) will not be drilled until after MDEP approval of the well location, a site visit, and preliminary approval from the DWP. A well installation report will be developed and submitted to MDEP and the DWP within eight weeks of completion of installation, pumping test, and water quality sampling and analysis. The well report will include at a minimum the following:

- Completed Maine DWP Request for Final Approval of a NTNC Public Water Well Form;
- Summary of well installation and testing;
- Site map showing the actual installed location and potential or known contaminant sources within 1,000 feet of the well;
- Well drilling log (describing strata and fractures depths observed) and well construction details (casing type/diameter, and length); and
- An estimate of the well yield will be provided, and a description of the method used to estimate the well yield will be described.

d. *Long-Term Safe Yield and Zone-Of-Influence Determination*

If determined to be necessary by MDEP or DWP, a pumping test will be completed to determine long-term safe yield of the drinking water well(s), including a prediction of operating levels and determination of the zone of influence and zone of capture for the well. Pumping test data and interpretation, monitoring data, proposed monitoring plan, or other information required by MDEP or DWP to assess these factors and the potential impact on existing wells and surface water resources due to groundwater withdrawal will be documented in the well installation report.

e. *Public Water Supply*

Should the owner decide to have an on-site PWS well, it is likely that the site will be considered a public water supply if it regularly serves at least 25 individuals daily for at least 6 months per year. No PWS well(s) have been drilled for the proposed development; however, as required, a preliminary well approval form for a NTNC PWS will be submitted to the DWP for approval before a well can be drilled.

3) Well Construction in Shallow-to-Bedrock

Overburden thickness and depth to bedrock are expected to be approximately 40 feet within the proposed development portion of the site based on Maine Water Well Database data. According to surficial mapping, presented in **Section 15**, there may be areas with 10 feet or less of overburden on the eastern portion near Hammond Ridge. Any well drilling location that encounters bedrock at 10 feet or less will be constructed with casing set a minimum of 20 feet below the solid bedrock surface.

4) **Additional Information**
None required at this time.

5) **Off-Site Utility Company or Public Agency**
There are no municipal water supplies near the site and Haley Ward has determined on-site bedrock wells are the best source for this site, therefore, a letter from an off-site supplier is not needed.

6) **Other Sources**
As indicated, there will be multiple single-family dwellings with individual wells and potentially PWS well(s) at the site. No other sources are intended to be used.

B. SUBSURFACE WASTEWATER DISPOSAL

Subsurface wastewater disposal systems are planned to be installed on-site. The proposed development is approximately 125 acres (117 acres: single-family dwelling and commercial lots, 8 acres: maintenance facility lot), which should provide adequate spacing for the required setbacks and siting of the water supply wells upgradient/cross-gradient to the proposed disposal systems and stormwater structures. In addition, the proposed development is surrounded by the larger site area, in total 1,424 acres, which would allow for additional spacing.

C. TOTAL USAGE

Water Demand: Based on the proposed development design, the average amount of groundwater needed from the on-site well(s) is estimated to 24,770 gpd. This daily volume equates to an annual (365 day) maximum estimated water demand of 9.05 million gallons (MG). Assuming the daily demand occurs in a 24-hour period, the average pumping rate would be approximately 17.2 gpm across the site.

Sustainable Well Yield: Given the geologic setting of the proposed development, it is reasonable to assume that recharge to the groundwater aquifers will rely on infiltration of precipitation, which falls on the property and, in particular, the upgradient watershed east of the proposed development on Hammond Ridge and upgradient watershed west of the proposed development on Black Cat Mountain. The average annual recharge to the bedrock aquifer supplying the proposed on-site wells was estimated by applying assumptions generally accepted by hydrogeologic practitioners, academics, and regulators in the State of Maine.

Groundwater recharge is a function of precipitation amount, runoff, transpiration, and infiltration. The portion of precipitation that does not runoff directly to streams and is not taken up and transpired by vegetation is available to infiltrate the ground and recharge the aquifer. The MGS reports that, on average, 7.5% to 20% of incident precipitation on till soils, which is the type of soil the proposed development is located on, ultimately enters the groundwater system as recharge (Gerber, 1985). The average precipitation for this northern zone of Maine is reported by the National

Oceanic and Atmospheric Administration (NOAA) as approximately 40 inches, which is approximately the average overall value of precipitation for the State of Maine (42 inches).

The entire site area encompasses approximately 1,424 acres, approximately 18 acres of which will be impervious surface. The following assumptions have been made in calculating a conservative estimate for average annual groundwater recharge:

1. It is assumed that 1,406 acres of the total 1,424-acre property will contribute recharge to groundwater on the site.
2. An estimated 10% of precipitation will enter the aquifer as recharge (4.0 inches).

Accordingly, the estimated value for available recharge via precipitation for the site and upgradient watershed is:

4.0" x 1 FT / 12" x 1,424 acres x 43,560 FT^2 / acre = 20,182,800 FT^3
20,182,800 FT^3 x 7.48 gal / FT^3 = **154,660,070 gallons**

This value is rounded to **155 MG** per year.

Assessment of Water Supply and Demand. As noted above, the proposed development may require approximately 24,770 gpd, and an annual water demand of approximately 9.05 MG. The estimate of available annual site groundwater recharge is 155 MG. The proposed site demand equates to approximately 6% of average annual recharge.

In our opinion, given the volume of water estimated to be withdrawn is approximately 6% of the estimated combined area annual groundwater recharge, the risk of adverse effects from on-site groundwater withdrawal to off-site wells or protected natural resources (as defined in 38 M.R.S.A. § 480-B) is low.

REFERENCES

Ground Water Recharge Rates for Maine Soils and Bedrock, Gerber 1985, Geologic Society of Maine, Selected Papers on the Hydrogeology of Maine.

Maine Geological Survey Water Wells Database list of wells on-site and withing 6,000 feet of the Site.

Well Number	Town	Address	Well Use	Well Type	Casing Length (ft)	Overburden Thickness (ft)	Well Depth (ft)	Yield (gpm)	Vein1 Depth (ft)	Vein1 Yield (gpm)	Vein2 Depth (ft)	Vein2 Yield (gpm)
139230	T1 R8 WELS	MILLINOCKET LAKE ROAD	COMMERCIAL	BEDROCK	59	42	440	0.75	120	0.75		
139283	T1 R8 WELS	118 BLACKCAT ROAD	DOMESTIC	BEDROCK	50	37	320	2	110	2		
~~139229~~	~~T1 R8 WELS~~	~~OFF MILLINOCKET LAKE ROAD~~	~~COMMERCIAL~~	~~BEDROCK~~	~~50~~	~~42~~	~~440~~	~~345~~	~~6~~	~~95~~	~~1~~	~~250~~
147572	T1 R9 WELS	26 SUNRISE SHORES	DOMESTIC	BEDROCK	40	22	320	10				
124923	MILLINOCKET	4 CLEARWATER LANE	DOMESTIC	BEDROCK	46	30	320	>30	250	1	300	>30
140834	T1 R8 WELS	197 BLACK CAT RD	DOMESTIC	BEDROCK	30	18	280	7				
130504	MILLINOCKET	41 AMBAJEJUS PKWY	DOMESTIC	BEDROCK	100	38	360	1	165	1		
143552	T1 R9 WELS	147 ROCK RIDGE RD	DOMESTIC	BEDROCK	40	28	520	1				
143535	T1 R9 WELS	83 DOC MOREYS LN	DOMESTIC	BEDROCK	57	40	430	15				
141590	T1 R9 WELS	271 ROCK RIDGE	DOMESTIC	BEDROCK	70	58	440	1				
136005	T1 R9 WELS	21 SHADY LANE	DOMESTIC	BEDROCK	70	54	160	20				
130510	T1 R6 WELS		DOMESTIC	BEDROCK	20	3	420	1.25				
125130	T1 R9 WELS	124 BLACKCAT RD	DOMESTIC	BEDROCK	50	15	300	0.5				

= Well listed as being on the site.

~~ABC~~ = Well listed as being on the site, but not on-site. Likely incorrect well location coordinates entered. Disregard this data.

(ft) = Feet (gpm) = gallons per minute

Source: (https://experience.arcgis.com/experience/cfbc9177649b466795c1f0d3f18f1f40/)

Maine Well Database

10/18/2024, 9:27:32 AM

Well Depth (ft)

- 150.1 - 200
- 250.1 - 300
- 300.1 - 400
- 400.1 - 500
- 500.1 - 600

GPM = Gallons Per Minute. Groundwater well yield.

1:36,112

0 0.2 0.4 0.8 mi

0 0.33 0.65 1.3 km

Esri, HERE, Garmin, Maxar

Maine Geological Survey
2015

SECTION 17

WASTEWATER DISPOSAL

Septic Letter with Table and Test Pit Logs
Sash Evaluation with Test Pits
Brewery Septic Design
Activity Center Septic Design
Event Center Septic Design

SECTION 17

WASTEWATER DISPOSAL

The Applicant intends to dispose of all wastewater using on-site subsurface wastewater disposal systems (i.e., septic tanks). Please refer to the following section for a breakdown of the proposed uses and the subsequent wastewater generated. Generation rates were obtained from the *State of* Maine *Subsurface Wastewater Disposal Rules*.

Single Family Lots
The development is proposing a total of 41 lots to be subdivided for the development of single-family dwellings. Each lot has been assumed to have a single-family home with a maximum of three bedrooms. Such a use generates 270 gallons per day (gpd) of wastewater per dwelling. Therefore, the subdivided, single-family lots will generate a total of **11,070 GPD** of wastewater.

Commercial Lots
The development will feature mixed-use lots, potentially including multi-family condominiums, rental cabins, a laundry facility, public restrooms, a maintenance garage, and retail space. Sash Engineering (Sash) has completed preliminary septic site evaluations for these uses and has provided estimates for waste generation from the commercial lots. Please refer to the letter and test pit data prepared by Sash, which outlines the estimated waste generation and potential system locations. According to this report, the commercial lots are projected to generate approximately the following:

- Laundry facility – 1,272 GPD
- Condominiums (29 total) – 6,564 GPD
- Retail space – 244 GPD
- Public restroom – 1,500 GPD
- Rental cabins (22 total) – 4,000 GPD
- Maintenance garage – 120 GPD

Activity Center And Event Center
In 2021, Sash conducted test pits and septic design for the Activity Center and Event Center. It was determined that the Activity Center and Brewery would generate approximately 2,331 GPD, while the Event Center was estimated to generate 822 GPD, for a total of 3,153 GPD. Please refer to the completed HHE-200 forms for all three septic systems.

Total
Together the proposed development will generate an estimated total of 27,923 gallons of wastewater per day.

It has been assumed that all the generated wastewaters will be disposed of via conventional septic systems. Test pits have been dug to confirm that on-site soils are suitable for wastewater disposal. In 2021, Sash evaluated soils around the Event Center and Activity Center and completed the design for the systems required. In 2023 and 2024, Sash evaluated soils within the proposed subdivision. The septic fields have been carefully laid out to meet the State's required setbacks, ensuring proper system functionality and environmental compliance. Designated locations for mixed-use lots have been placed in various areas throughout the major development zone where passing test pits were found. These areas will remain under the Applicant's ownership. If any of the mixed-use lots form a Homeowners Association, they will be granted legal access to these areas as needed. Please refer to the following letters and tables for the results of the evaluations mentioned. Please also refer to the Site Plans at the end of this application which include the location of each test pit.

Sash Engineering, Inc.
1179 North Perley Brook Road
Fort Kent, ME 04743
(207) 231-4349; sarah@sashengineering.com

Summary of Findings

January 7, 2025
23-09-Milli

Hammond Ridge Development Corp.
Attention: Matthew Polstein
30 Twin Pines Road
P.O. Box 669
Millinocket, ME 04462

Subject: Septic Considerations
Proposed Subdivision
Katahdin View Drive
T1 R8 WELS, Maine

Dear Matt:

Per your request, I have observed and logged several test pits for the Proposed Hammond Ridge Subdivision in T1 R8 Wels. The purpose of the test pits was to collect soils information to evaluate the viability of septic systems for the proposed development. I understand the development could include 21 residential lots in a southerly subdivision, and 20 residential lots in a northerly subdivision. Additionally, I observed test pits in the areas of potential commercial lots and public spaces.

The test pits were made in two groups. In 2023, 65 test pits were made for residential lots plus 16 test pits for the commercial lots. In 2024, 43 test pits were made in the residential lots and 25 in the commercial and public lots. The 2023 test pit locations were located using property lines overlaid on Google Earth and a handheld GPS. The 2024 test pit locations were selected based on the development plan and field located with a Trimble GPS. The test pit locations are shown on the “Conceptual Septic Locations” Plan.

The soils were generally Sandy Loam to Gravelly Sandy Loam, with varying amounts of stones, cobbles and boulders observed at most test pit locations. Some test pits encountered cemented soils and/or evidence of redoximorphic mottling, generally below 15 inches below the ground surface.

Residential Development

Test pits in each residential lot encountered soils that meet the minimum soil requirements to locate a subsurface wastewater disposal system to accommodate a 3-bedroom home, meeting the First Time System code requirements set forth in the State of Maine Chapter 241 Rules. Stone and pipe disposal fields sizes were used in project planning. Each lot is configured to accommodate a 20-foot by 45-foot disposal field, and a drilled well. As the project progresses, proprietary systems could be used, which would reduce the footprint for setbacks as well as tree clearing. Where restrictive layers were encountered above the 15-inch threshold, the system was relocated to areas with soils that met the 15-inch minimum. The findings from the 2023 residential lots are attached in Table 1. The logs for test pits made in 2024 are attached as Sheets 1 to 11.

Commercial Development

It is my understanding that commercial development may contain rental cabins (developed by Hammond Ridge Development Corporation - HRDC), multifamily condominiums (developed by HRDC or by others), a laundry facility (HRDC), a maintenance garage for HRDC, and retail space.

As the commercial development is still evolving, discrete septic systems were not designed and field located. Rather, areas that are suitable for septic disposal were identified and potential disposal fields were sized for likely use. Stone and Pipe systems were proposed for most of the disposal fields to be conservative for spacing. Project planning may consider proprietary devices which would reduce the footprint by roughly 30% for Infiltrators and 60% for Eljens. The following assumptions were used:

Maintenance Garage: (no floor drains tied to system)
Lot 1: Table 5C – 12 GPD/Employee = 10 x 12GPD = 120 GPD
With soil condition 3C, the required disposal area is 400 square feet.
Proposed - 2 double rows of 7 EQ24 Infiltrators, 9.3ft by 28 ft (448 sf)

Laundry Facility:
Lot 2: Table 5C – 300GPD/ machine + 12GPD/ employee = 4 x 300 GPD + 6 x 12GPD = 1,272 GPD
With soil condition 3C, 4,200 square feet of disposal area is required.
Proposed - 2@ 20 x 105 ft Stone and Pipe Disposal Fields (4,200 sf)

Condominiums: (29 units total)
Lot 3: 4 units – 3BR+10% short term rental poss. = 4 x 300GPD = 1,200 GPD
With soil condition 3C, the required disposal area is 3,960 square feet.
Proposed - 2@ 20' x 100' Stone and Pipe Disposal Fields (4,000 sf)

Lot 4: 11 units total (4 units, 4 units, 3 units)
4 units – same as Lot 3, for each.
Proposed - 2@ 20' x 100' Stone and Pipe Disposal Fields (4,000 sf), for each

3 units – 3BR+10% short term rental poss. = 3 x 300GPD = 900 GPD
With soil condition 3C, the required disposal area is 2,970 square feet.
Proposed - 2@ 15 x 100' Stone and Pipe Disposal Fields (3,000 sf)

Lot 5: 10 units total (4 units, 3 units, 3 units)
4 units – same as Lot 3 &4
Proposed - 2@ 20' x 100' Stone and Pipe Disposal Fields (4,000 sf)

3 units – same as Lot 4, for each
Proposed - 2@ 15 x 100' Stone and Pipe Disposal Fields, for each

Mixed Use:

Lot 6: 4@3BR Condo + retail space + café/deli

4 x 300 GPD + 8 employees x 12 GPD/ea + 100 GPD + 4 employees x 12GPD/ea

= 1200 GPD + 96 GPD + 148 GPD = 1,444 GPD

With soil condition 3C, the required disposal area is 4,864 square feet.

(café/deli sized with reductions for 200% tank size, multiple tanks, effluent filter and grease interceptor)

Proposed – 8 double rows of 20 EQ24 Infiltrators, 46 x 80 ft (5,120 sf)

Public Restroom:

Lot 7: Table 5C – 3GPD/user = 500 x 3 GPD = 1,500 GPD

With soil condition 3C, the required disposal area is 4,950 square feet.

Proposed – 8 double rows of 20 EQ24 Infiltrators, 46 x 80 ft (5,120 sf)

Rental Cabins:

Lots 8 and 9 are proposed to accommodate 8 and 14 rental cabins, respectively. Based on Table 5C of the State of Maine Plumbing code, rental cabins with housekeeping are subject to design loads of 50 gallons per day (GPD) per unit plus 50 GPD per bed.

Lot 8: 8 units – 4 @2BR + 4@3BR = 4 x 150GPD + 4 x 200GPD = 1,400 GPD

With soil condition 3C, the required disposal area is 4,620 square feet.

Proposed – 2@ 25' x 100' Stone and Pipe Disposal Fields (5,000 sf)

Lot 9: 14 units total

8 units- same as Lot 8

Proposed – 2@ 25' x 100' Stone and Pipe fields (5,000 sf)

6 units – 6@3BR = 6 x 200GPD = 1,200 GPD

With soil condition 3C, the required disposal area is 3,960 square feet.

Proposed - 4 double rows of 32 EQ24 Infiltrators, 22' x 128' (4,096 sf)

Test pits made in 2023 and 2024 for consideration of disposal areas for commercial and public use are attached as Sheets 12 to 23.

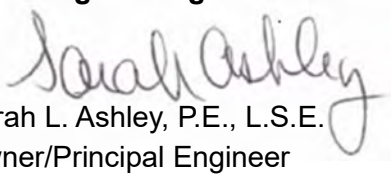
As a means to accommodate the evolving development, additional septic disposal areas have been identified for use as alternative locations. The total anticipated septic loading for the entire project is just under 16,000 gallons per day of effluent. Therefore, additional locations for disposal field sized to accommodate up to 8,000, or 50% of the total design loading, were identified. Three disposal fields accommodating 1,500 GPD and two disposal fields accommodating 1,800 GPD are shown on the "Conceptual Septic Locations" Plan.

It is anticipated that many of the disposal fields for the project will require 12 to 24 inches of fill. Each full design will factor in the proposed construction with required setbacks, as well as soils within the proposed disposal field area and must be completed by a licensed site evaluator prior to development.

It has been a pleasure to be of assistance to you on this project. If you have any questions, or if I may be of further assistance, please do not hesitate to call.

Sincerely,

Sash Engineering



Sarah L. Ashley, P.E., L.S.E.
Owner/Principal Engineer

LOT 1
0.74 AC

LOT 2
0.91 AC

LOT 3
1.10 AC

LOT 4
1.67 AC

LOT 5
1.21 AC

LOT 6
1.25 AC

LOT 7
0.84 AC

LOT 8
0.88 AC

LOT 9
0.74 AC

LOT 10
0.55 AC

LOT 11
0.53 AC

LOT 12
0.56 AC

LOT 13
.87 AC

LOT 14
1.08 AC

LOT 15
0.75 AC

LOT 16
0.63 AC

LOT 17
0.58 AC

LOT 18
0.50 AC

LOT 19
0.55 AC

LOT 20
0.50 AC

LOT 21
0.56 AC

LOT 22
0.80 AC

LOT 23
1.07 AC

LOT 24
0.71 AC

LOT 25
0.58 AC

LOT 26
0.53 AC

LOT 27
0.52 AC

LOT 28
0.52 AC

LOT 29
0.51 AC

LOT 30
0.51 AC

LOT 31
0.51 AC

LOT 32
0.51 AC

LOT 33
0.54 AC

LOT 34
0.51 AC

LOT 35
0.50 AC

LOT 36
0.78 AC

LOT 37
0.64 AC

LOT 38
0.50 AC

LOT 39
0.51 AC

LOT 40
0.50 AC

LOT 41
0.53 AC

LOT 1
MIXED-USE
4.9 AC

LOT 2
MIXED-USE
3.7 AC

LOT 3
MIXED-USE
1.4 AC

LOT 4
MIXED-USE
2.6 AC

LOT 5
MIXED-USE
3.0 AC

LOT 6
MIXED-USE
1.34 AC

LOT 7
OPEN SPACE
4.3 AC

LOT 8
MIXED-USE
1.9 AC

LOT 9
MIXED-USE
2.1 AC

BLACK CAT RD (EXISTING)

COMMON OPEN SPACE

LEACH FIELD, TYP

CONCEPTUAL PLANNING AREA 11/2021, TYP

PROPERTY LINE, TYP

COMMERCIAL USE (2)

CONDO (4)

ALTERNATIVE/
ADDITIONAL LEACH FIELDS, TYP

PROPERTY LINE SETBACK, TYP

CONDO WITH POTENTIAL FOR COMMERCIAL

SHORT TERM RENTAL

SHORT TERM RENTAL

CONDO WITH POTENTIAL FOR COMMERCIAL

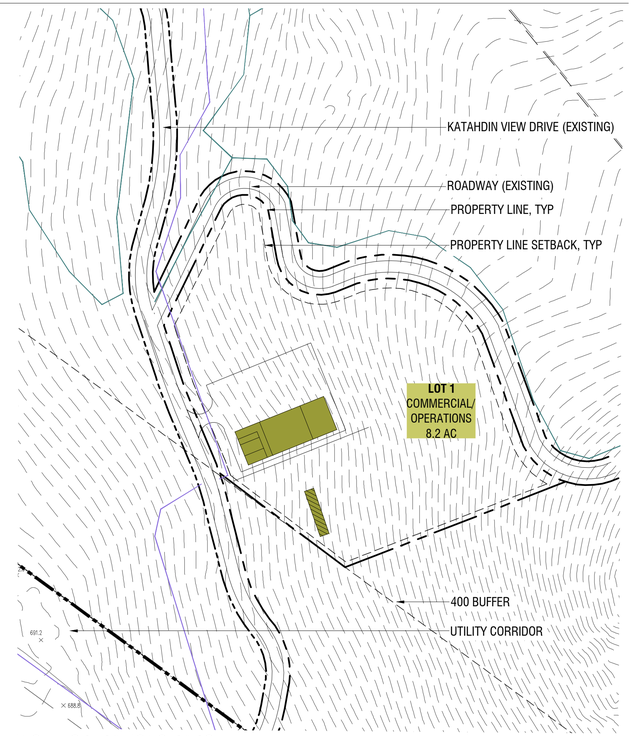
CONDO WITH POTENTIAL FOR COMMERCIAL

NORDIC TRAILS, TYP

BIKE TRAILS, TYP

SNOW MOBILE TRAILS, TYP

KATAHDIN VIEW DRIVE (EXISTING)



INSET: OPERATIONS PARCEL

0 75 150 300
SCALE: 1" = 150'-0"

ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

HAMMOND RIDGE DEVELOPMENT

T1 R8 WELS, ME

PREPARED FOR

REVISIONS DATE

ISSUE DATE

JANUARY 9, 2025

SHEET TITLE

CONCEPTUAL SEPTIC LOCATIONS

SHEET INFORMATION

L 1-03

NOT FOR CONSTRUCTION

Table 1 - Test Pit Summary

Test Pit	Predominant Soil Texture	Gravelly below…	Cobbles	Mottling	Consistence	Limit of Exploration	Meets Minimum Requirements for Septic
Southerly Subdivision							
TP-1	Sandy Loam	13"	Few	n/a	Friable	21"	Yes
TP-2	Sandy Loam	-	Some	n/a	Friable	19"	Yes
TP-3	Fine Sandy Loam	14"	Some	n/a	Friable	21"	Yes
TP-4	Sandy Loam	-	Some	n/a	Friable	19"	Yes
TP-5	Sandy Loam	18"	Some	n/a	Friable	22"	Yes
TP-6	Sandy Loam	9"	Some	n/a	Friable	18"	Yes
TP-7	Sandy Loam	9"	Very	n/a	Friable	16"	Yes
TP-8	Sandy Loam	15"	Some	n/a	Friable	20"	Yes
TP-9	Sandy Loam	-	Very	n/a	Friable	16"	Yes
TP-10	Sandy Loam	15"	Some	n/a	Friable	22"	Yes
TP-11	Sandy Loam	18"	Some	n/a	Friable	25"	Yes
TP-12	Sandy Loam	12"	Some	n/a	Friable	23"	Yes
TP-13	Sandy Loam	12"	Very	n/a	Friable	18"	Yes
TP-14	Sandy Loam	12"	Very	n/a	Friable	16"	Yes
TP-15	Sandy Loam	17"	Some	n/a	Friable	24"	Yes
TP-16	Sandy Loam	12"	Very	n/a	Friable	20"	Yes
TP-17	Sandy Loam	18"	Some	n/a	Friable	27"	Yes
TP-18	Sandy Loam	18"	Some	n/a	Friable	21"	Yes
TP-19	Sandy Loam	16"	Very	n/a	Friable	24"	Yes
TP-20	Sandy Loam	-	Some	n/a	Friable	18"	Yes
TP-21	Sandy Loam	22"	Few	n/a	Friable	22"	Yes
TP-22	Fine Sandy Loam	18"	Some	n/a	Friable	22"	Yes
TP-23	Loamy Sand	17"	Very	n/a	Friable	23"	Yes
TP-24	Loamy Sand	10"	Some	n/a	Friable	24"	Yes

Table 1 - Test Pit Summary

Test Pit	Predominant Soil Texture	Gravelly below…	Cobbles	Mottling	Consistence	Limit of Exploration	Meets Minimum Requirements for Septic
Northerly Subdivision							
TP-25	Sandy Loam	15"	Very	n/a	Friable	23"	Yes
TP-26	Sandy Loam	15"	Very	n/a	Friable	17"	Yes
TP-27	Sandy Loam	11"	Some	n/a	Friable	15"	Yes
TP-28	Sandy Loam	18"	Some	n/a	Friable	22"	Yes
TP-29	Sandy Loam	14"	Some	n/a	Friable	24"	Yes
TP-30	Sandy Loam	11"	Very	n/a	Friable	15"	Yes
TP-31	Sandy Loam	12"	Some	n/a	Friable	20"	Yes
TP-32	Sandy Loam	13"	Some	n/a	Friable	19"	Yes
TP-33	Sandy Loam	8"	Very	n/a	Friable	15"	Yes
TP-34	Sandy Loam	12"	Very	n/a	Friable	21"	Yes
TP-35	Sandy Loam	1"	Very	n/a	Friable	17"	Yes
TP-36	Sandy Loam	10"	Very	n/a	Friable	15"	Yes
TP-37	Sandy Loam	9"	Some	n/a	Friable	18"	Yes
TP-38	Sandy Loam	10"	Some	n/a	Friable	16"	Yes
TP-39	Sandy Loam	14"	Some	n/a	Friable	21"	Yes
TP-40	Sandy Loam	13"	Very	n/a	Friable	17"	Yes
TP-41	Fine Sandy Loam	-	Some	n/a	Friable	24"	Yes
TP-42	Sandy Loam	11"	Some	n/a	Friable	20"	Yes
TP-43	Sandy Loam	11"	Some	n/a	Friable	22"	Yes
TP-44	Sandy Loam	9"	Some	n/a	Friable	25"	Yes
TP-45	Sandy Loam	10"	Very	n/a	Friable	15"	Yes

Table 1 - Test Pit Summary

Test Pit	Predominant Soil Texture	Gravelly below…	Cobbles	Mottling	Consistence	Limit of Exploration	Meets Minimum Requirements for Septic
Commercial Lots							
TP-C1A	Sandy Loam	6"	Some	n/a	Friable	23"	Yes
TP-C1B	Sandy Loam	2"	Very	n/a	Friable	15"	Yes
TP-C2A	Sandy Loam	8"	Some	wet	Friable	16"	Yes
TP-C2B	Sandy Loam	10"	Some	n/a	Friable	16"	Yes
TP-C3A	Sandy Loam	-	-	wet	Friable	15"	Yes, Marginal
TP-C3B	Sandy Loam	20"	Some	n/a	Friable	24"	Yes
TP-C4A	Sandy Loam	14"	Very	n/a	Friable	18"	Yes
TP-C4B	Sandy Loam	3"	Very	n/a	Friable	20"	Yes
TP-C5A	Sandy Loam	12"	Few	n/a	Friable	19"	Yes
TP-C5B	Sandy Loam	10"	Some	n/a	Friable	21"	Yes
TP-C6A	Loamy Sand	16"	Some	n/a	Friable	22"	Yes
TP-C6B	Sandy Loam	9"	Some	n/a	Friable	21"	Yes
TP-C7	Sandy Loam	15"	Some	n/a	Friable	16"	Yes
TP-C8	Sandy Loam	12"	Some	n/a	Friable	20"	Yes
TP-C9	Loamy Sand	13"	Few	n/a	Friable	23"	Yes
Public Space							
TP-P1A	Sandy Loam	6"	Some	n/a	Friable	21"	Yes
TP-P1B	Sandy Loam	7"	Some	n/a	Friable	21"	Yes
TP-P2	Sandy Loam	10"	Some	n/a	Friable	16"	Yes
TP-P3A	Sandy Loam	4"	Some	n/a	Friable	17"	Yes
TP-P3B	Sandy Loam	4"	Some	n/a	Friable	17"	Yes

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

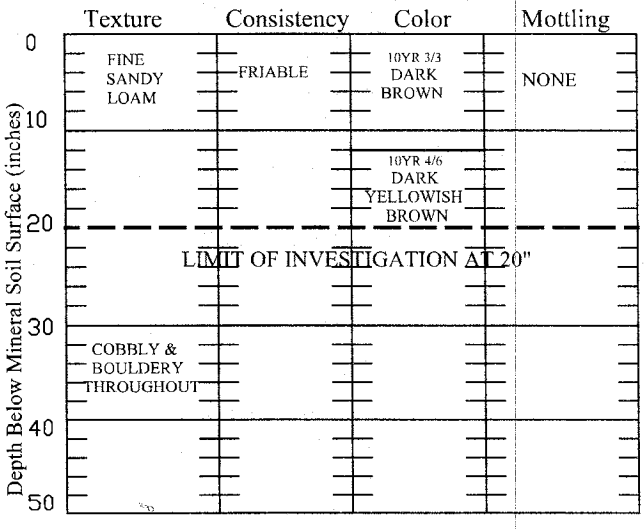
Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 201 ☒ Test Pit (Hand Dug) ☐ Boring

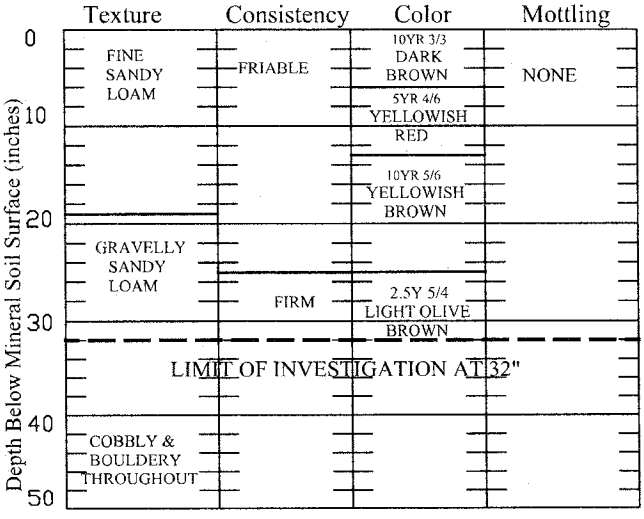
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	20 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 202 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil

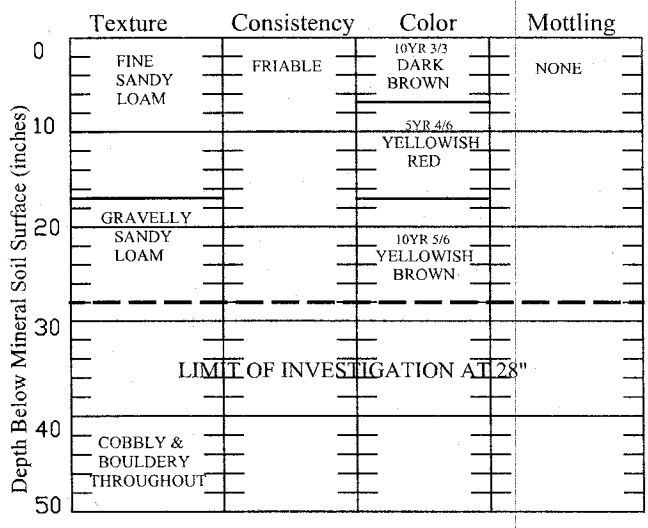


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	25 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 203 ☒ Test Pit (Excavator) ☐ Boring

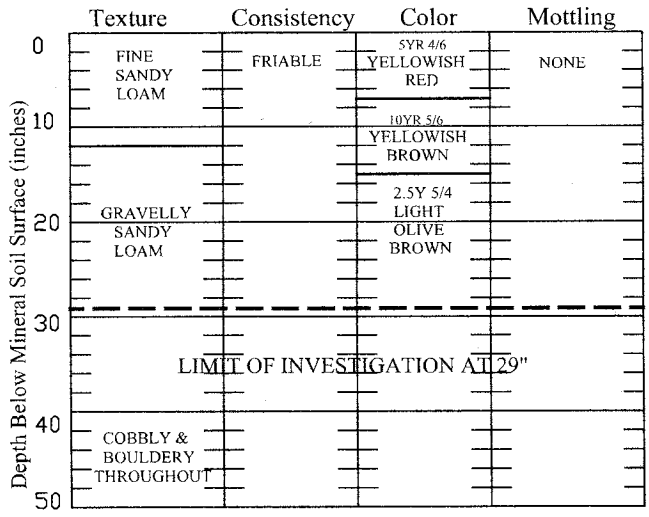
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	28 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 204 ☒ Test Pit (Excavator) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	29 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Astley — Site Evaluator Signature

#408 — SE #

12/22/24 — Date

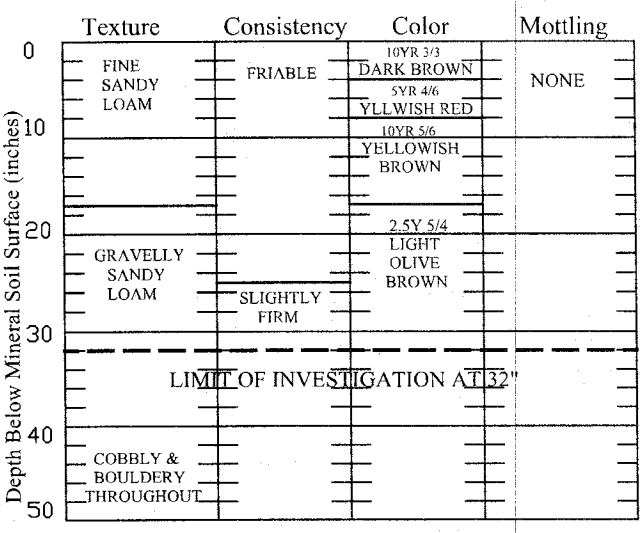
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

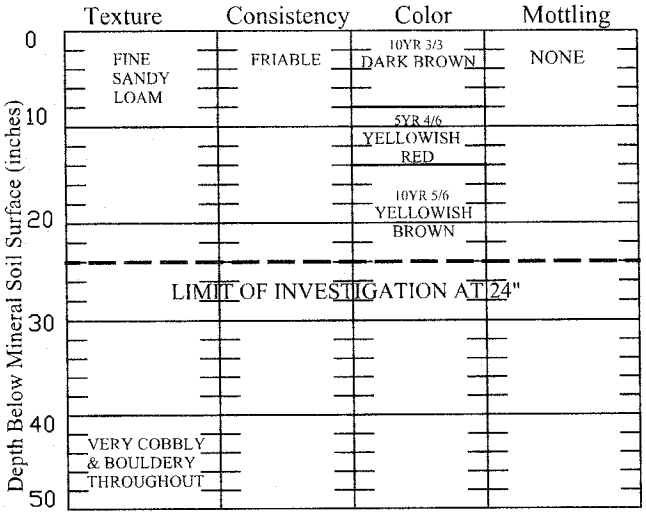
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 205 [x] Test Pit (Excavator) [ ] Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	25 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

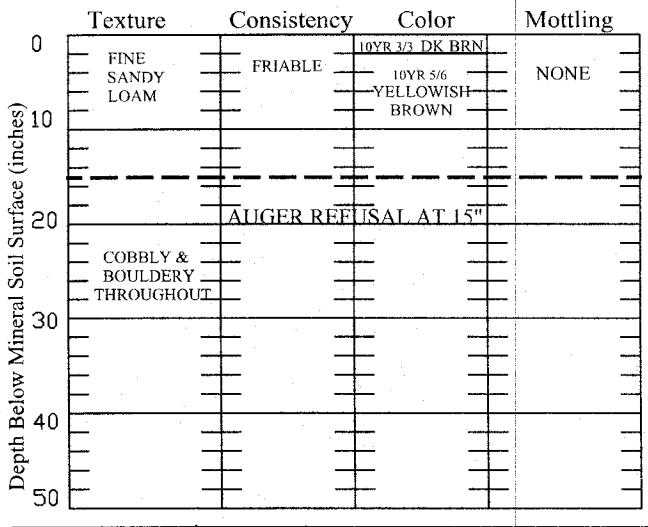
Observation Hole 206 [x] Test Pit (Excavator) [ ] Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	24 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

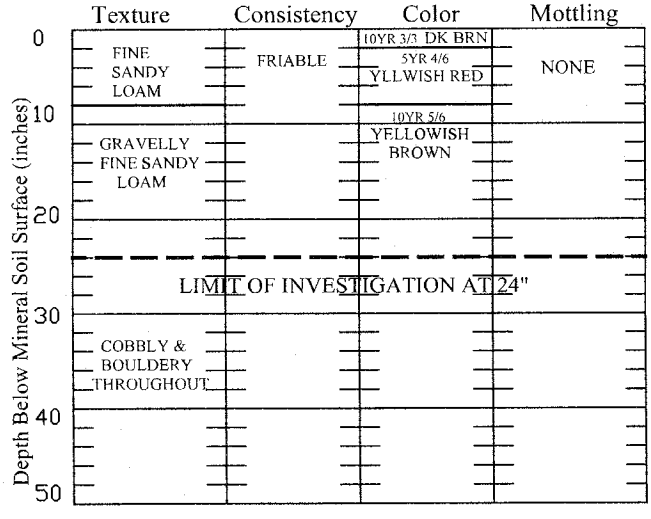
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 207 [x] Test Pit (Hand Dug) [ ] Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 208 [x] Test Pit (Hand Dug) [ ] Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	24 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Site Evaluator Signature	SE #	Date
Sarah Astley	#408	12/22/24

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

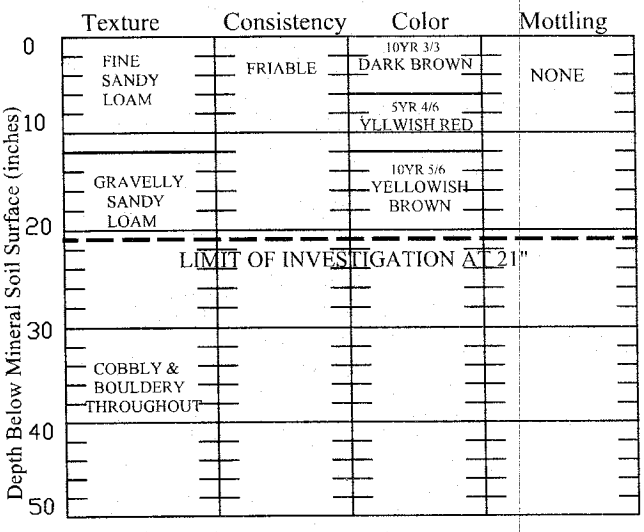
Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 209 ☒ Test Pit (Hand Dug) ☐ Boring

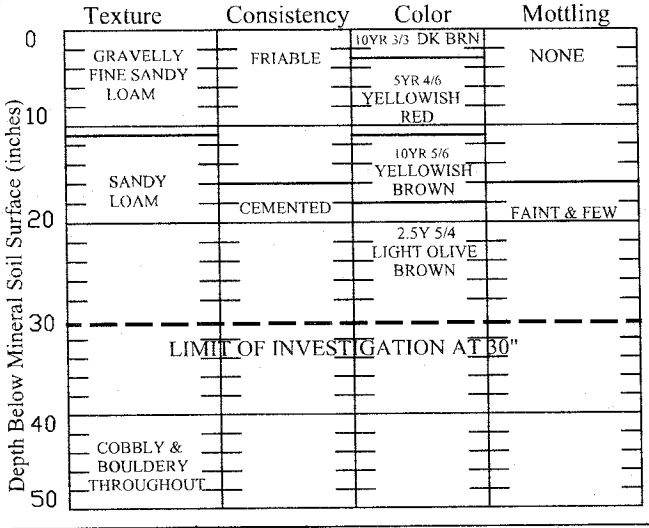
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 210 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil

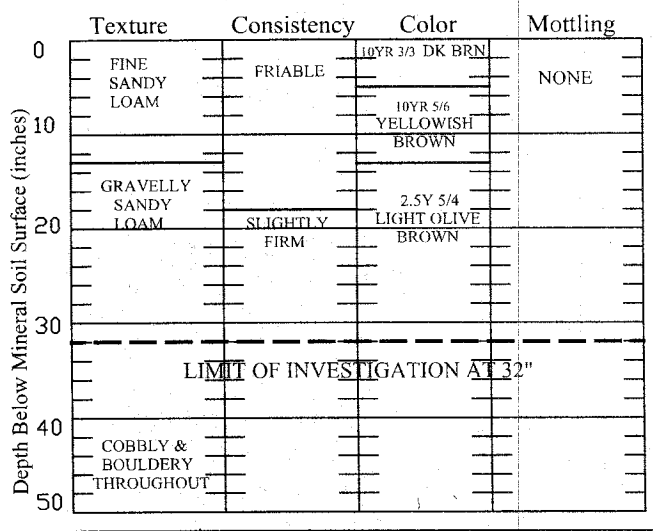


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 211 ☒ Test Pit (Excavator) ☐ Boring

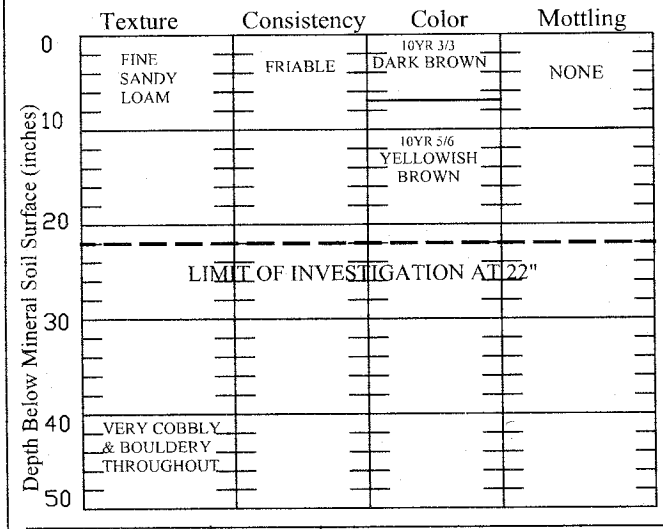
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 212 ☒ Test Pit (Hand Dug) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	22 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

12/22/24 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

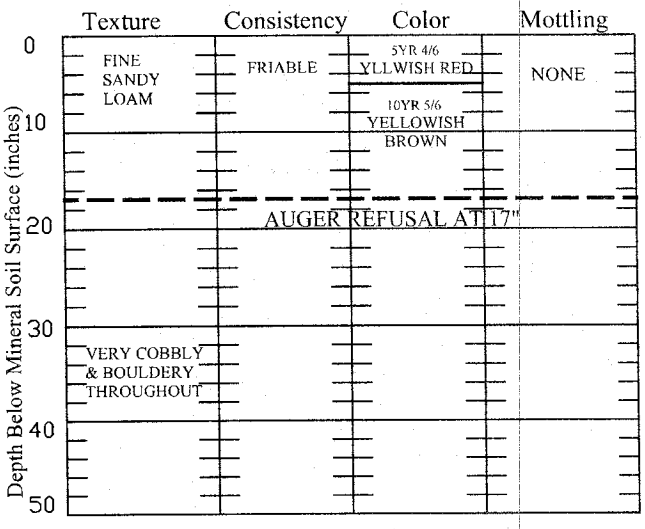
Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 213 ☒ Test Pit (Hand Dug) ☐ Boring

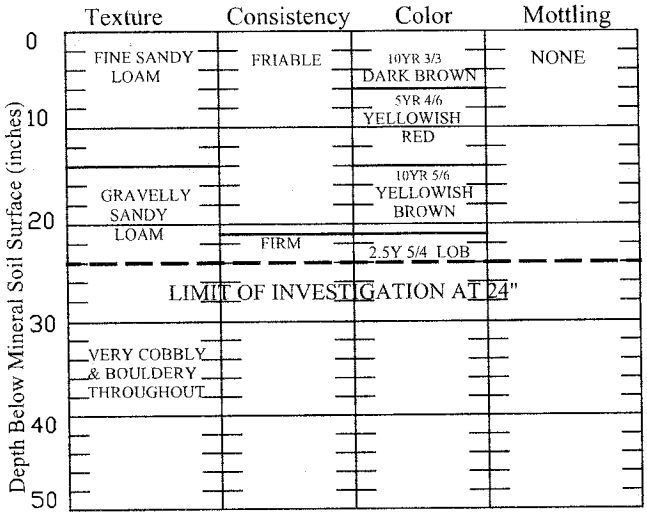
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	17 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 214 ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

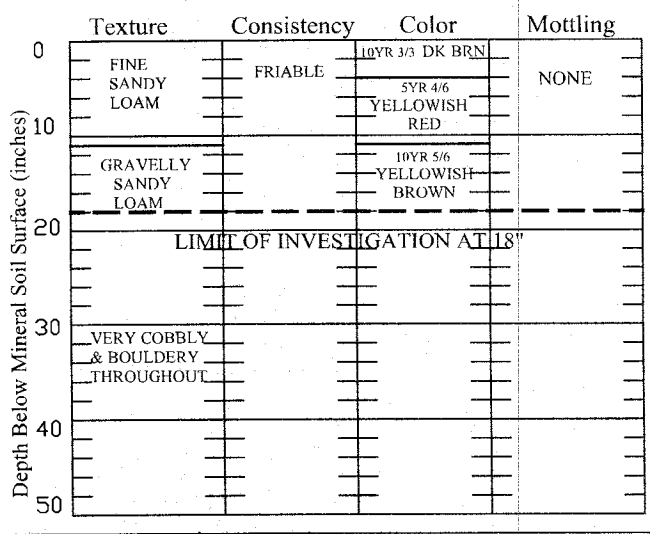


Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	21 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 215 ☒ Test Pit (Hand Dug) ☐ Boring

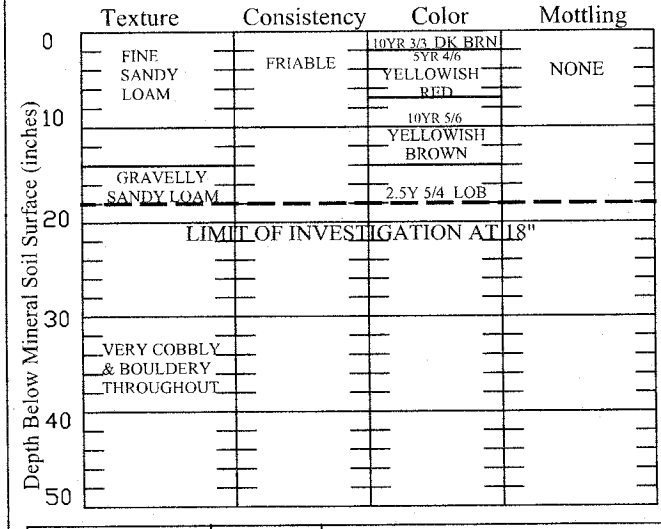
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	18 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 216 ☒ Test Pit (Hand Dug) ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	18 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

12/22/24 — Date

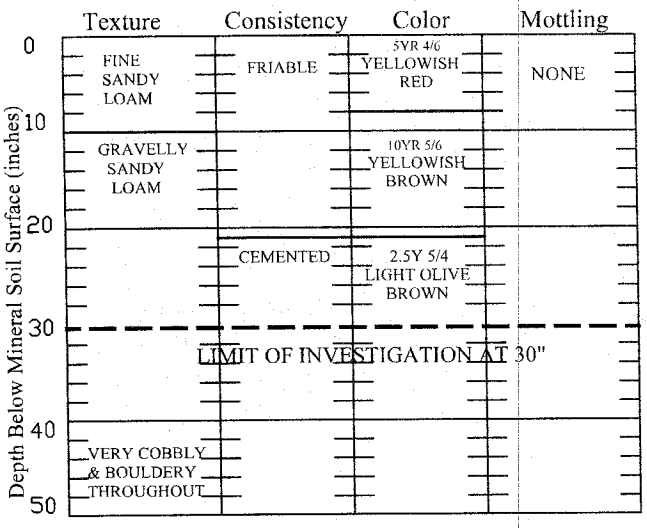
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

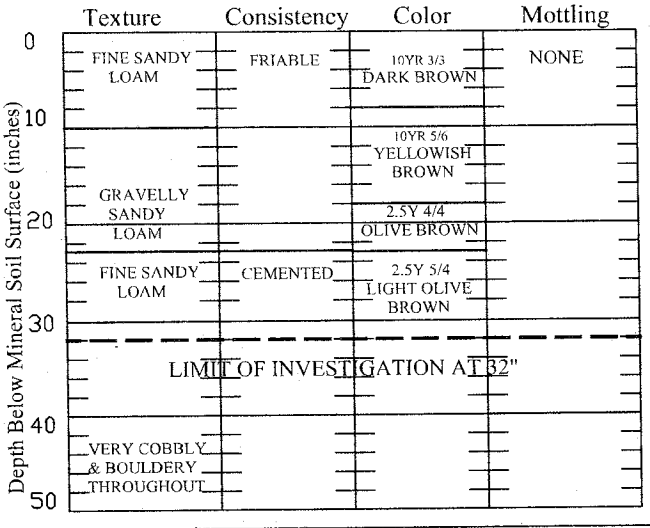
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 217 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	21 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

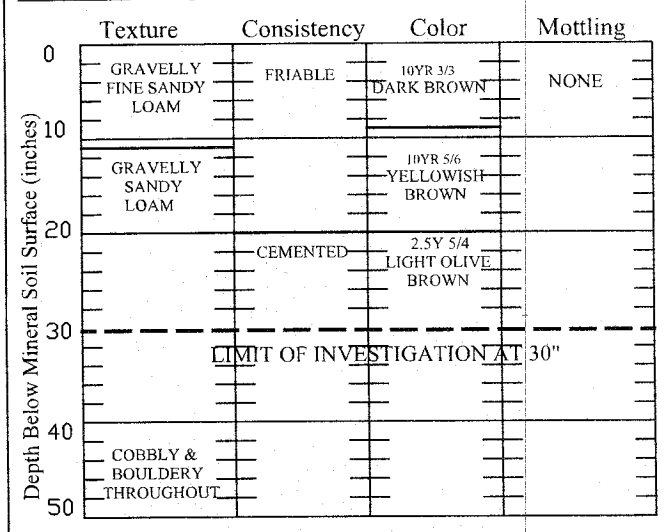
Observation Hole 218 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	23 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

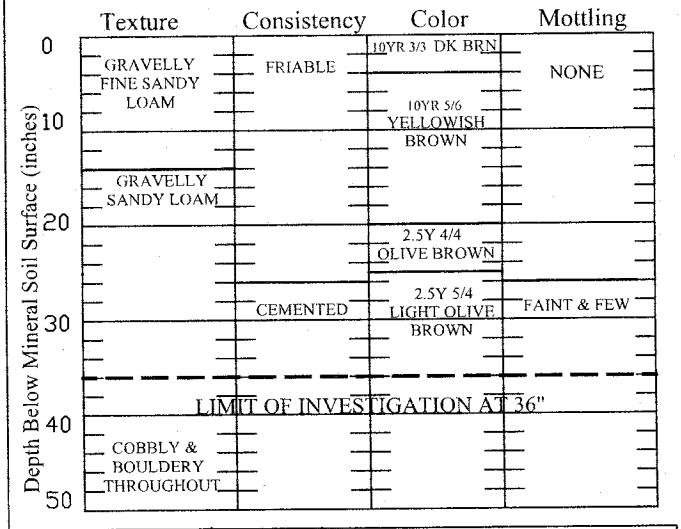
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 219 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 220 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	26 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
12/22/24 — Date

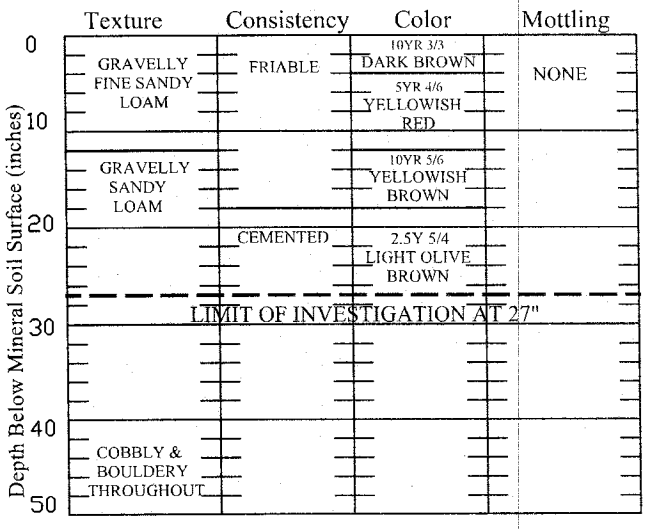
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

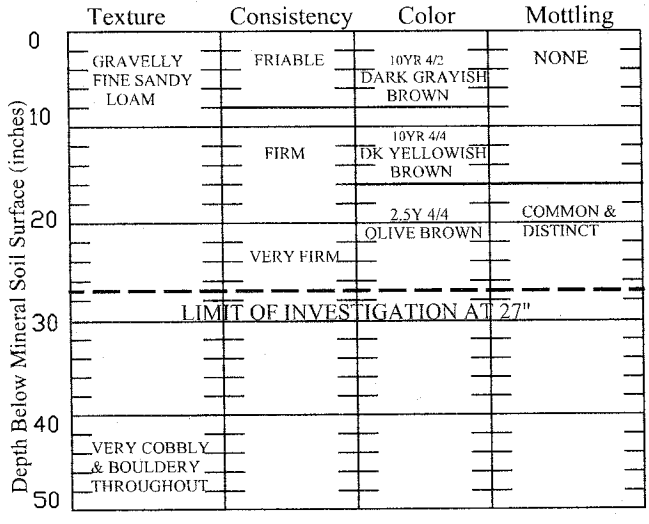
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 221 ☒ Test Pit (Excavator) ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

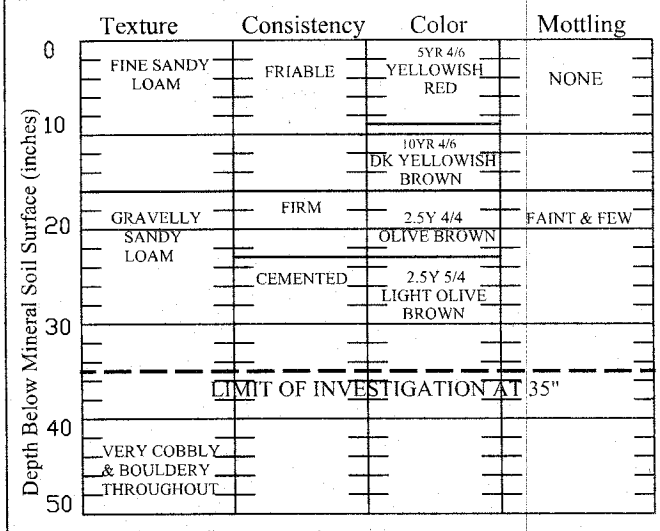
Observation Hole 222 ☒ Test Pit (Excavator) ☐ Boring
12 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / ____ Condition	E %	8 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

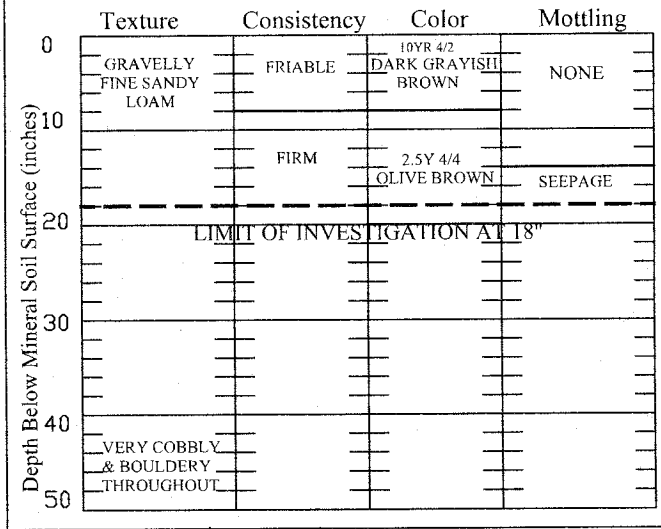
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 223 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 224 ☒ Test Pit (Hand Dug) ☐ Boring
8 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / E Condition	____ %	8 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
12/22/24 — Date

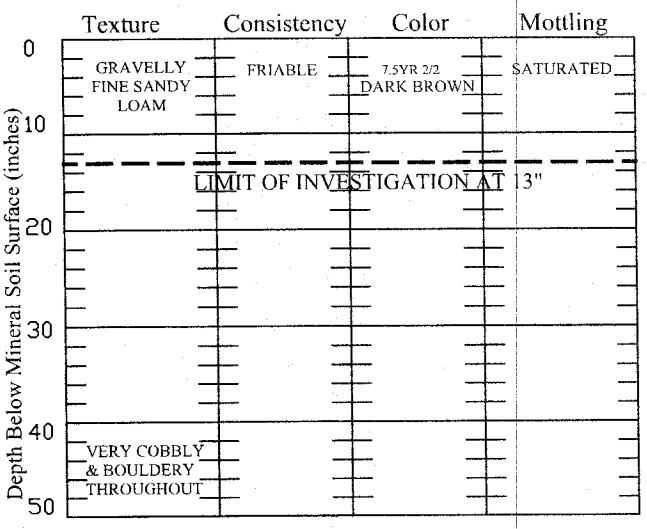
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

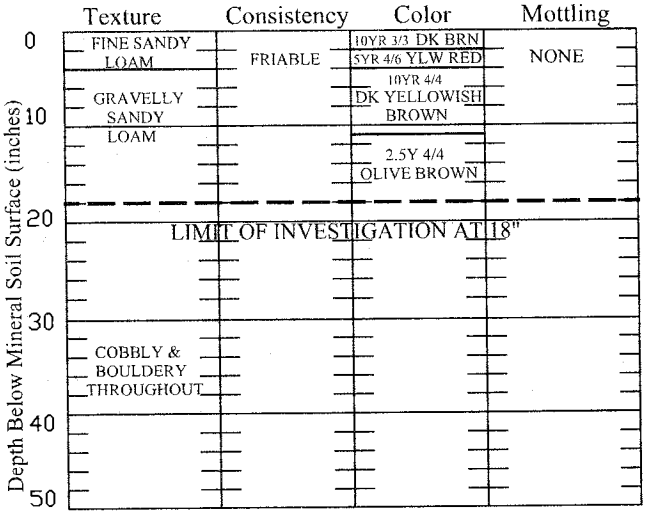
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 225 ☒ Test Pit (Hand Dug) ☐ Boring
12 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

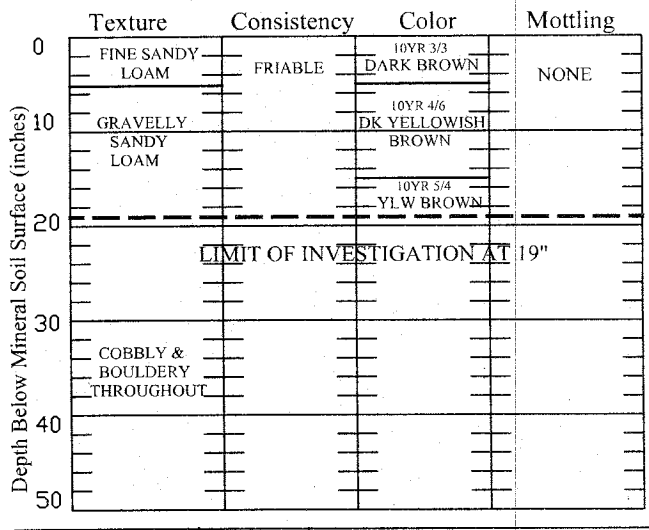
Observation Hole 225.1 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	18 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

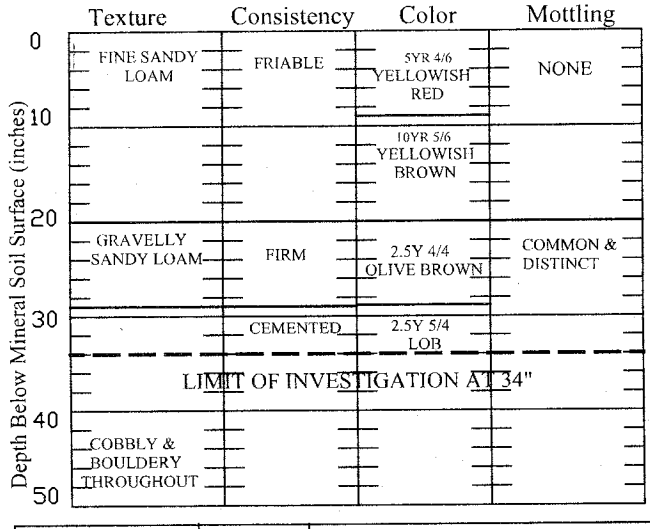
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 226 ☒ Test Pit (Hand Dug) ☐ Boring
5 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	19 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 227 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	20 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
12/22/24 — Date

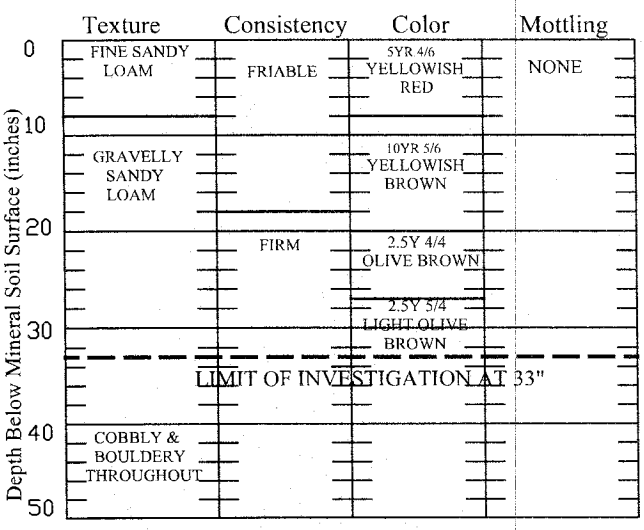
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

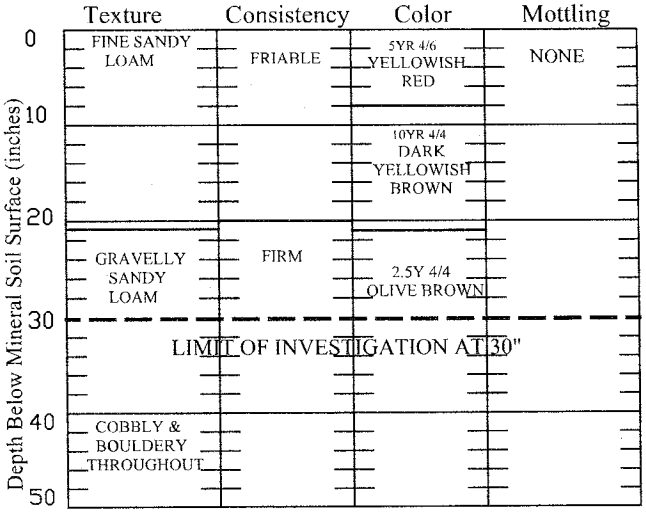
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 228 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

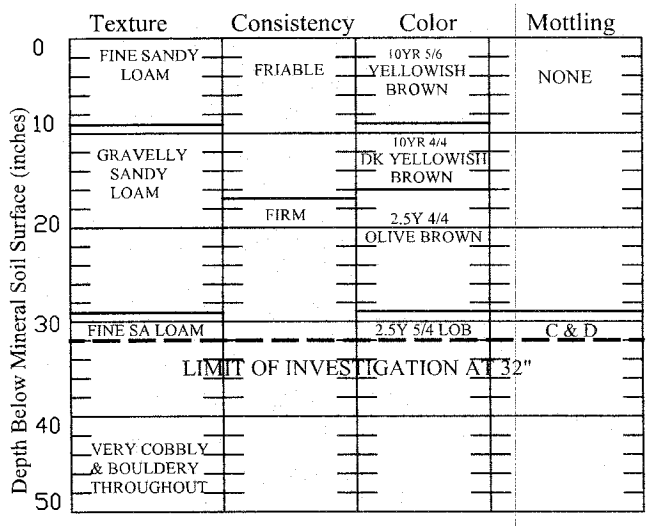
Observation Hole 229 ☒ Test Pit (Excavator) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

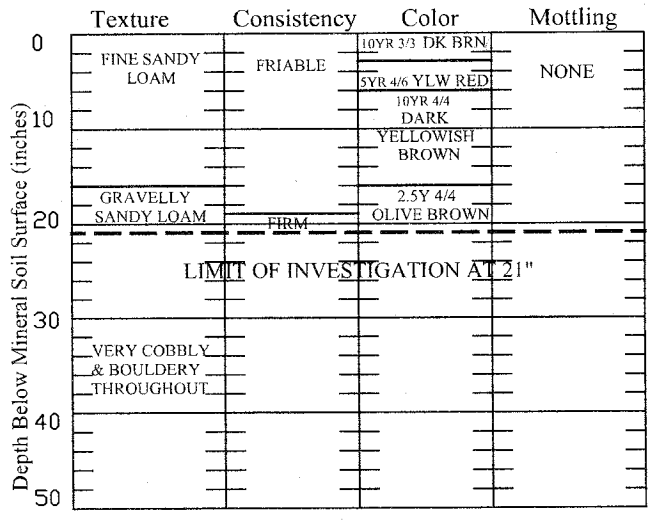
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 230 ☒ Test Pit (Excavator) ☐ Boring
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	17 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 231 ☒ Test Pit (Hand Dug) ☐ Boring
4 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	19 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Site Evaluator Signature	SE #	Date	
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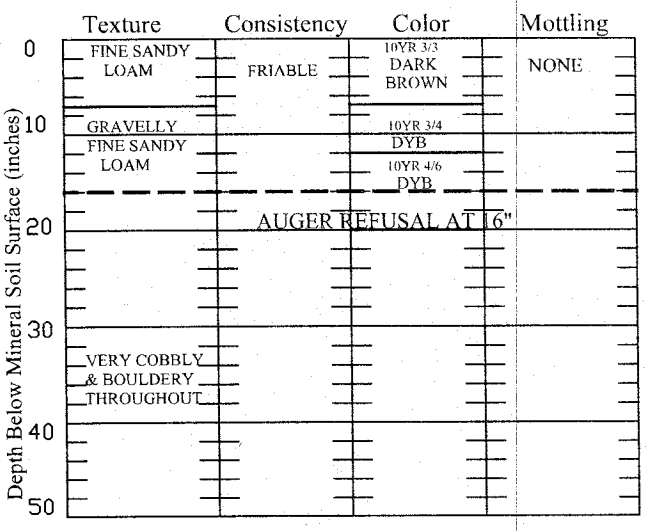
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

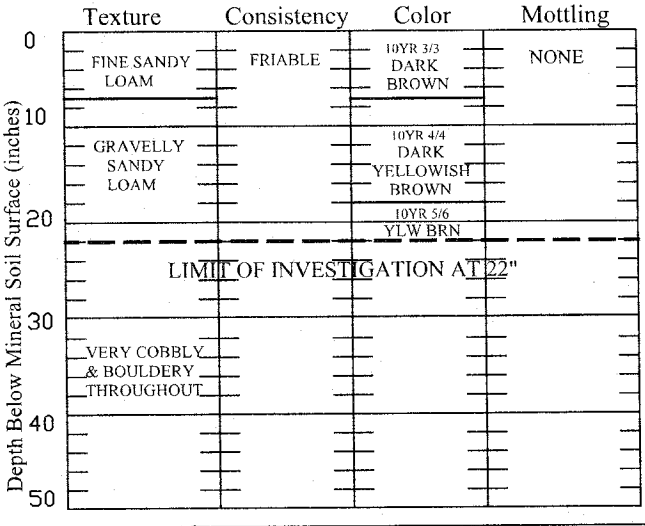
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 232 ☒ Test Pit (Hand Dug) ☐ Boring
5 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	16 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

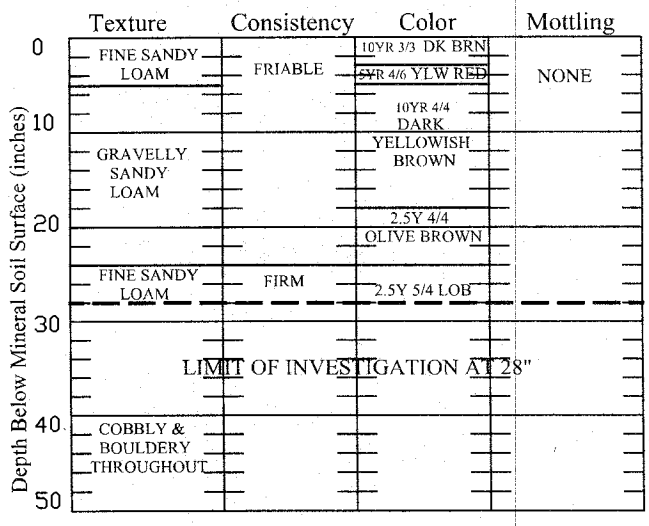
Observation Hole 233 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	22 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

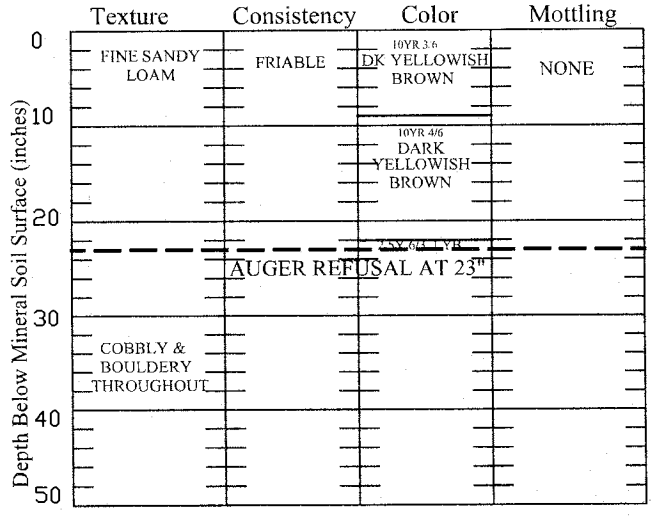
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 234 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 235 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile C Condition	%	23 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Site Evaluator Signature | #408 SE # | 12/27/24 Date

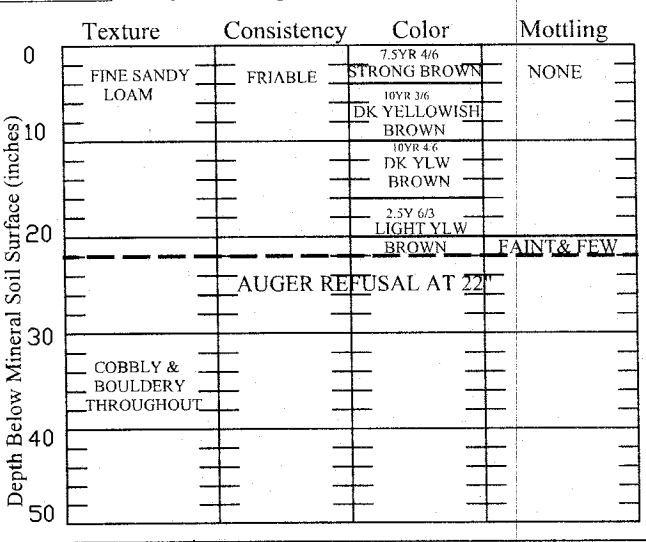
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

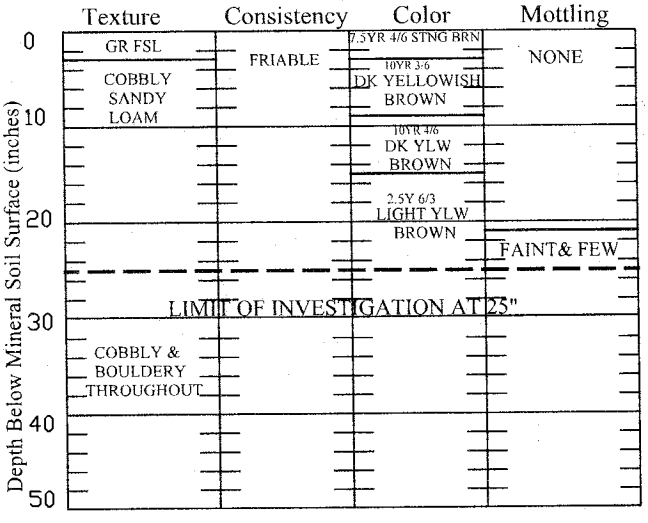
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 236 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	20 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

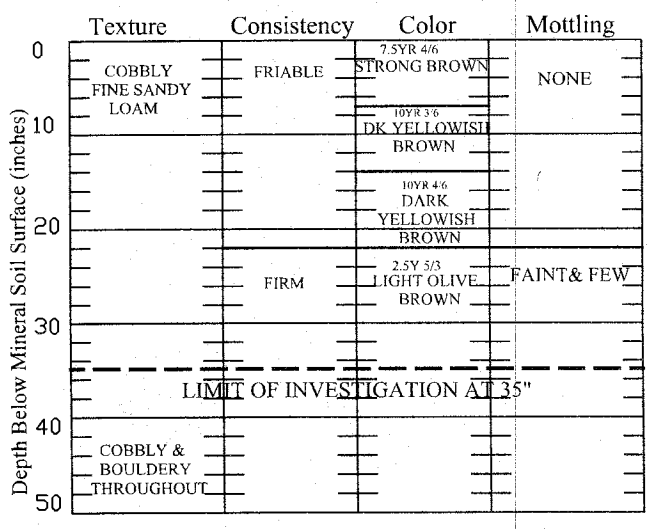
Observation Hole 237 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	21 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

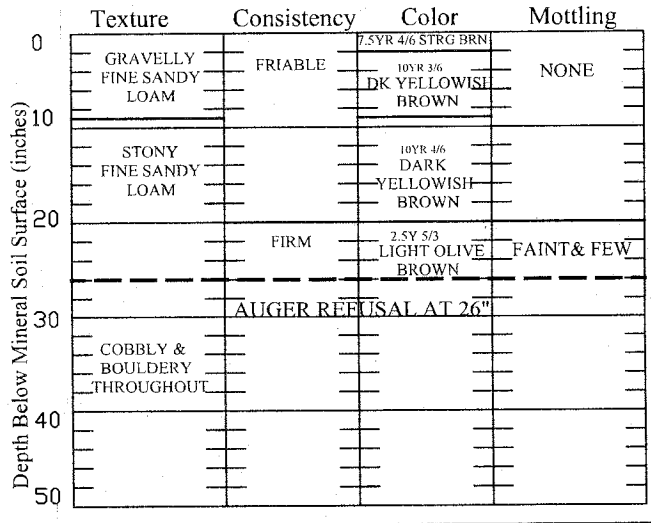
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 238 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	22 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 239 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	%	20 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature
#408 — SE #
1/5/24 — Date

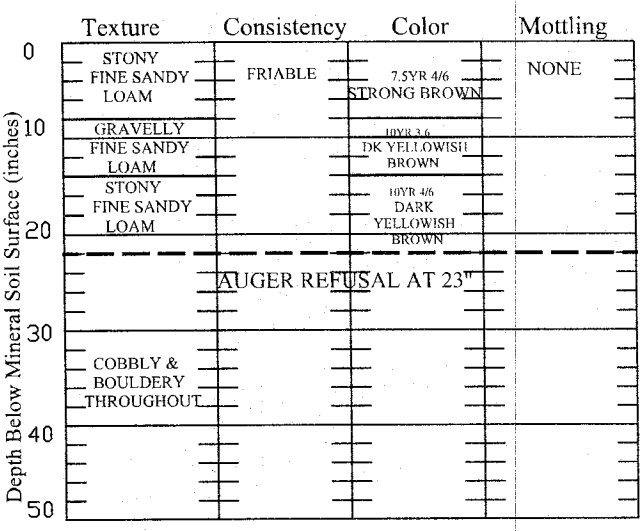
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

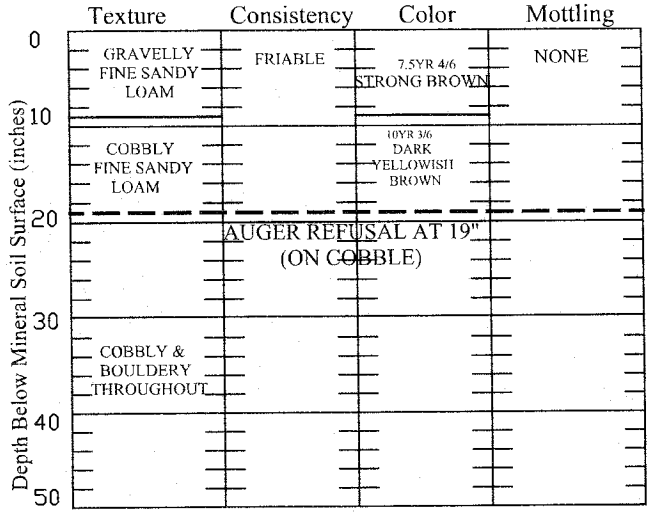
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 240 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	____ %	23 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

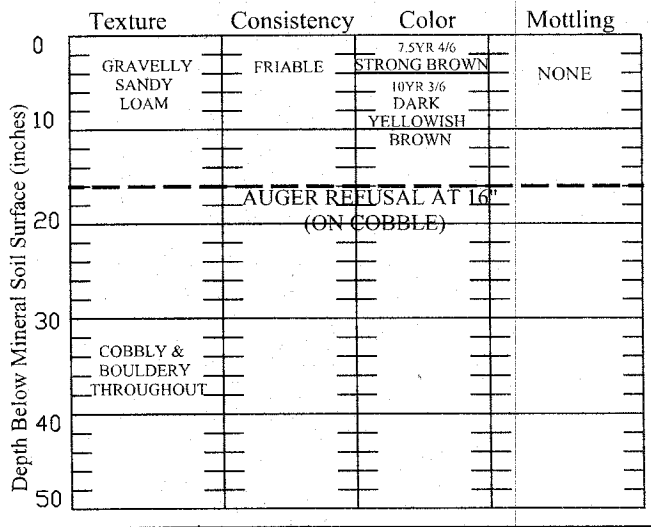
Observation Hole 241 ☒ Test Pit (Hand Dug) ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	____ %	19 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

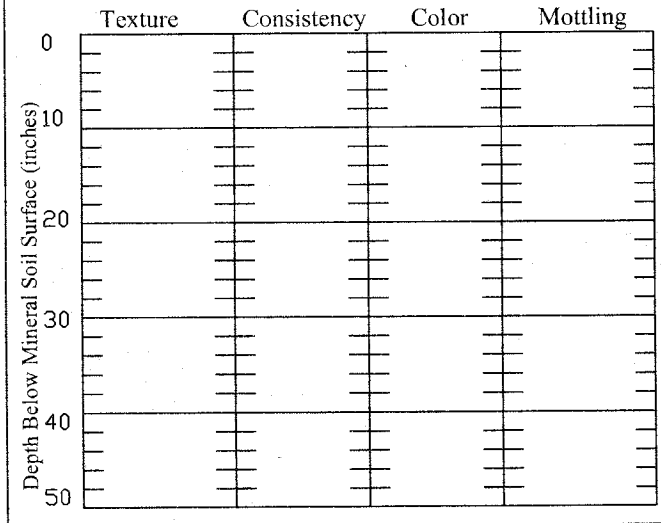
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 242 ☒ Test Pit (Hand Dug) ☐ Boring
0 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 C (Profile / Condition)	____ %	16 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring
_____ " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
_____ _____ (Profile / Condition)	____ %	____ "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley
Site Evaluator Signature

#408
SE #

1/5/24
Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

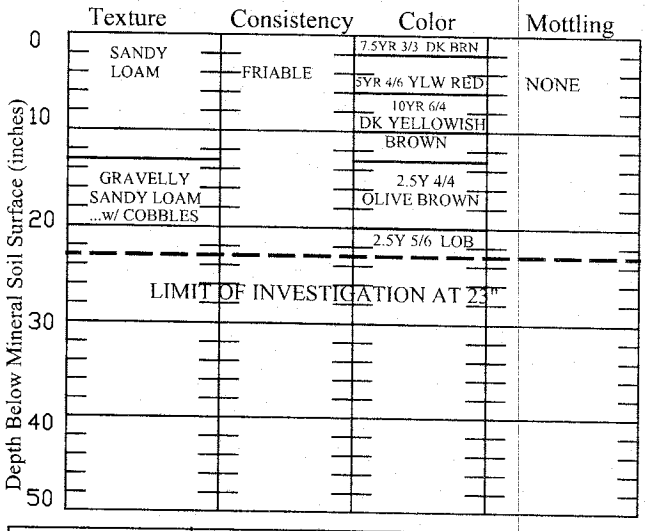
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-1A [x] Test Pit (Excavator) [ ] Boring

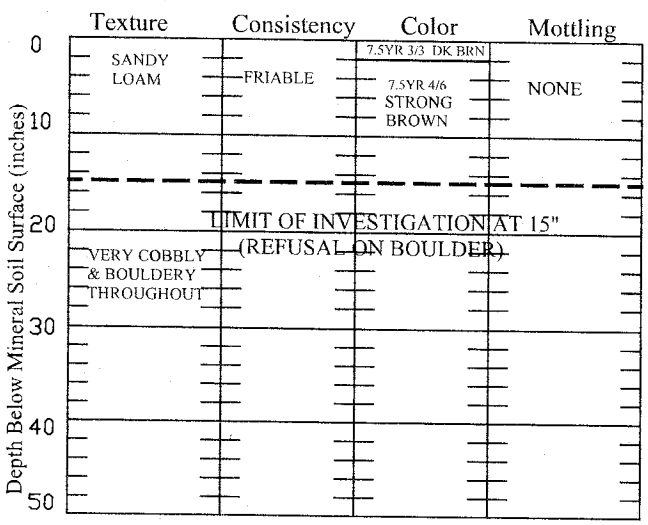
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	23 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole C-1B [x] Test Pit (Excavator) [ ] Boring

1 " Depth of Organic Horizon Above Mineral Soil

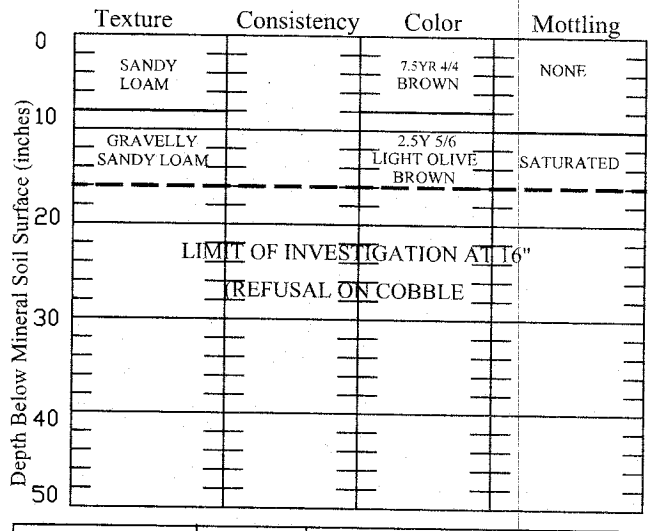


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-2A [x] Test Pit (Excavator) [ ] Boring

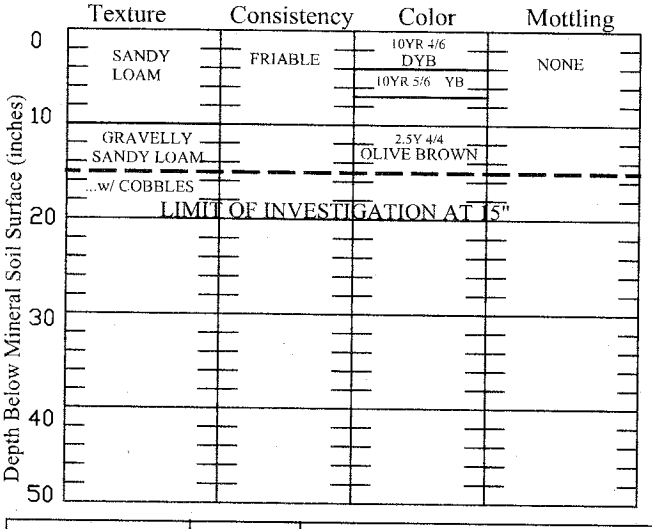
4 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / D Condition	____ %	10 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-2B [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

1/3/25 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

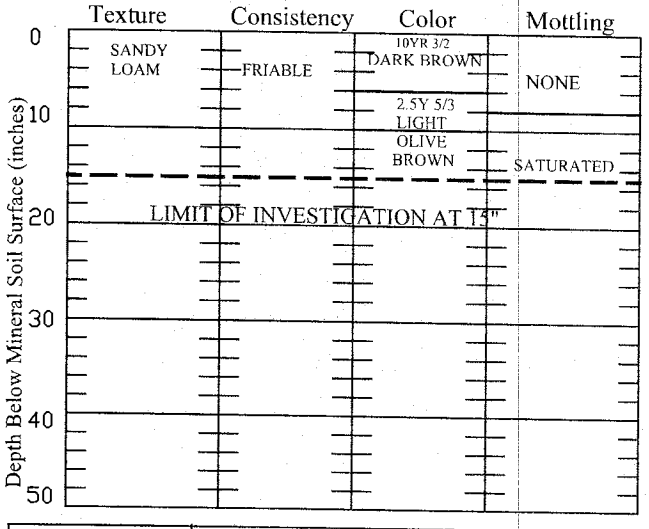
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-3A ☒ Test Pit (Hand Dug) ☐ Boring

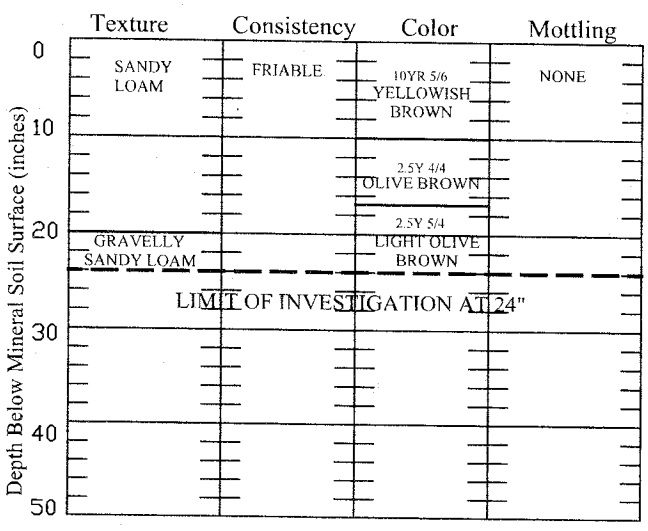
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / E Condition	%	8 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-3B ☒ Test Pit (Hand Dug) ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

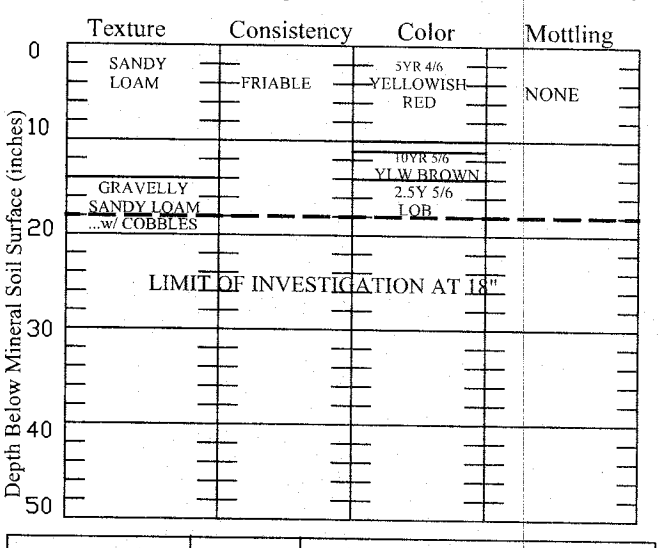


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	24 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-4A ☒ Test Pit (Excavator) ☐ Boring

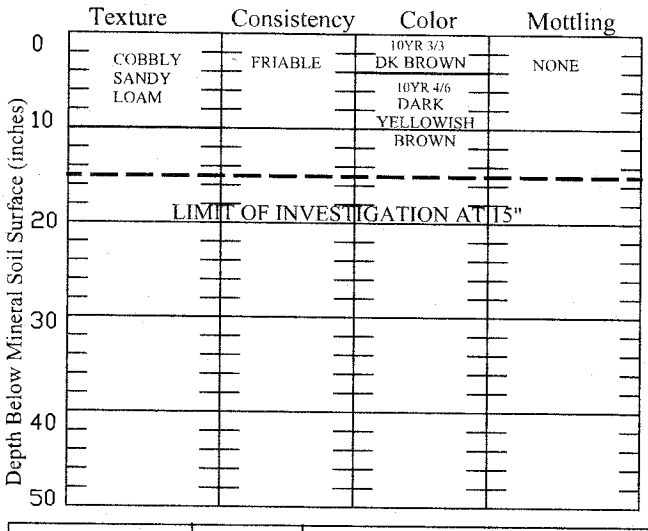
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-4B ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	15 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley
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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
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(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

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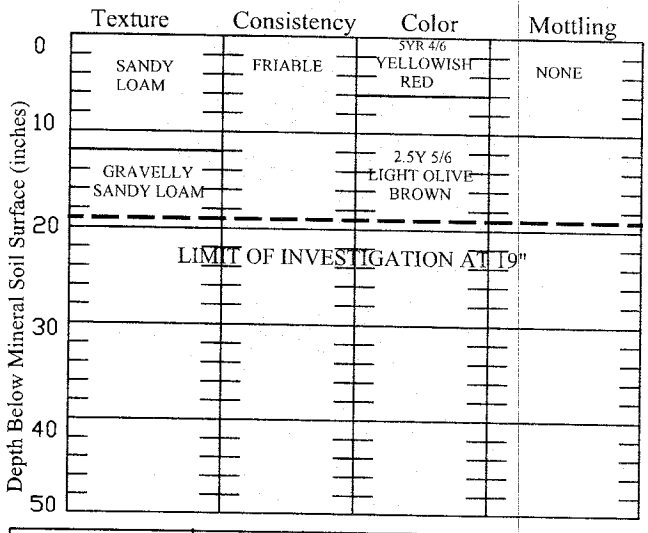
Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-5A [x] Test Pit (Excavator) [ ] Boring

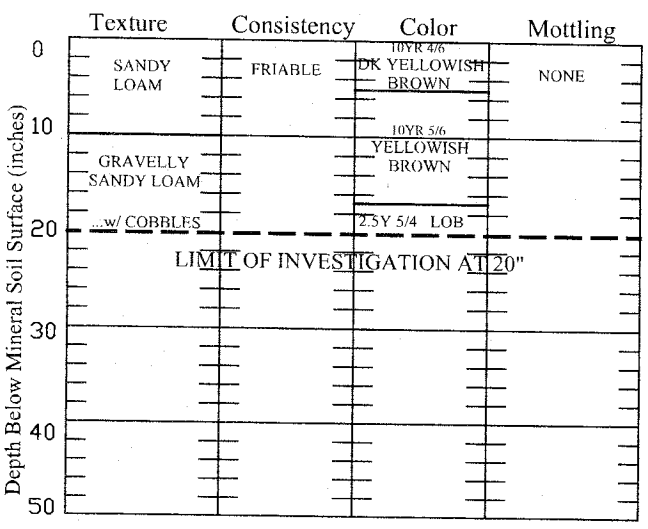
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	19 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole C-5B [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

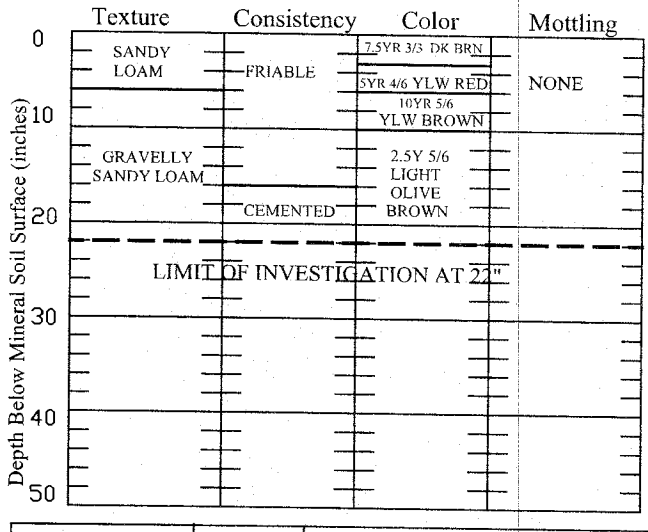


Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	20 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole C-6A [x] Test Pit (Excavator) [ ] Boring

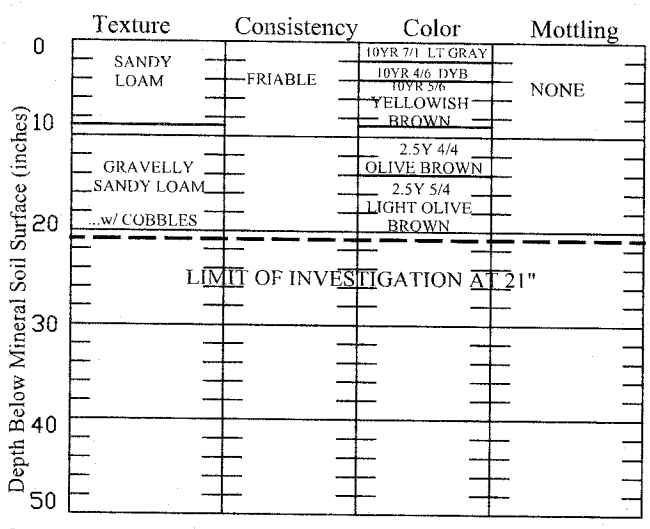
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole C-6B [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley
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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

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(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

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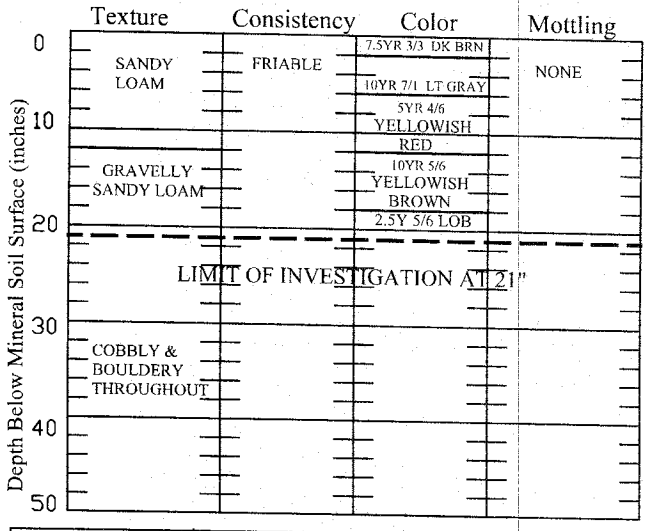
Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole P-1A ☒ Test Pit (Excavator) ☐ Boring

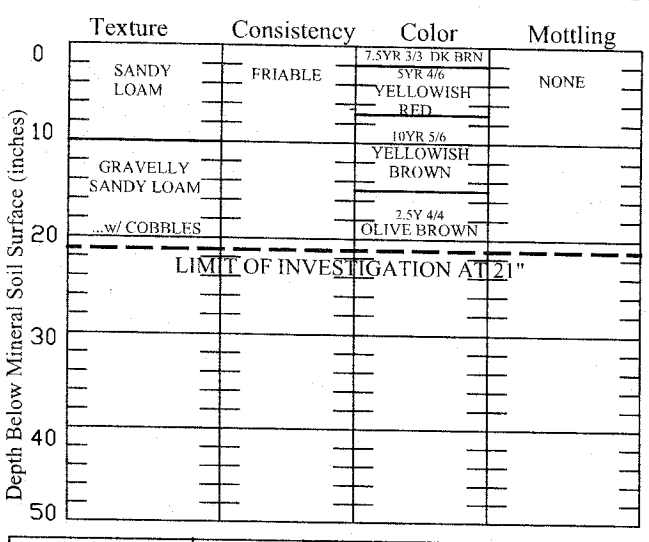
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole P-1B ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

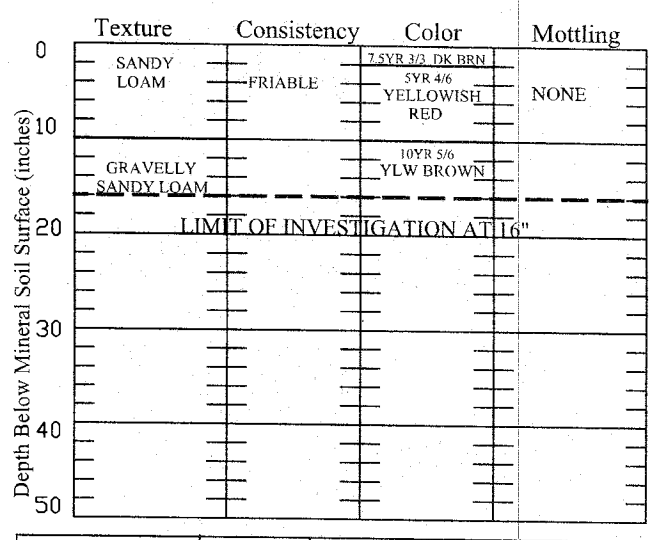


Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	21 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole P-2 ☒ Test Pit (Hand Dug) ☐ Boring

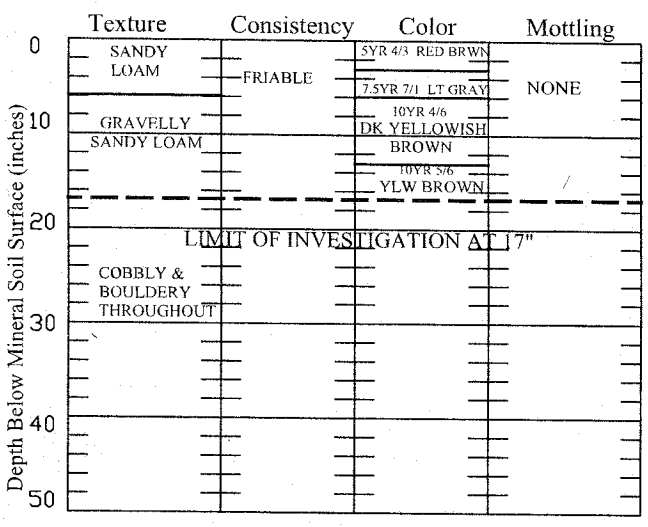
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	16 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole P-3 ☒ Test Pit (Hand Dug) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	____ %	17 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley
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(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

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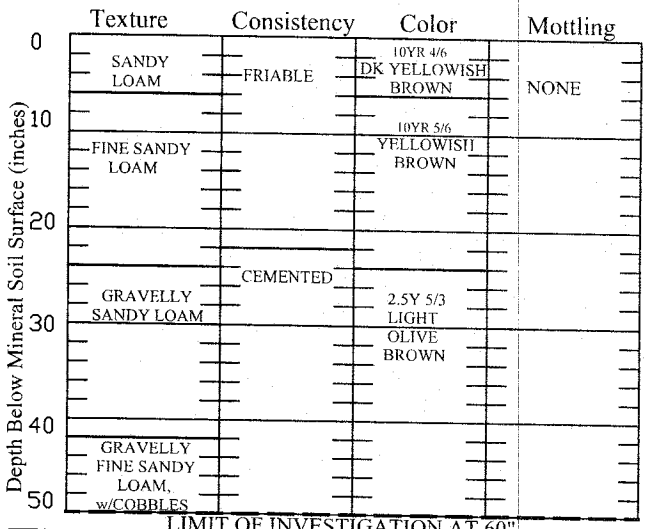
Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 301 [X] Test Pit (Excavator) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

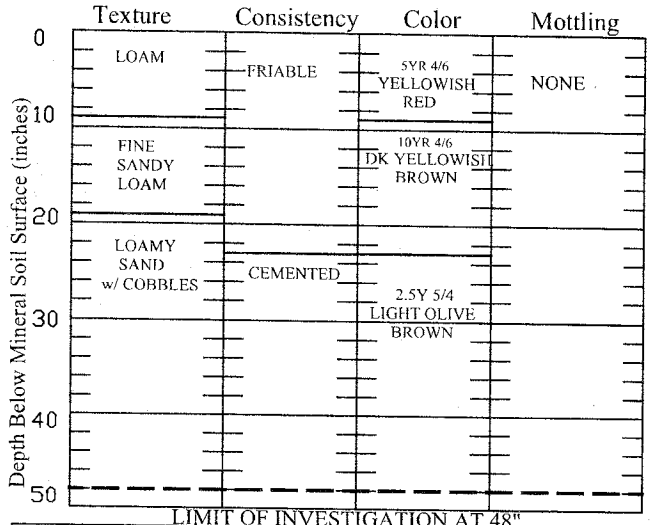


LIMIT OF INVESTIGATION AT 60"

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	22 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 302 [X] Test Pit (Excavator) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



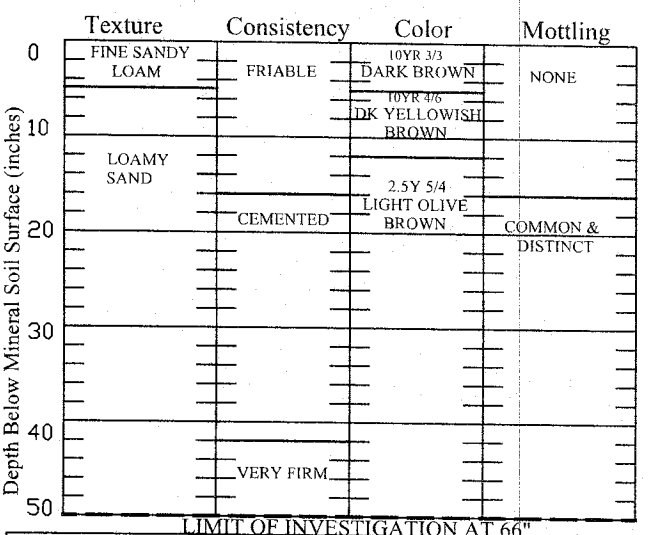
LIMIT OF INVESTIGATION AT 48"

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	23 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 303 [X] Test Pit (Excavator) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

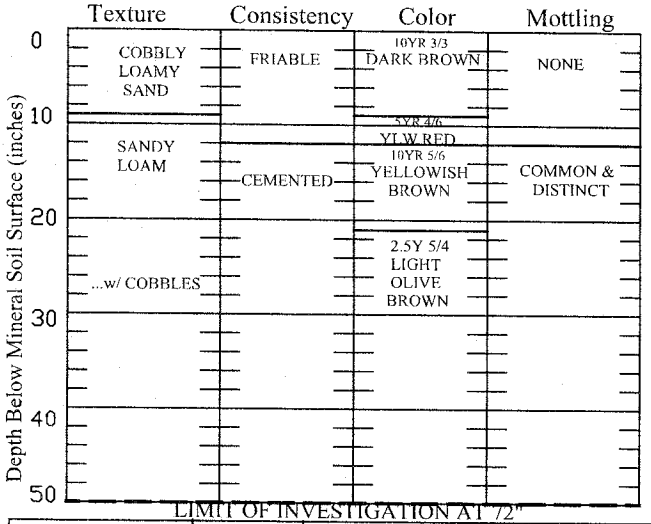


LIMIT OF INVESTIGATION AT 66"

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	16 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 304 [X] Test Pit (Excavator) [ ] Boring

4 " Depth of Organic Horizon Above Mineral Soil



LIMIT OF INVESTIGATION AT 72"

Soil Classification	Slope	Limiting Factor	
3 Profile / D Condition	%	12 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

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(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

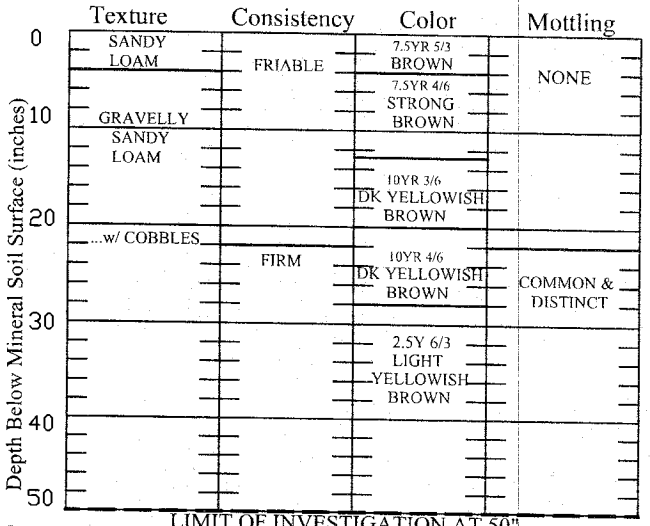
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 305 [x] Test Pit (Excavator) [ ] Boring

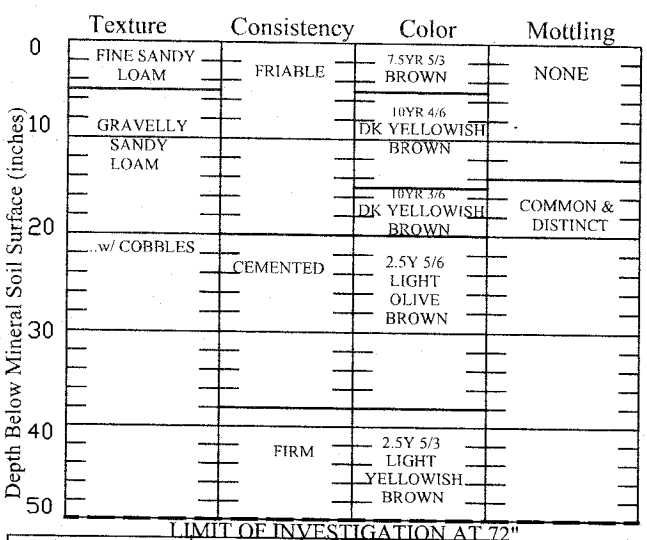
4 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	____ %	22 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Observation Hole 306 [x] Test Pit (Excavator) [ ] Boring

4 " Depth of Organic Horizon Above Mineral Soil

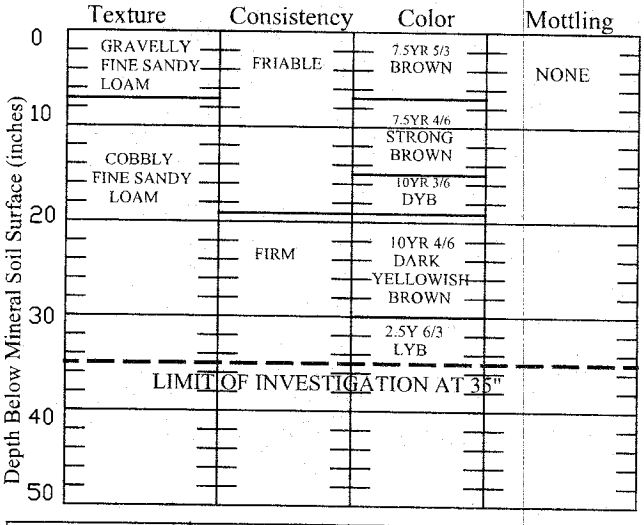


Soil Classification		Slope	Limiting Factor	
3	C	____ %	15 "	[x] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 307 [x] Test Pit (Excavator) [ ] Boring

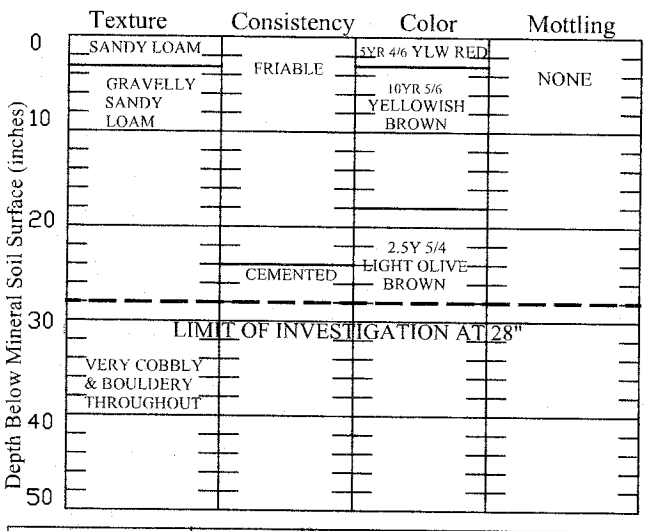
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	____ %	19 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Observation Hole 308 [x] Test Pit (Excavator) [ ] Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	____ %	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Sarah Ashley

Site Evaluator Signature

#408

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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

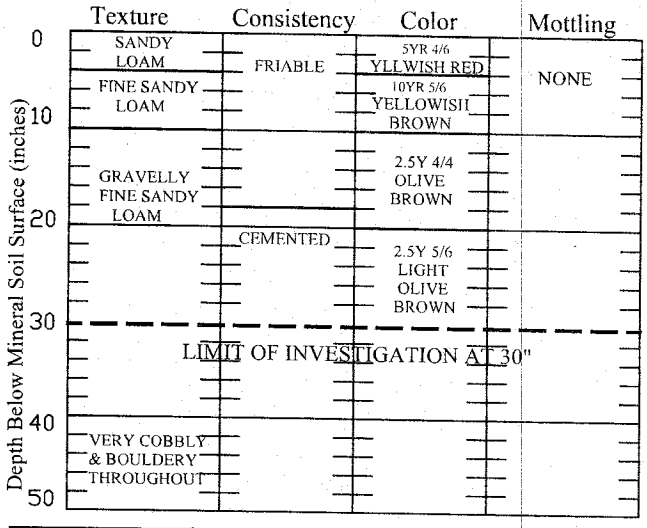
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 309 ☒ Test Pit (Excavator) ☐ Boring

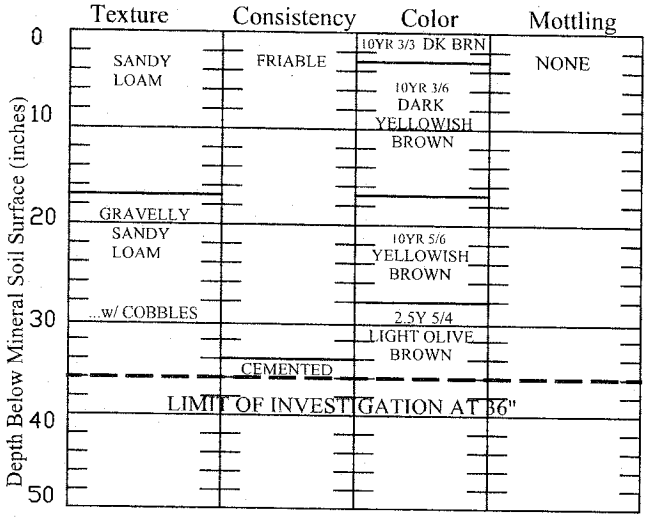
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 310 ☒ Test Pit (Excavator) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

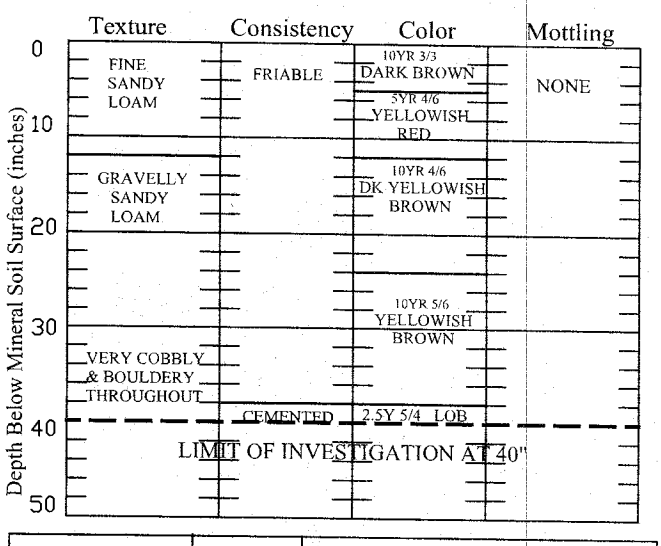


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	34 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 311 ☒ Test Pit (Excavator) ☐ Boring

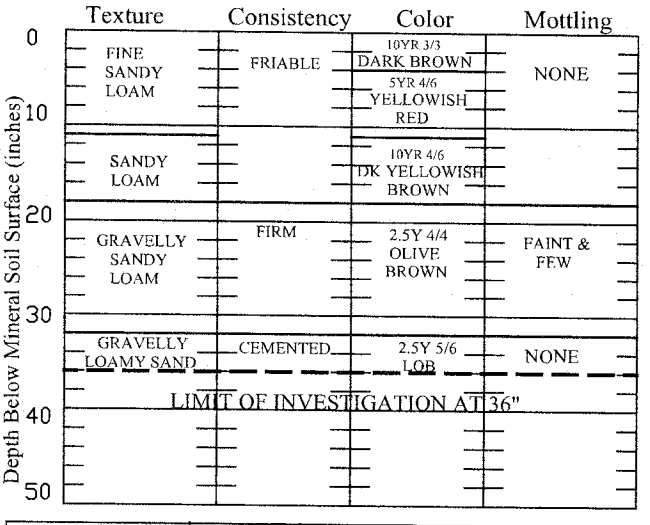
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	38 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 312 ☒ Test Pit (Excavator) ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

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(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

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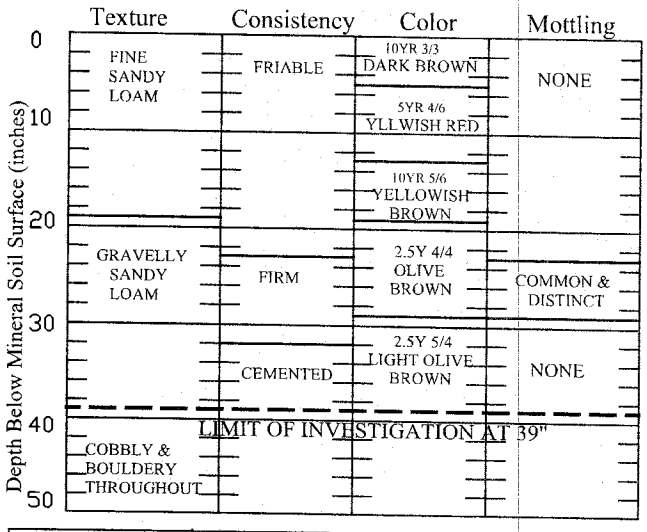
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 313 ☒ Test Pit (Excavator) ☐ Boring

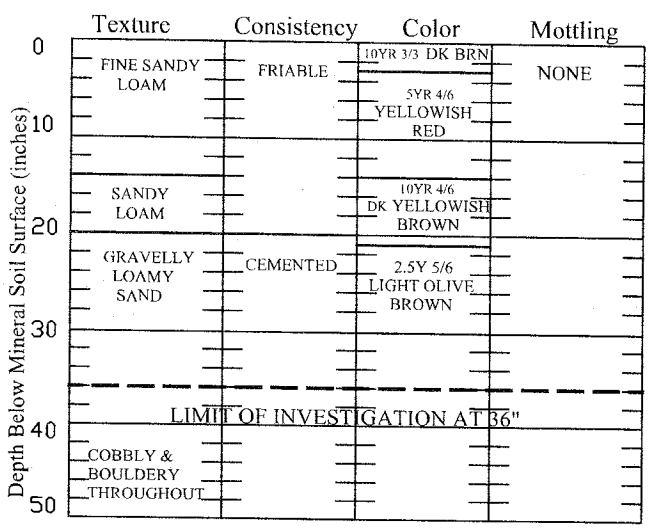
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	23 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 314 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil

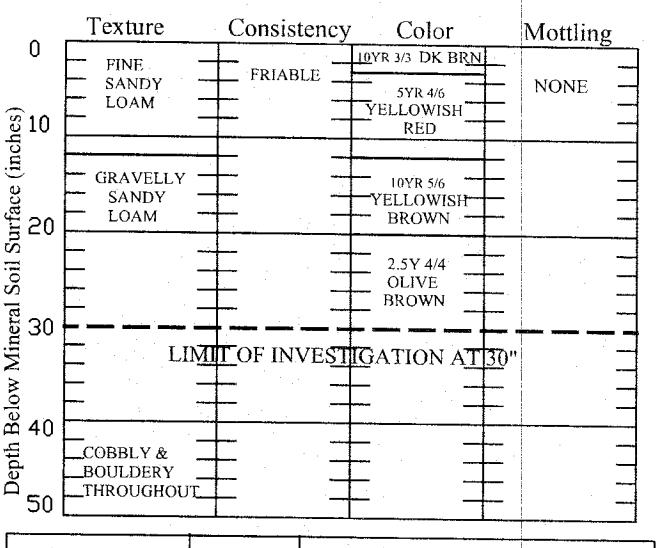


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 315 ☒ Test Pit (Excavator) ☐ Boring

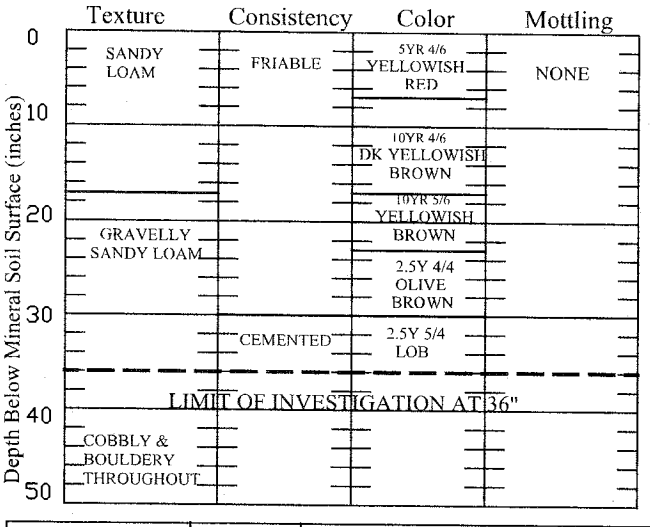
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	30 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 316 ☒ Test Pit (Excavator) ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	%	30 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

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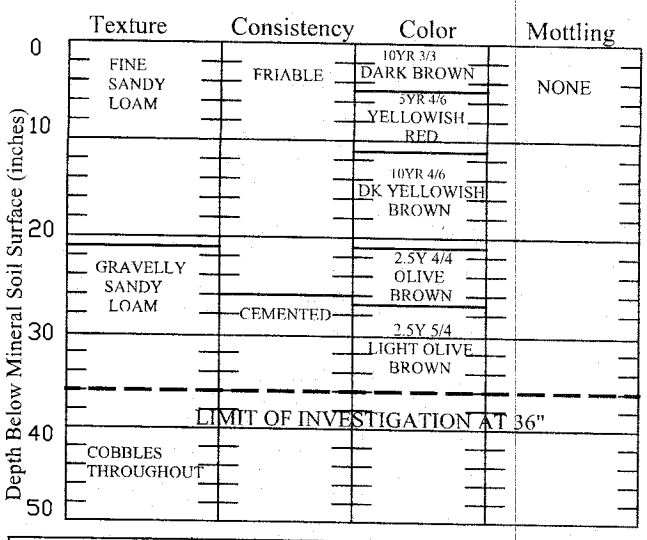
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 317 [x] Test Pit (Excavator) [ ] Boring

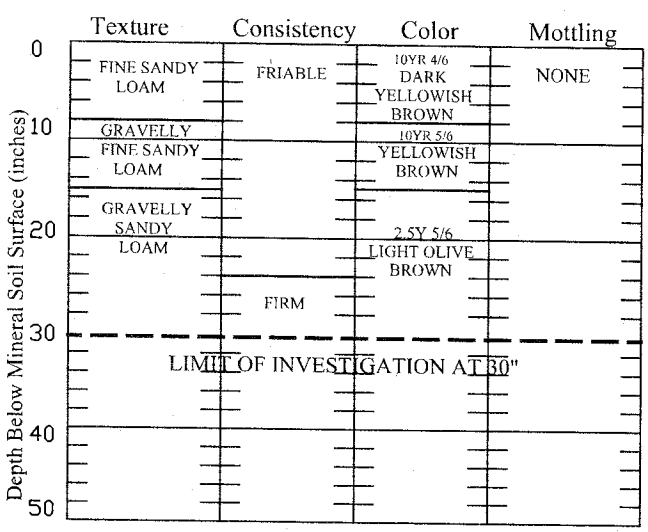
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	26 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 318 [x] Test Pit (Excavator) [ ] Boring

8 " Depth of Organic Horizon Above Mineral Soil

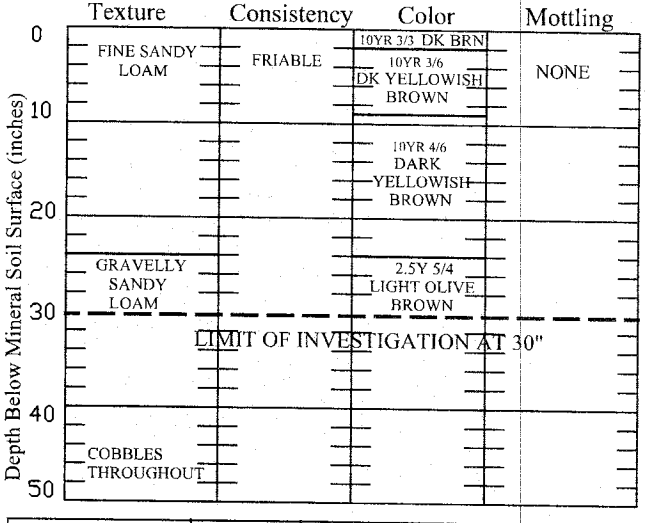


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 319 [x] Test Pit (Hand Dug) [ ] Boring

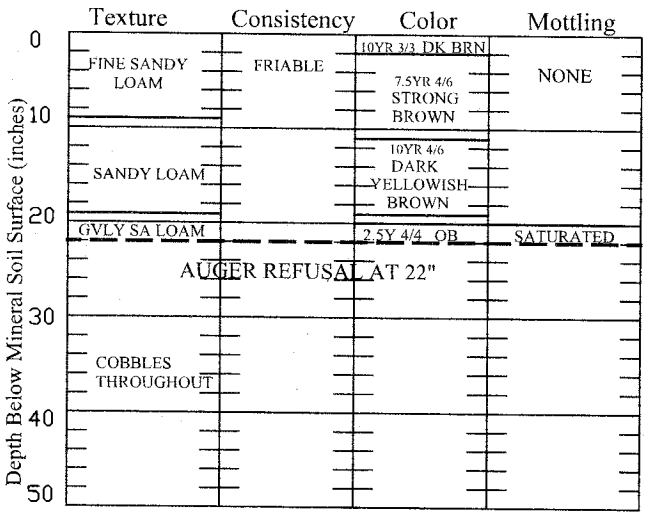
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	30 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Observation Hole 320 [x] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	22 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [x] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

12/27/24 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

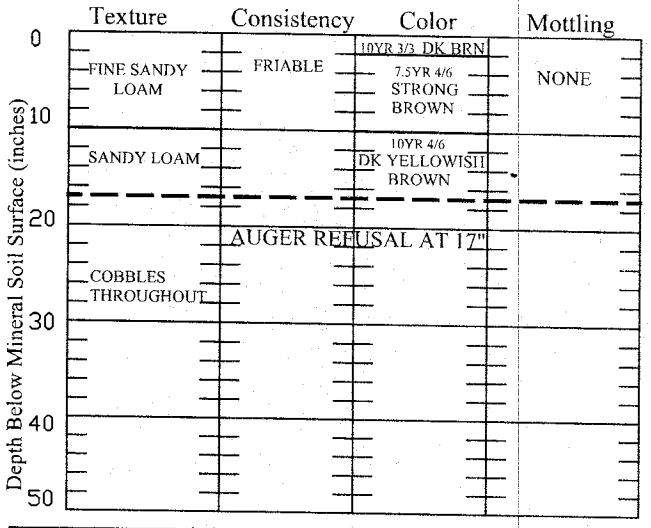
Street, Road, Subdivision: Black Cat Road

Owner's Name: Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 321 [X] Test Pit (Hand Dug) [ ] Boring

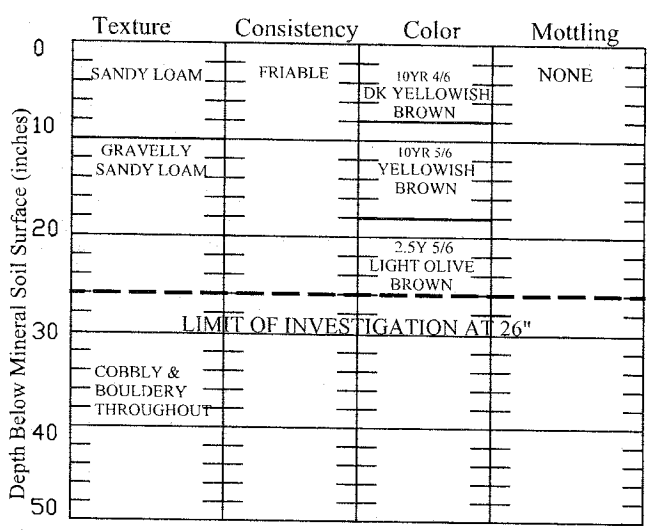
1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	17 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

Observation Hole 322 [X] Test Pit (Hand Dug) [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

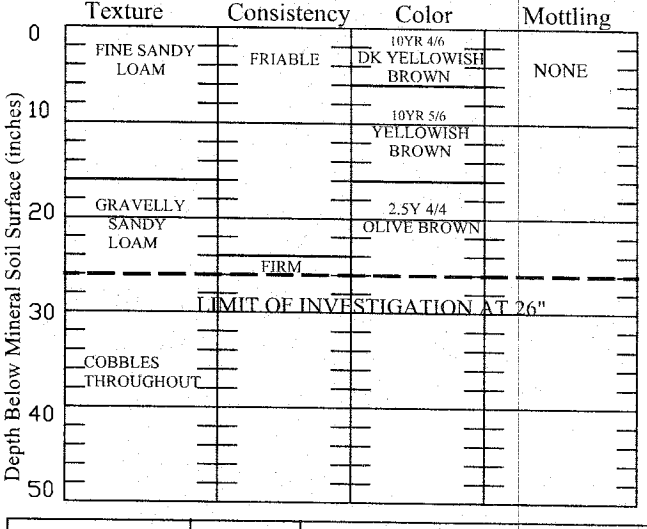


Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	26 "	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 323 [X] Test Pit (Hand Dug) [ ] Boring

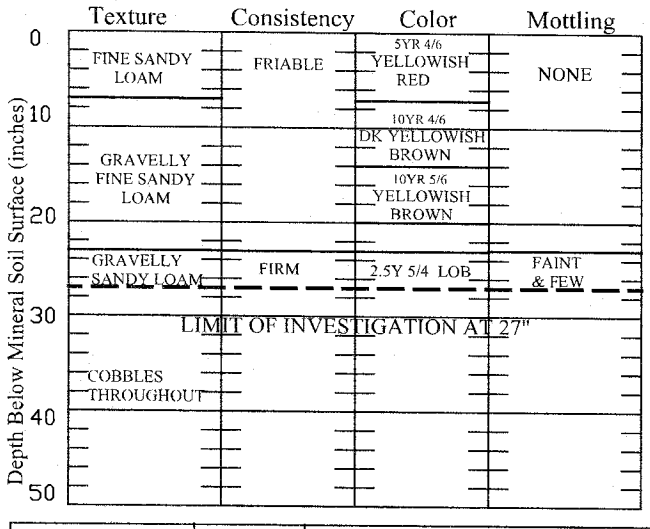
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	____ %	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole 324 [X] Test Pit (Hand Dug) [ ] Boring

1 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
____ Profile / ____ Condition	____ %	23 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

12/27/24 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	Black Cat Road	Hammond Ridge Development

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 325 ☒ Test Pit (Hand Dug) ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	FINE SANDY LOAM	FRIABLE	10YR 4/6 DK YELLOWISH BROWN	SATURATED
10–20	GRAVELLY FINE SANDY LOAM		10YR 5/6 YELLOWISH BROWN	
20–30	GRAVELLY SANDY LOAM	FIRM	2.5Y 5/6 LOB	COMMON & FAINT
	AUGER REFUSAL AT 26"			
30–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley

Site Evaluator Signature

#408

SE #

12/27/24

Date

PAGE ____ OF ____ FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: | Applicant Name: Hammond Ridge Development | Project Location (municipality): T1 R8 WELS ME

Exploration Symbol # TP 326 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

60 " Depth: ☒ of exploration, or ☐ to refusal (excav)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	gravSL	gran	vfr	
~~BS1~~	7.5YR 4/6	cobb SL			none
BS2					
BC	10YR 5/4	grav SL	abk/ platy	friable	few fine
C	2.5Y 5/3	cobb SL	massive	firm	c+d

LL = 60" / excavator

Soil Details: Soil Series/Phase Name: skerry grav SL

Limiting Factor: 25 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # TP327 ☒ Test Pit ☐ Boring ☐ Probe

3 " Organic horizon thickness Ground surface elev. ____

28 " Depth: ☐ of exploration, or ☒ to refusal (hand)

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 4/4	grav fsl	gran	vfr	
~~BS1~~	7.5YR 4/6				none
BS2	7.5YR 4/6				
BC	10YR 5/4		abk	fr	few fine

LL = 28" / refusal hand dug

Soil Details: Soil Series/Phase Name:

Limiting Factor: 18 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details: Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna E Szillery
Signature

Johanna E Szillery
Name Printed

1/2/2025
Date

LSS 494
SS License No.

STATE OF MAINE JOHANNA E. SZILLERY NO. SS494

affix professional seal

Sash Engineering, Inc.
1179 North Perley Brook Road
Fort Kent, ME 04743
(207) 231-4349; sarah@sashengineering.com

Summary of Findings

December 21, 2023
23-09-Milli

Hammond Ridge Development Corp.
Attention: Matthew Polstein
30 Twin Pines Road
P.O. Box 669
Millinocket, ME 04462

Subject: Test Pit Observations and Summary
Proposed Subdivision
Katahdin View Drive
T1 R8 WELS, Maine

Dear Matt:

Per your request, I have observed and logged 65 test pits for the Proposed Hammond Ridge Subdivision in T1 R8 Wels. The purpose of the test pits was to collect soils information to evaluate the viability of septic systems within each proposed lot. I understand the development could include 24 residential lots in a southerly subdivision, and 21 residential lots in a northerly subdivision. Additionally, I observed test pits in 9 potential commercial lots and 3 potential public spaces.

Test Pit locations were selected using property lines overlaid on Google Earth and a handheld GPS. I understand you have a .kmz file with each test pit location flagged. The test pits were hand excavated and observed on November 14, 15 and 17, 2023.

The soils were generally Sandy Loam to Gravelly Sandy Loam, with cobbles observed at most test pit locations. Within the excavations, the soils were typically friable with no evidence of mottling observed within the upper 15 inches. Each lot met the minimum soil requirements to locate a subsurface wastewater disposal system meeting the First Time System code requirements set forth in the State of Maine Chapter 241 Rules. The soils in Test Pits TP-C2A and TP-C3A were wet, and preferred disposal areas were located within the lots. A table of the soils findings is attached.

It has been a pleasure to be of assistance to you on this project. If you have any questions, or if I may be of further assistance, please do not hesitate to call.

Sincerely,

Sash Engineering

Sarah L. Ashley, P.E., L.S.E.
Owner/Principal Engineer

Test Pit	Predominant Soil Texture	Gravelly below…	Cobbles	Mottling	Consistence	Limit of Exploration	Meets Minimum Requirements for Septic
Southerly Subdivision							
TP-1	Sandy Loam	13"	Few	n/a	Friable	21"	Yes
TP-2	Sandy Loam	-	Some	n/a	Friable	19"	Yes
TP-3	Fine Sandy Loam	14"	Some	n/a	Friable	21"	Yes
TP-4	Sandy Loam	-	Some	n/a	Friable	19"	Yes
TP-5	Sandy Loam	18"	Some	n/a	Friable	22"	Yes
TP-6	Sandy Loam	9"	Some	n/a	Friable	18"	Yes
TP-7	Sandy Loam	9"	Very	n/a	Friable	16"	Yes
TP-8	Sandy Loam	15"	Some	n/a	Friable	20"	Yes
TP-9	Sandy Loam	-	Very	n/a	Friable	16"	Yes
TP-10	Sandy Loam	15"	Some	n/a	Friable	22"	Yes
TP-11	Sandy Loam	18"	Some	n/a	Friable	25"	Yes
TP-12	Sandy Loam	12"	Some	n/a	Friable	23"	Yes
TP-13	Sandy Loam	12"	Very	n/a	Friable	18"	Yes
TP-14	Sandy Loam	12"	Very	n/a	Friable	16"	Yes
TP-15	Sandy Loam	17"	Some	n/a	Friable	24"	Yes
TP-16	Sandy Loam	12"	Very	n/a	Friable	20"	Yes
TP-17	Sandy Loam	18"	Some	n/a	Friable	27"	Yes
TP-18	Sandy Loam	18"	Some	n/a	Friable	21"	Yes
TP-19	Sandy Loam	16"	Very	n/a	Friable	24"	Yes
TP-20	Sandy Loam	-	Some	n/a	Friable	18"	Yes
TP-21	Sandy Loam	22"	Few	n/a	Friable	22"	Yes
TP-22	Fine Sandy Loam	18"	Some	n/a	Friable	22"	Yes
TP-23	Loamy Sand	17"	Very	n/a	Friable	23"	Yes
TP-24	Loamy Sand	10"	Some	n/a	Friable	24"	Yes

Test Pit	Predominant Soil Texture	Gravelly below…	Cobbles	Mottling	Consistence	Limit of Exploration	Meets Minimum Requirements for Septic
Northerly Subdivision							
TP-25	Sandy Loam	15"	Very	n/a	Friable	23"	Yes
TP-26	Sandy Loam	15"	Very	n/a	Friable	17"	Yes
TP-27	Sandy Loam	11"	Some	n/a	Friable	15"	Yes
TP-28	Sandy Loam	18"	Some	n/a	Friable	22"	Yes
TP-29	Sandy Loam	14"	Some	n/a	Friable	24"	Yes
TP-30	Sandy Loam	11"	Very	n/a	Friable	15"	Yes
TP-31	Sandy Loam	12"	Some	n/a	Friable	20"	Yes
TP-32	Sandy Loam	13"	Some	n/a	Friable	19"	Yes
TP-33	Sandy Loam	8"	Very	n/a	Friable	15"	Yes
TP-34	Sandy Loam	12"	Very	n/a	Friable	21"	Yes
TP-35	Sandy Loam	1"	Very	n/a	Friable	17"	Yes
TP-36	Sandy Loam	10"	Very	n/a	Friable	15"	Yes
TP-37	Sandy Loam	9"	Some	n/a	Friable	18"	Yes
TP-38	Sandy Loam	10"	Some	n/a	Friable	16"	Yes
TP-39	Sandy Loam	14"	Some	n/a	Friable	21"	Yes
TP-40	Sandy Loam	13"	Very	n/a	Friable	17"	Yes
TP-41	Fine Sandy Loam	-	Some	n/a	Friable	24"	Yes
TP-42	Sandy Loam	11"	Some	n/a	Friable	20"	Yes
TP-43	Sandy Loam	11"	Some	n/a	Friable	22"	Yes
TP-44	Sandy Loam	9"	Some	n/a	Friable	25"	Yes
TP-45	Sandy Loam	10"	Very	n/a	Friable	15"	Yes

Test Pit	Predominant Soil Texture	Gravelly below…	Cobbles	Mottling	Consistence	Limit of Exploration	Meets Minimum Requirements for Septic
Commercial Lots							
TP-C1A	Sandy Loam	6"	Some	n/a	Friable	23"	Yes
TP-C1B	Sandy Loam	2"	Very	n/a	Friable	15"	Yes
TP-C2A	Sandy Loam	8"	Some	wet	Friable	16"	Yes
TP-C2B	Sandy Loam	10"	Some	n/a	Friable	16"	Yes
TP-C3A	Sandy Loam	-	-	wet	Friable	15"	Yes, Marginal
TP-C3B	Sandy Loam	20"	Some	n/a	Friable	24"	Yes
TP-C4A	Sandy Loam	14"	Very	n/a	Friable	18"	Yes
TP-C4B	Sandy Loam	3"	Very	n/a	Friable	20"	Yes
TP-C5A	Sandy Loam	12"	Few	n/a	Friable	19"	Yes
TP-C5B	Sandy Loam	10"	Some	n/a	Friable	21"	Yes
TP-C6A	Loamy Sand	16"	Some	n/a	Friable	22"	Yes
TP-C6B	Sandy Loam	9"	Some	n/a	Friable	21"	Yes
Public Space							
TP-P1A	Sandy Loam	6"	Some	n/a	Friable	21"	Yes
TP-P1B	Sandy Loam	7"	Some	n/a	Friable	21"	Yes
TP-P2A	Sandy Loam	10"	Some	n/a	Friable	16"	Yes
TP-P3A	Sandy Loam	4"	Some	n/a	Friable	17"	Yes

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept.Health & Human Services
Div of Environmental Health , 11 SHS
(207) 287-5672 Fax: (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	T1 R8
Street or Road	200 Katahdin View Drive
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): Hammond Ridge Development Corp — ■ Owner ■ Applicant

Mailing Address of Owner/Applicant	PO Box 669
	Millinocket, ME 04462
Daytime Tel. #	207-723-3559

OWNER OR APPLICANT STATEMENT

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

Signature of Owner or Applicant _____ Date _____

>> CAUTION: LPI APPROVAL REQUIRED <<

Town/City _____ Permit # _____

Date Permit Issued ___/___/___ Fee: $_____ Double Fee Charged [ ]

Local Plumbing Inspector Signature _____ L.P.I. # _____

Owner Town State

The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

Local Plumbing Inspector Signature _____ (2nd) date approved

PERMIT INFORMATION

TYPE OF APPLICATION

■ 1. First Time System
☐ 2. Replacement System
Type replaced: _____
Year installed: _____
☐ 3. Expanded System
☐ a. <25% Expansion
☐ b. >25% Expansion
☐ 4. Experimental System
☐ 5. Seasonal Conversion

THIS APPLICATION REQUIRES

■ 1. No Rule Variance
☐ 2. First Time System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 3. Replacement System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 4. Minimum Lot Size Variance
☐ 5. Seasonal Conversion Permit

DISPOSAL SYSTEM COMPONENTS

■ 1. Complete Non-engineered System
☐ 2. Primitive System (graywater & alt. toilet)
☐ 3. Alternative Toilet, specify: _____
☐ 4. Non-engineered Treatment Tank (only)
☐ 5. Holding Tank, _____ gallons
☐ 6. Non-engineered Disposal Field (only)
☐ 7. Separated Laundry System
☐ 8. Complete Engineered System (2000 gpd or more)
☐ 9. Engineered Treatment Tank (only)
☐ 10. Engineered Disposal Field (only)
☐ 11. Pre-treatment, specify: _____
☐ 12. Miscellaneous Components

SIZE OF PROPERTY

+/- ☐ SQ. FT. ■ ACRES

SHORELAND ZONING

☐ Yes ■ No

DISPOSAL SYSTEM TO SERVE

☐ 1. Single Family Dwelling Unit, No. of Bedrooms: ____
☐ 2. Multiple Family Dwelling, No. of Units: ____
■ 3. Other: Brewery (specify)
Current Use ☐ Seasonal ☐ Year Round ■ Undeveloped

(Proposed) TYPE OF WATER SUPPLY

■ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private
☐ 4. Public ☐ 5. Other

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

■ 1. Concrete
■ a. Regular
☐ b. Low Profile
☐ 2. Plastic
☐ 3. Other: _____
CAPACITY: 2@1500 GAL.

DISPOSAL FIELD TYPE & SIZE

■ 1. Stone Bed ☐ 2. Stone Trench
☐ 3. Proprietary Device
☐ a. cluster array ☐ c. Linear
☐ b. regular load ☐ d. H-20 load
☐ 4. Other: _____
SIZE: 1800 ■ sq. ft. ☐ lin. ft.

GARBAGE DISPOSAL UNIT

■ 1. No ☐ 2. Yes ☐ 3. Maybe
If Yes or Maybe, specify one below:
☐ a. multi-compartment tank
☐ b. ___ tanks in series
☐ c. increase in tank capacity
☐ d. Filter on Tank Outlet

DESIGN FLOW

372 gallons per day
BASED ON:
☐ 1. Table 4A (dwelling unit(s))
■ 2. Table 4C(other facilities)
SHOW CALCULATIONS for other facilites
See Attached
☐ 3. Section 4G (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
3 / C
at Observation Hole # TP-1
Depth 24 "
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

☐ 1. Medium---2.6 sq. ft. / gpd
■ 2. Medium---Large 3.3 sq. ft / gpd
☐ 3. Large---4.1 sq. ft. / gpd
☐ 4. Extra Large---5.0 sq. ft. / gpd

EFFLUENT/EJECTOR PUMP

■ Not Required (Pending proper tank elevation)
☐ May Be Required
☐ Required
Specify only for engineered systems:
DOSE: _____ gallons

LATITUDE AND LONGITUDE

at center of disposal area
Lat. 45 d 42 m 59.8 s
Lon. -68 d 49 m 3.4 s
if g.p.s, state margin of error: 30' +/-

SITE EVALUATOR STATEMENT

I certify that on 8/14/21 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Site Evaluator Signature _____ #408 SE # 9/27/21 Date

Sarah Ashley
Site Evaluator Name Printed

207-231-4349
Telephone Number

sarah@sashengineering.com
E-mail Address

Note : Changes to or deviations from the design should be confirmed with the Site Evaluator.

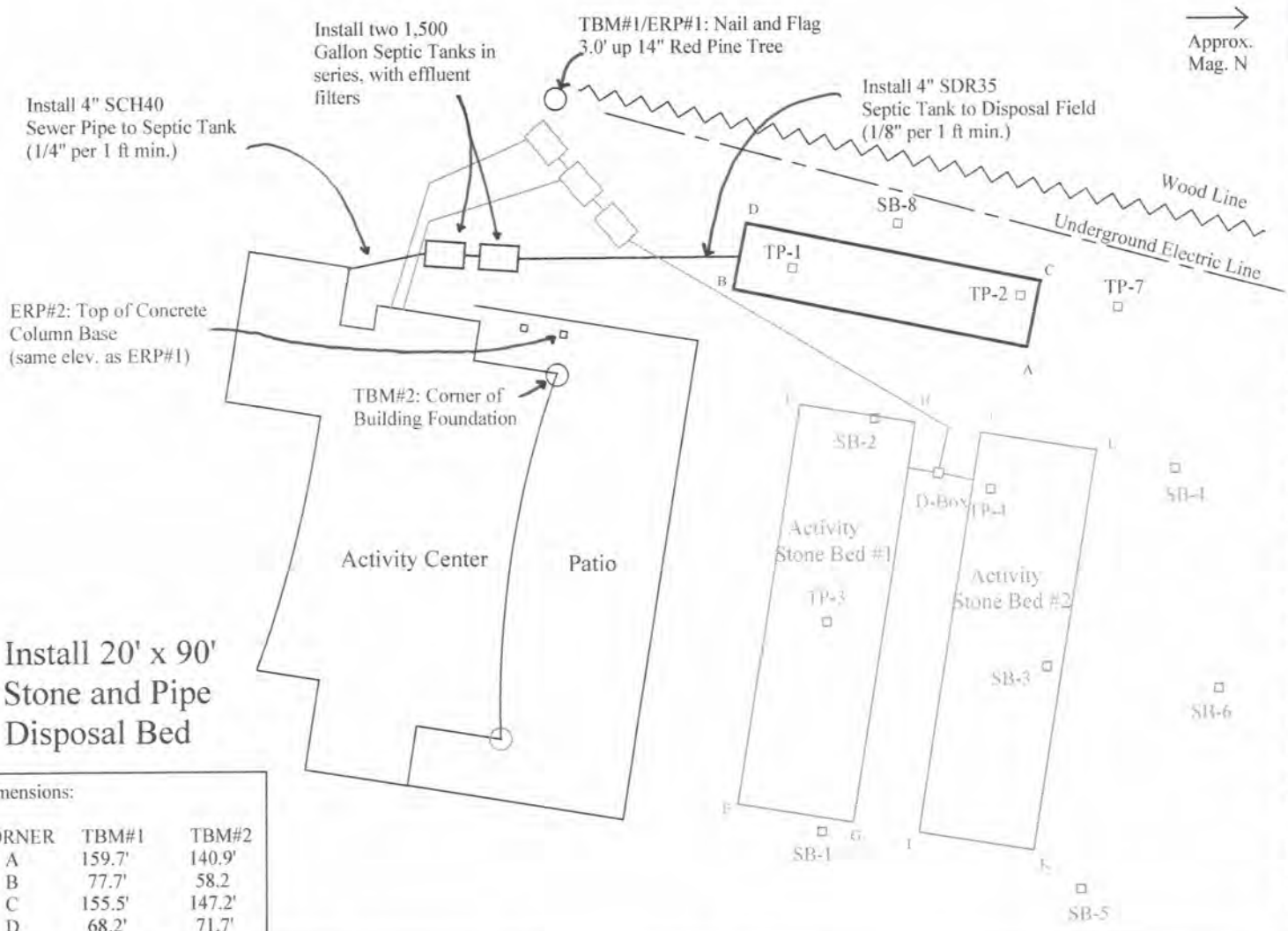
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	200 Katahdin View Drive	Hammond Ridge Development Corp.

SITE PLAN

Scale 1" = 50 ft. or as shown



Dimensions:

CORNER	TBM#1	TBM#2
A	159.7'	140.9'
B	77.7'	58.2
C	155.5'	147.2'
D	68.2'	71.7'

SITE LOCATION PLAN

Notes:

1- Review and comply with attached General Installation Notes, and Septic Soils Information.

2- Septic Tanks may be field located in accordance with required setbacks.

3- Septic Tanks to be outfitted with effluent filters. The first tank must have a Zabel A100, the second tank must have a Zabel A300.

4 - If gravity drainage is not achievable, install a Lift Station after the second tank, and a 2" Pressure Line to the D-Box at the Field.

5- Disposal field to be grass covered with no woody vegetation within 15'.

Site Evaluator Signature	SE #	Date
Sarah Ashley	#408	9/27/21

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

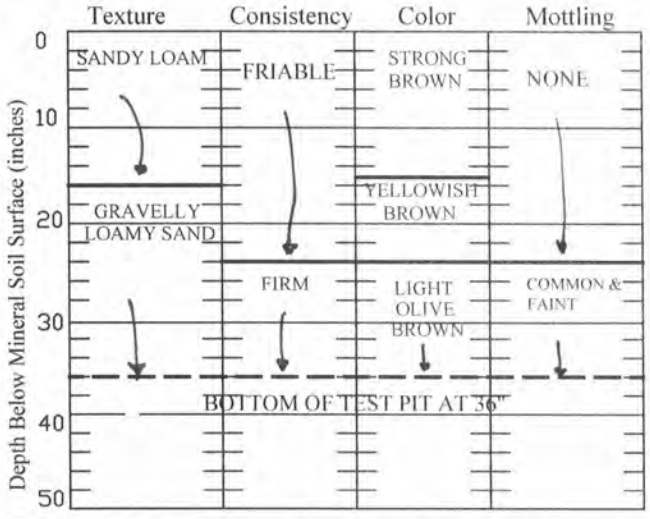
Street, Road, Subdivision: 200 Katahdin View Drive

Owner's Name: Hammond Ridge Development Corp.

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown on Page 2)

Observation Hole TP-1 (elev. -67") ■ Test Pit ☐ Boring

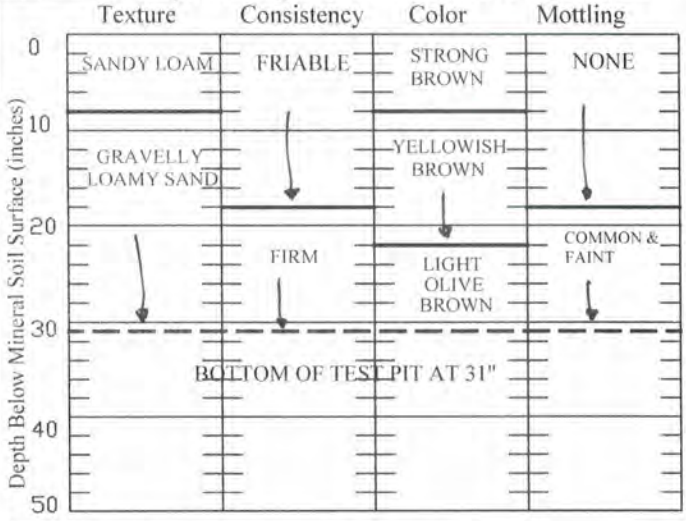
8 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	2 %	24 "	■ Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Observation Hole TP-2 (elev. -84") ■ Test Pit ☐ Boring

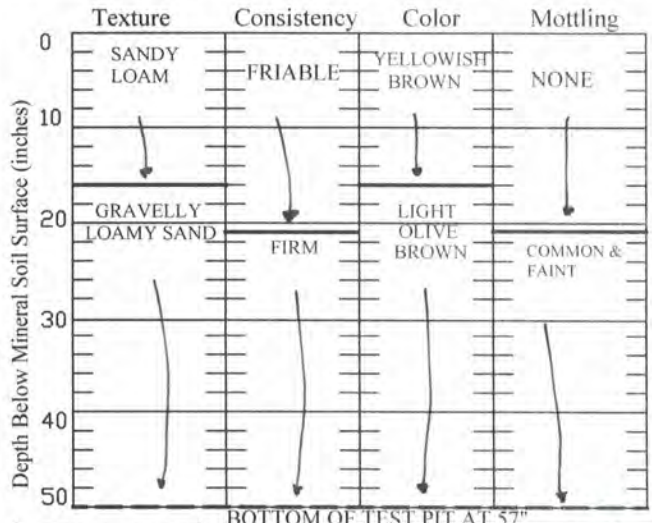
5 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	4 %	18 "	■ Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Observation Hole SB-7 (elev. -88") ■ Test Pit ☐ Boring

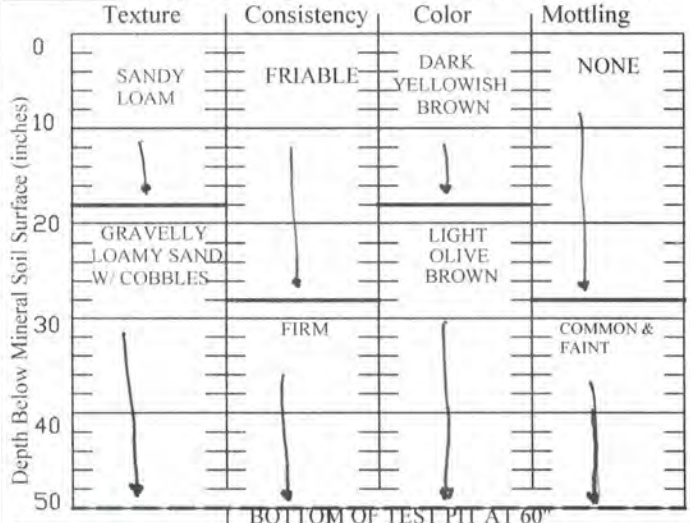
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	%	21 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Observation Hole SB-8 (elev. -60") ☒ Test Pit ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification		Slope	Limiting Factor	
3	C	%	28 "	■ Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth
Profile	Condition			

Sarah Ashley — Site Evaluator Signature

#408 — SE #

9/27/21 — Date

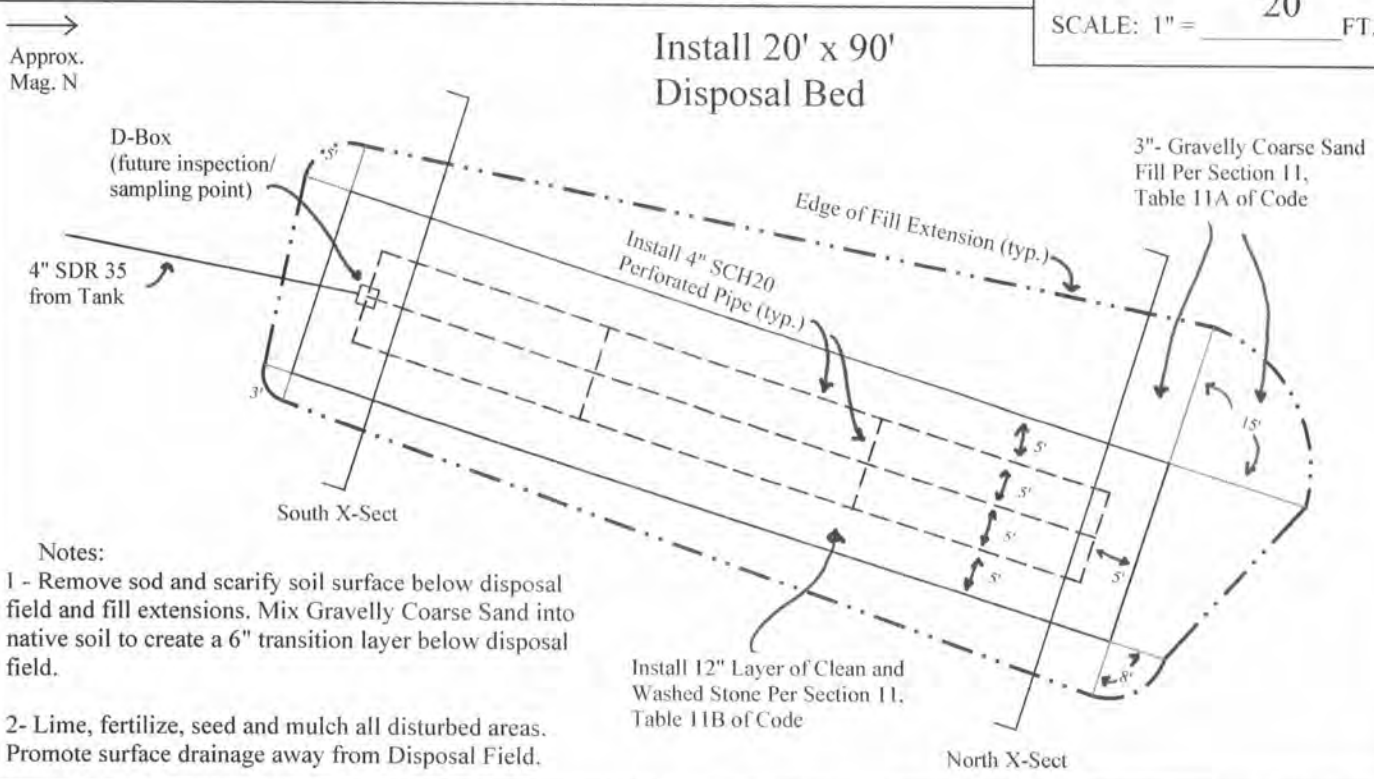
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	200 Katahdin View Drive	Hammond Ridge Development Corp.

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE: 1" = 20 FT.



Notes:
1 - Remove sod and scarify soil surface below disposal field and fill extensions. Mix Gravelly Coarse Sand into native soil to create a 6" transition layer below disposal field.

2- Lime, fertilize, seed and mulch all disturbed areas. Promote surface drainage away from Disposal Field.

FILL REQUIREMENTS	N	S
Depth of Fill (Upslope)	19"	2"
Depth of Fill (Downslope)	29"	6"

CONSTRUCTION ELEVATIONS	
Finished Grade Elevation	-55"
Top of Distribution Pipe	-68"
Bottom of Disposal Area	-79"

ELEVATION REFERENCE POINT
Location & Description: TBM#1: Nail and Flag 36" up 14" Red Pine Tree
Reference Elevation: 0"

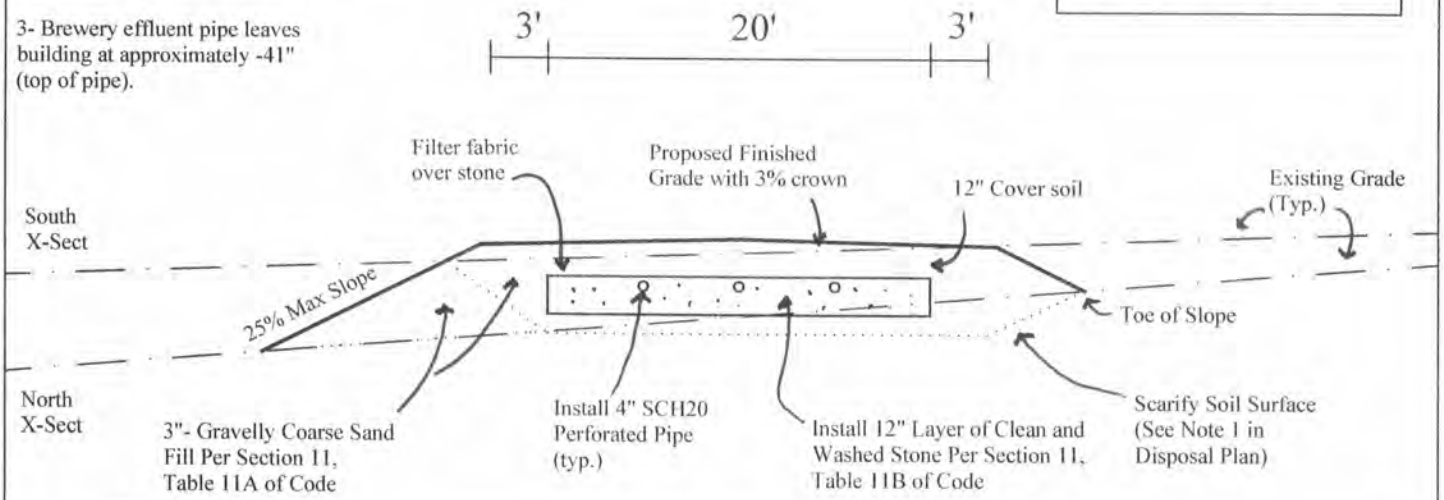
Notes:
1- Distribution lines to be level.

2- Cover soil includes 4" of loamy cap.

3- Brewery effluent pipe leaves building at approximately -41" (top of pipe).

DISPOSAL AREA CROSS SECTION

Scale
Horizontal 1" = 10 ft.
Vertical 1" = 5 ft.



Site Evaluator Signature	SE #	Date
Sarah Osley	#408	9/27/21

Hammond Ridge Development Corp **9/27/21**
Activity Center
200 Katahdin View Road

Septic System Calculations – System #2: Brewery

Design Flow Calculations:

10 bbl system @1 batch x 31 Gallons /bbl= 310 gallons/batch

With aggressive yeast side-streaming: 2 gallons wastewater/1 gallon beer

Target of 3 batches spaced over the course of a week.

310 gallons/batch x 2 gallons waste/brew x 3 batches/week ÷ 5 days/week

Total Design Flow: **372 GPD**

*The brewing process takes longer than one day, and therefore the wastewater created will be over a long span. However, it is difficult to predict the timing of water use, particularly when multiple batches may be at different points in the brewing process on any given day. The following additional measures must be employed: floor drains screens, side streaming, equalization tank (to control pH).

Tank Sizing:

Septic Tanks: **2 @ 1,500 Gallon** with Zabel A100 filter in first tank, followed by A300 filter in second tank.

Disposal Field Sizing:

Soil Sizing Factor: **3.3**

Wastewater Strength factor: 1.4 (Table 4B for 660mg/L – based on data from Oxbow brewing)

Total Area => 1,720 square feet

Stone Bed: 20' x 90'

General Installation Notes:

- System must be installed in accordance with Maine Subsurface Wastewater Rules: 144A CMR241.
- All sedimentation and erosion control measures shall be in accordance with the current edition of the MDEP Maine Erosion and Sediment Control BMPS.
- Only install system during suitable weather and moisture conditions. Do not install during wet weather of below freezing temperatures.
- Remove all vegetation and organic matter within system and fill extension area, leaving as much original topsoil as possible.
- Remove trees and woody vegetation withing 15 feet of the system.
- Divert any surface water from disposal area.
- Seal septic tank holes and pipe openings to create watertight tank.
- Bed septic tank in at least 6" of clean gravel.
- Septic tank risers are recommended to assist in maintenance/inspection.
- Contractor to size pump according to lift and run. Install check valve and high-water alarms in accordance with manufacturer's recommended installation.
- Do not operate wheeled equipment on disposal area or fill extension.
- Scarify disposal area bottom and fill extension along contour, avoid smearing or compacting soil. Add Gravelly Coarse Sand to provide a minimum transitional horizon of 6 inches to improve percolation.
- Disposal bed distribution lines are to be level within 1 inch in 100 feet.
- Finished grade of disposal field and 3-foot-wide shoulders to be 2%, fill extension to be maximum of 25% slope.
- Establish grass over the top of the disposal fields as soon as possible. If installation takes place in the late fall and it is too late for grass to grow, provide a thick layer of hay mulch to protect the field.
- Distribution boxes (D-Box) to be set level and placed on firm surface. Protect D-Box from freezing with 2 inches of high-density rigid polystyrene insulation on the sides and top.
- Avoid traffic and snow removal over pipes and disposal system.
- Clean effluent filters for Brewery daily, and for non-Brewery weekly (or as needed.)
- Periodically sample effluent in Brewery D-Box and test for BOD5 &TSS. Report results to site evaluator.
- Pump tanks every 3 years, or as needed.
- Provide flyers in the public restrooms specifying that only human waste and toilet paper be flushed.
- All kitchen sinks (anywhere cookware is being washed or wastewater particulates are being dumped) must have drain screens in them. All cookware (cooking utensils, dispensers, etc.) should be wiped off into the garbage before anything is rinsed or washed. For example, please throw partially used containers of creamer or milk into the garbage rather than dumping down the sink. Every effort must be made to avoid solids, fats, oils, grease, dairy products, etc. from entering the wastewater stream as is practicable.
- Internal brewing system to employ highest degree of side streaming as possible. Additionally, an equalization tank must be provided to allow for the normalization of pH in wastewater created during cleaning processes.

The more diligently these recommendations are adhered to, the better the system will work, and the longer the system will last.

Septic Soils:

Gravelly Coarse Sand:

Sieve Size	Percent Passing by Weight
3"	100
#4	75-100
#10	50-100
#60	10-50
#100	2-20
#200	2-8
Clay Fraction	0-2

Crushed Stone:

	Percent Passing by Weight	
Sieve Size	**1 ½" Stone**	**¾" Stone**
2"	100	100
1 ½"	95-100	100
¾"	0-40	90-100
½"	0-20	0-55
3/8"	0-8	0-25
#4	0-5	0-10
#200	0-2	0-2

Specified Sand (Eljen System) -ASTM C33 sand specification:

Sieve	Sieve Square Opening Size	Specification Percent Passing (Dry Sieve)
0.375"	9.5 mm	100.0 –100.0
#4	4.75 mm	95.0 – 100.0
#8	2.36 mm	80.0 – 100.0
#16	1.18 mm	50.0 – 85.0
#30	600 µm	25.0 – 60.0
#50	300 µm	10.0 – 30.0
#100	150 µm	< 10.0
#200	75 µm	< 5.0

While the above gradation for Specified Sand is preferred, if it is unavailable, the following material may be substituted:

Gravelly Coarse Sand with the following additional specifications:

Sieve	Percent Passing
1"	100%
#4	75%
#100	<10%
#200	<5%

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept.Health & Human Services
Div of Environmental Health , 11 SHS
(207) 287-5672 Fax: (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	T1 R8
Street or Road	Katahdin View Drive
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): Hammond Ridge Development Corp — ■ Owner ■ Applicant

Mailing Address of Owner/Applicant	PO Box 669
	Millinocket, ME 04462
Daytime Tel. #	207-723-3559

OWNER OR APPLICANT STATEMENT

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

Signature of Owner or Applicant _____ Date _____

>> CAUTION: LPI APPROVAL REQUIRED <<

Town/City _____ Permit # _____

Date Permit Issued ___/___/___ Fee: $_____ Double Fee Charged [ ]

Local Plumbing Inspector Signature _____ L.P.I. # _____

Owner Town State

The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

Local Plumbing Inspector Signature _____ (2nd) date approved _____

PERMIT INFORMATION

TYPE OF APPLICATION

■ 1. First Time System
☐ 2. Replacement System
Type replaced: _____
Year installed: _____
☐ 3. Expanded System
☐ a. <25% Expansion
☐ b. >25% Expansion
☐ 4. Experimental System
☐ 5. Seasonal Conversion

THIS APPLICATION REQUIRES

■ 1. No Rule Variance
☐ 2. First Time System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 3. Replacement System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 4. Minimum Lot Size Variance
☐ 5. Seasonal Conversion Permit

DISPOSAL SYSTEM COMPONENTS

■ 1. Complete Non-engineered System
☐ 2. Primitive System (graywater & alt. toilet)
☐ 3. Alternative Toilet, specify: _____
☐ 4. Non-engineered Treatment Tank (only)
☐ 5. Holding Tank, _____ gallons
☐ 6. Non-engineered Disposal Field (only)
☐ 7. Separated Laundry System
☐ 8. Complete Engineered System (2000 gpd or more)
☐ 9. Engineered Treatment Tank (only)
☐ 10. Engineered Disposal Field (only)
■ 11. Pre-treatment, specify: Grease Interceptor (2000gal)
☐ 12. Miscellaneous Components

SIZE OF PROPERTY

+/- ☐ SQ. FT. ■ ACRES

SHORELAND ZONING

☐ Yes ■ No

DISPOSAL SYSTEM TO SERVE

☐ 1. Single Family Dwelling Unit, No. of Bedrooms: ____
☐ 2. Multiple Family Dwelling, No. of Units: ____
■ 3. Other: Activity Center (specify)
Current Use ☐ Seasonal ☐ Year Round ■ Undeveloped

TYPE OF WATER SUPPLY

(Proposed)
■ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private
☐ 4. Public ☐ 5. Other

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

■ 1. Concrete
■ a. Regular
☐ b. Low Profile
☐ 2. Plastic
☐ 3. Other: _____
CAPACITY: 2@2000 GAL.

DISPOSAL FIELD TYPE & SIZE

■ 1. Stone Bed ☐ 2. Stone Trench
☐ 3. Proprietary Device
☐ a. cluster array ☐ c. Linear
☐ b. regular load ☐ d. H-20 load
☐ 4. Other: _____
SIZE: 8,400 ■ sq. ft. ☐ lin. ft.

GARBAGE DISPOSAL UNIT

■ 1. No ☐ 2. Yes ☐ 3. Maybe
If Yes or Maybe, specify one below:
☐ a. multi-compartment tank
☐ b. ___ tanks in series
☐ c. increase in tank capacity
☐ d. Filter on Tank Outlet

DESIGN FLOW

1,959 gallons per day
BASED ON:
☐ 1. Table 4A (dwelling unit(s))
■ 2. Table 4C(other facilities)
SHOW CALCULATIONS for other facilites
See Attached
☐ 3. Section 4G (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
3 / C
at Observation Hole # TP-3/SB-3
Depth 28/26 "
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

☐ 1. Medium---2.6 sq. ft. / gpd
■ 2. Medium---Large 3.3 sq. f.t / gpd
☐ 3. Large---4.1 sq. ft. / gpd
☐ 4. Extra Large---5.0 sq. ft. / gpd

EFFLUENT/EJECTOR PUMP

☐ Not Required
☐ May Be Required
■ Required
Specify only for engineered systems:
DOSE: _____ gallons

LATITUDE AND LONGITUDE

at center of disposal area
Lat. 45 d 43 m 0.12 s
Lon. -68 d 49 m 1.65 s
if g.p.s, state margin of error: 30' +/-

SITE EVALUATOR STATEMENT

I certify that on 8/14/21 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Sarah Ashley — Site Evaluator Signature
#408 — SE #
9/27/21 — Date
Sarah Ashley — Site Evaluator Name Printed
207-231-4349 — Telephone Number
sarah@sashengineering.com — E-mail Address

Note : Changes to or deviations from the design should be confirmed with the Site Evaluator.

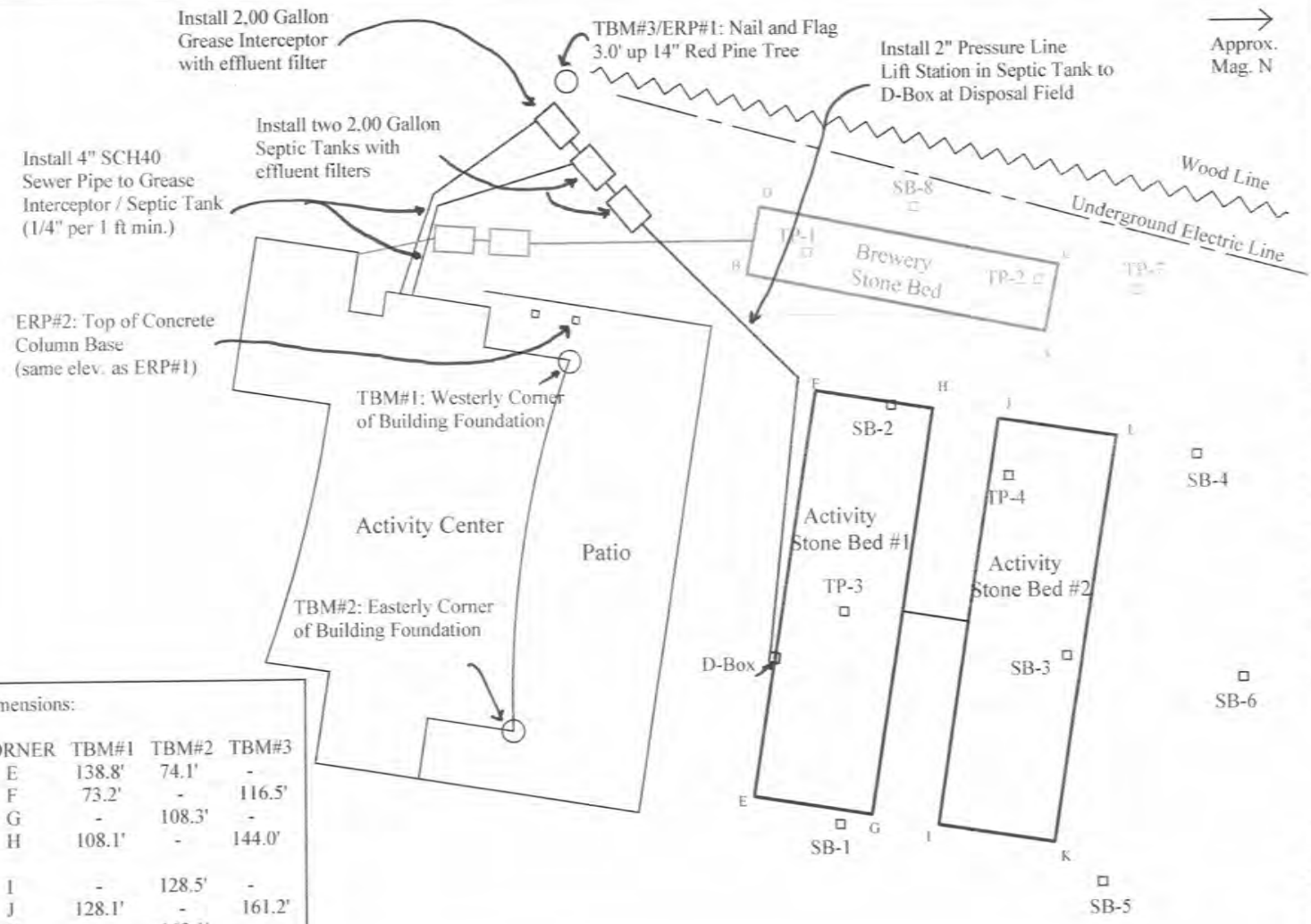
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	200 Katahdin View Drive	Hammond Ridge Development Corp.

SITE PLAN

Scale 1" = 50 ft. or as shown



Dimensions:

CORNER	TBM#1	TBM#2	TBM#3
E	138.8'	74.1'	-
F	73.2'	-	116.5'
G	-	108.3'	-
H	108.1'	-	144.0'
I	-	128.5'	-
J	128.1'	-	161.2'
K	-	163.1'	-
L	163.1'	-	-

SITE LOCATION PLAN

Notes:

1- Review and comply with attached General Installation Notes and Septic Soils Information.

2- Septic Tanks may be field located in accordance with required setbacks.

3- Grease Interceptor and Septic Tanks to be outfitted with the following effluent filters:
-grease interceptor: Zabel A300
- first septic tank: Zabel A100,
- second septic tank: Polylok PL625.

Install two 35' x 120' Stone and Pipe Disposal Beds

Sarah Ashley — Site Evaluator Signature

#408 — SE #

9/27/21 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

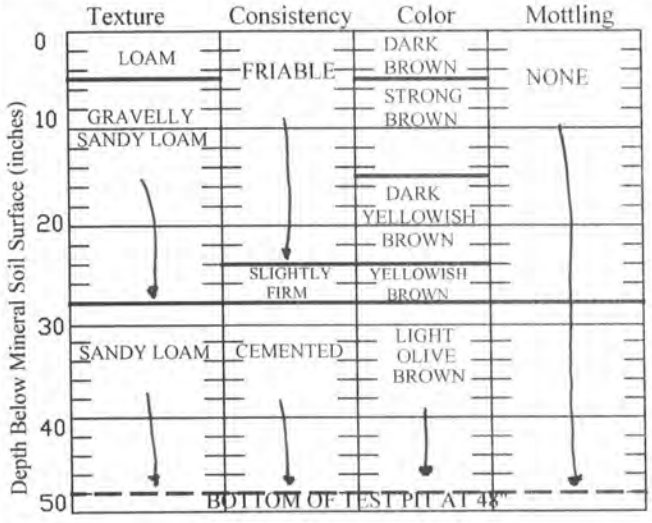
Street, Road, Subdivision: 200 Katahdin View Drive

Owner's Name: Hammond Ridge Development Corp.

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown on Page 2)

Observation Hole TP-3 (elev. -31") ■ Test Pit ☐ Boring

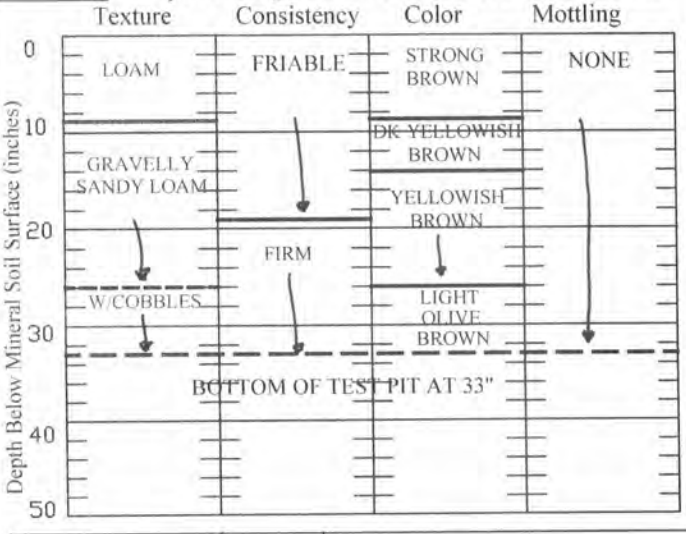
2 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	1-2 %	28 "	[ ] Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-4 (elev. -57") ■ Test Pit ☐ Boring

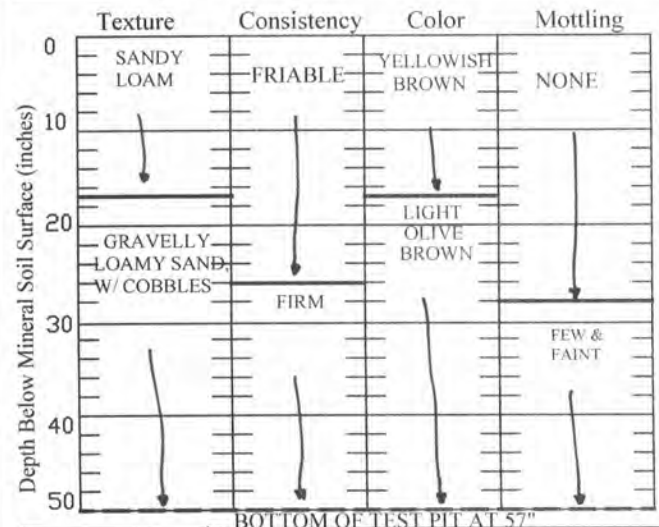
4 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	2-5 %	19 "	[ ] Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole SB-2 (elev. -44") ■ Test Pit ☐ Boring

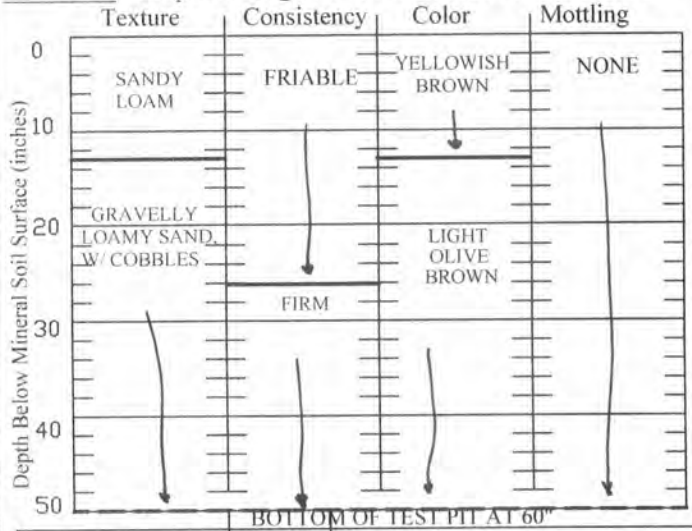
5 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	26 "	■ Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole SB-3 (elev. -46") ■ Test Pit ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	%	26 "	■ Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Ashley — Site Evaluator Signature

#408 — SE #

9/27/21 — Date

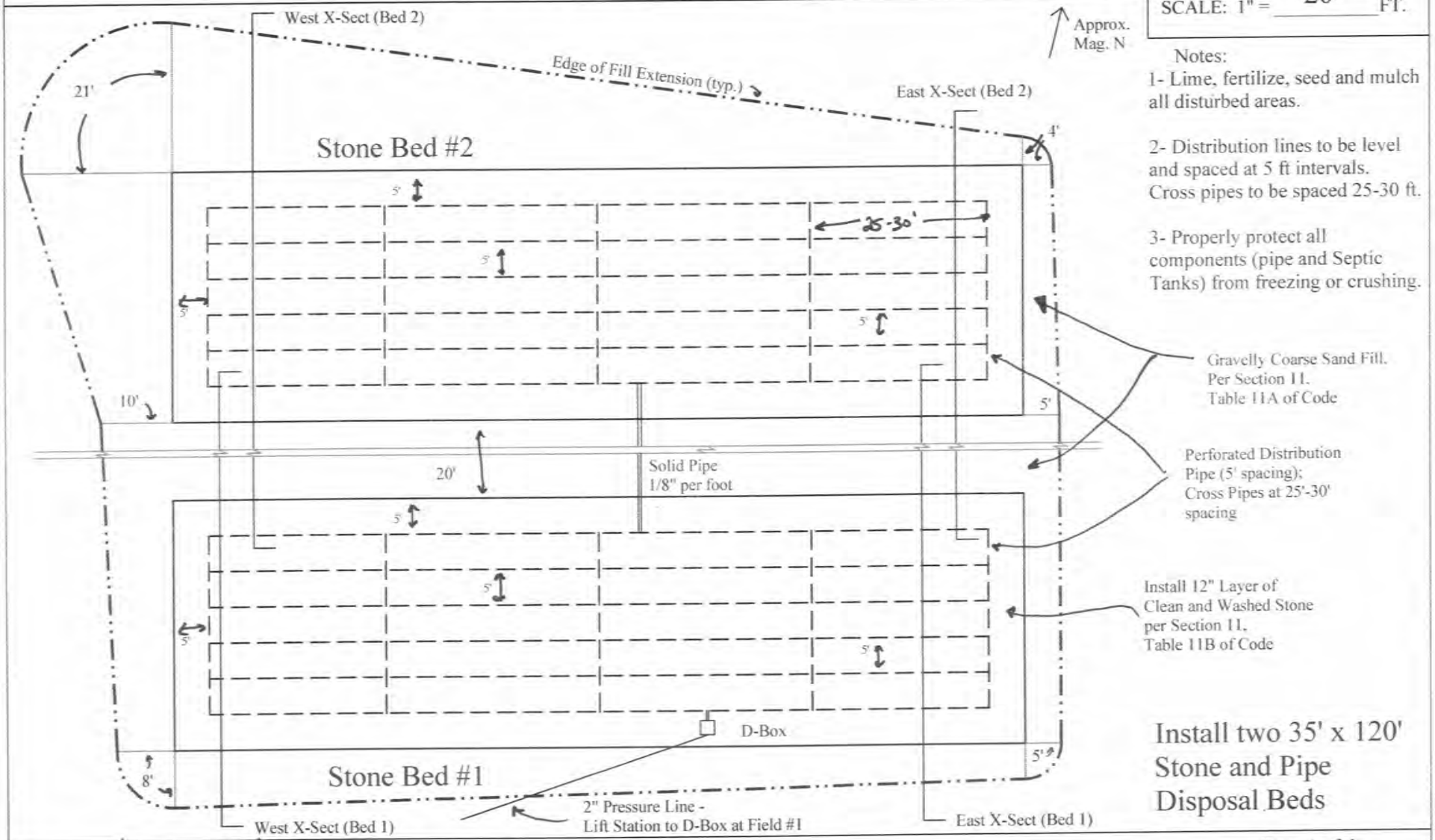
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	200 Katahdin View Drive	Hammond Ridge Development Corp.

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE: 1" = 20 FT.



Notes:

1- Lime, fertilize, seed and mulch all disturbed areas.

2- Distribution lines to be level and spaced at 5 ft intervals. Cross pipes to be spaced 25-30 ft.

3- Properly protect all components (pipe and Septic Tanks) from freezing or crushing.

Install two 35' x 120' Stone and Pipe Disposal Beds

Site Evaluator Signature	SE #	Date
Sarah Ashley	#408	9/27/21

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	200 Katahdin View Drive	Hammond Ridge Development Corp.

FILL REQUIREMENTS

	W	E
Depth of Fill (Upslope)	21"	3"
Depth of Fill (Downslope)	31"	9"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	-23"
Top of Distribution Pipe	-36"
Bottom of Disposal Area	-47"

ELEVATION REFERENCE POINT
Location & Description: TBM#1: Nail and Flag
Reference Elevation: 0" 3.0' up 14" Red Pine

DISPOSAL AREA CROSS SECTION

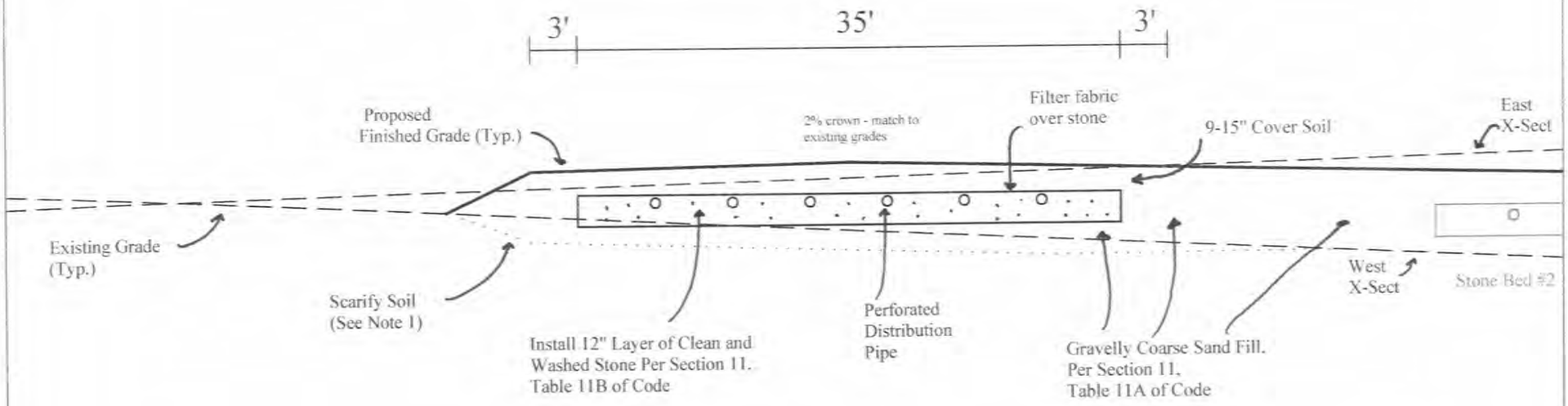
Scale
Horizontal 1" = 10 ft.
Vertical 1" = 5 ft.

Notes:
1 - Scarify upper 6" of soil surface and mix in Gravelly Coarse Sand (Table 11A of Code) to create a transition layer below Disposal Field.

2 - Finish grades pitched to promote surface water drainage away from disposal fields.

3 - Cover Soil to include 4" loamy cap. If more than 18" cover is used, the field should be vented.

Stone Bed #1



Site Evaluator Signature | #408 SE # | 9/27/21 Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	200 Katahdin View Drive	Hammond Ridge Development Corp.

FILL REQUIREMENTS

	W	E
Depth of Fill (Upslope)	27"	0"
Depth of Fill (Downslope)	45"	5"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	-30"
Top of Distribution Pipe	-43"
Bottom of Disposal Area	-54"

ELEVATION REFERENCE POINT
Location & Description: TBM#1: Nail and Flag
Reference Elevation: 0" 3.0' up 14" Red Pine

DISPOSAL AREA CROSS SECTION

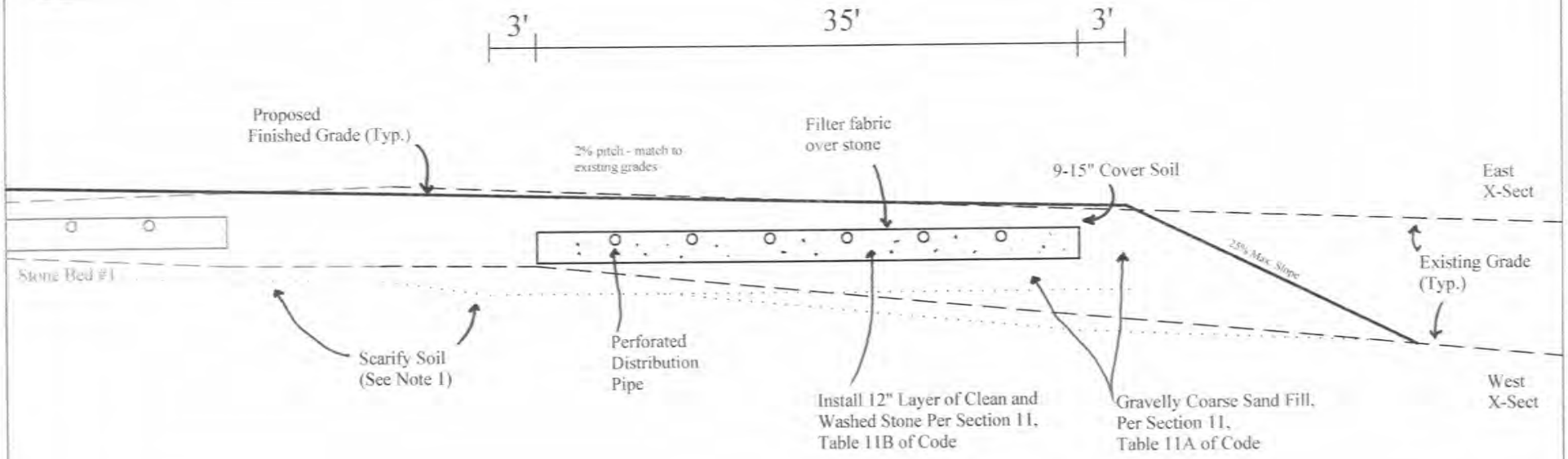
Scale
Horizontal 1" = 10 ft.
Vertical 1" = 5 ft.

Notes:
1 - Scarify upper 6" of soil surface and mix in Gravelly Coarse Sand (Table 11A of Code) to create a transition layer below Disposal Field.

2 - Finish grades pitched to promote surface water drainage away from disposal field.

3 - Cover Soil to include 4" loamy cap. If more than 18" cover is used, the field should be vented.

Stone Bed #2



Sarah Ashley — Site Evaluator Signature
#408 — SE #
9/27/21 — Date

Hammond Ridge Development Corp 9/27/21
Activity Center
200 Katahdin View Road

Septic System Calculations – System #1: Activity Center (Non-Brewing)

Design Flow Calculations:

Employees/Activity Center/Limited Food Service

with 7 employees in 24 hour period @12GPD = **84 GPD**

125 seats with limited food @15 GPD/seat = **1,875 GPD**

Total Design Flow: 1,959 GPD

Tank Sizing:

Septic Tanks: 1,959 GPD x 200% = 4,000 Gallon (minimum) with Zabel A300, (or A100 followed by A300*)

2 @ 2,000 Gallon

Grease Interceptor: **2,000 Gallon with Zabel A300** (Kitchen outlet only)

*PolyLok PL625 may be used in place of Zabel A300 in lift station due to fit constraints.

Disposal Field Sizing:

Soil Sizing Factor: **3.3**

Employee sizing factor: **1.0**

Food Service sizing factor: 1.8

-0.2 200% Tank Storage Capacity

-0.1 Multiple Tanks

-0.1 Grease Interceptor

-0.1 Effluent Filter (Zabel A300 in Septic Tanks and Interceptor)

1.3

Employee Size: 84 GPD x 3.3 x 1.0 = 278 square feet

Food Service Size: 1,800 GPD x 3.3 x 1.3 = 8,044 square feet

Total Disposal Area => 8,320 square feet

2 Stone and Pipe beds at 35' by 120', spaced 20' apart (overall 90' by 120')

SEA

General Installation Notes:

- System must be installed in accordance with Maine Subsurface Wastewater Rules: 144A CMR241.
- All sedimentation and erosion control measures shall be in accordance with the current edition of the MDEP Maine Erosion and Sediment Control BMPS.
- Only install system during suitable weather and moisture conditions. Do not install during wet weather of below freezing temperatures.
- Remove all vegetation and organic matter within system and fill extension area, leaving as much original topsoil as possible.
- Remove trees and woody vegetation withing 15 feet of the system.
- Divert any surface water from disposal area.
- Seal septic tank holes and pipe openings to create watertight tank.
- Bed septic tank in at least 6" of clean gravel.
- Septic tank risers are recommended to assist in maintenance/inspection.
- Contractor to size pump according to lift and run. Install check valve and high-water alarms in accordance with manufacturer's recommended installation.
- Do not operate wheeled equipment on disposal area or fill extension.
- Scarify disposal area bottom and fill extension along contour, avoid smearing or compacting soil. Add Gravelly Coarse Sand to provide a minimum transitional horizon of 6 inches to improve percolation.
- Disposal bed distribution lines are to be level within 1 inch in 100 feet.
- Finished grade of disposal field and 3-foot-wide shoulders to be 2%, fill extension to be maximum of 25% slope.
- Establish grass over the top of the disposal fields as soon as possible. If installation takes place in the late fall and it is too late for grass to grow, provide a thick layer of hay mulch to protect the field.
- Distribution boxes (D-Box) to be set level and placed on firm surface. Protect D-Box from freezing with 2 inches of high-density rigid polystyrene insulation on the sides and top.
- Avoid traffic and snow removal over pipes and disposal system.
- Clean effluent filters for Brewery daily, and for non-Brewery weekly (or as needed.)
- Periodically sample effluent in Brewery D-Box and test for BOD5 &TSS. Report results to site evaluator.
- Pump tanks every 3 years, or as needed.
- Provide flyers in the public restrooms specifying that only human waste and toilet paper be flushed.
- All kitchen sinks (anywhere cookware is being washed or wastewater particulates are being dumped) must have drain screens in them. All cookware (cooking utensils, dispensers, etc.) should be wiped off into the garbage before anything is rinsed or washed. For example, please throw partially used containers of creamer or milk into the garbage rather than dumping down the sink. Every effort must be made to avoid solids, fats, oils, grease, dairy products, etc. from entering the wastewater stream as is practicable.
- Internal brewing system to employ highest degree of side streaming as possible. Additionally, an equalization tank must be provided to allow for the normalization of pH in wastewater created during cleaning processes.

The more diligently these recommendations are adhered to, the better the system will work, and the longer the system will last.

Septic Soils:

Gravelly Coarse Sand:

Sieve Size	Percent Passing by Weight
3"	100
#4	75-100
#10	50-100
#60	10-50
#100	2-20
#200	2-8
Clay Fraction	0-2

Crushed Stone:

	Percent Passing by Weight	
Sieve Size	**1 ½" Stone**	**¾" Stone**
2"	100	100
1 ½"	95-100	100
¾"	0-40	90-100
½"	0-20	0-55
3/8"	0-8	0-25
#4	0-5	0-10
#200	0-2	0-2

Specified Sand (Eljen System) -ASTM C33 sand specification:

Sieve	Sieve Square Opening Size	Specification Percent Passing (Dry Sieve)
0.375"	9.5 mm	100.0 –100.0
#4	4.75 mm	95.0 – 100.0
#8	2.36 mm	80.0 – 100.0
#16	1.18 mm	50.0 – 85.0
#30	600 µm	25.0 – 60.0
#50	300 µm	10.0 – 30.0
#100	150 µm	< 10.0
#200	75 µm	< 5.0

While the above gradation for Specified Sand is preferred, if it is unavailable, the following material may be substituted:

Gravelly Coarse Sand with the following additional specifications:

Sieve	Percent Passing
1"	100%
#4	75%
#100	<10%
#200	<5%

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept.Health & Human Services
Div of Environmental Health , 11 SHS
(207) 287-5672 Fax: (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	T1 R8
Street or Road	380 Gravity Lane
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): Twin Pine Camps, LLC — ■ Owner ■ Applicant

Mailing Address of Owner/Applicant	PO Box 669
	Millinocket, ME 04462
Daytime Tel. #	207-723-3559

OWNER OR APPLICANT STATEMENT

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

Signature of Owner or Applicant _____ Date _____

>> CAUTION: LPI APPROVAL REQUIRED <<

Town/City _____ Permit # _____

Date Permit Issued ___/___/___ Fee: $_____ Double Fee Charged [ ]

Local Plumbing Inspector Signature _____ L.P.I. # _____

Owner Town State

The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

Local Plumbing Inspector Signature _____ (2nd) date approved _____

PERMIT INFORMATION

TYPE OF APPLICATION

- ■ 1. First Time System
- ☐ 2. Replacement System
  - Type replaced: _____
  - Year installed: _____
- ☐ 3. Expanded System
  - ☐ a. <25% Expansion
  - ■ b. >25% Expansion
- ☐ 4. Experimental System
- ☐ 5. Seasonal Conversion

THIS APPLICATION REQUIRES

- ■ 1. No Rule Variance
- ☐ 2. First Time System Variance
  - ☐ a. Local Plumbing Inspector Approval
  - ■ b. State & Local Plumbing Inspector Approval
- ☐ 3. Replacement System Variance
  - ■ a. Local Plumbing Inspector Approval
  - ■ b. State & Local Plumbing Inspector Approval
- ☐ 4. Minimum Lot Size Variance
- ☐ 5. Seasonal Conversion Permit

DISPOSAL SYSTEM COMPONENTS

- ■ 1. Complete Non-engineered System
- ☐ 2. Primitive System (graywater & alt. toilet)
- ☐ 3. Alternative Toilet, specify: _____
- ☐ 4. Non-engineered Treatment Tank (only)
- ☐ 5. Holding Tank, _____ gallons
- ☐ 6. Non-engineered Disposal Field (only)
- ☐ 7. Separated Laundry System
- ☐ 8. Complete Engineered System (2000 gpd or more)
- ☐ 9. Engineered Treatment Tank (only)
- ☐ 10. Engineered Disposal Field (only)
- ■ 11. Pre-treatment, specify: Grease Interceptor (1500gal)
- ☐ 12. Miscellaneous Components

SIZE OF PROPERTY

+/- ☐ SQ. FT. ■ ACRES

SHORELAND ZONING

☐ Yes ■ No

DISPOSAL SYSTEM TO SERVE

- ☐ 1. Single Family Dwelling Unit, No. of Bedrooms: ____
- ☐ 2. Multiple Family Dwelling, No. of Units: ____
- ■ 3. Other: Event Center (specify)

Current Use ☐ Seasonal ☐ Year Round ■ Undeveloped

TYPE OF WATER SUPPLY

(Proposed)

■ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private ☐ 4. Public ☐ 5. Other

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

- ■ 1. Concrete
  - ■ a. Regular
  - ☐ b. Low Profile
- ☐ 2. Plastic
- ☐ 3. Other: _____

CAPACITY: 2@1000 GAL.

DISPOSAL FIELD TYPE & SIZE

- ☐ 1. Stone Bed ■ 2. Stone Trench
- ☐ 3. Proprietary Device
  - ☐ a. cluster array ☐ c. Linear
  - ☐ b. regular load ☐ d. H-20 load
- ☐ 4. Other: _____

SIZE: 704 ☐ sq. ft. ■ lin. ft.

GARBAGE DISPOSAL UNIT

■ 1. No ☐ 2. Yes ☐ 3. Maybe

If Yes or Maybe, specify one below:

- ☐ a. multi-compartment tank
- ☐ b. ___ tanks in series
- ☐ c. increase in tank capacity
- ☐ d. Filter on Tank Outlet

DESIGN FLOW

822 gallons per day

BASED ON:

- ☐ 1. Table 4A (dwelling unit(s))
- ■ 2. Table 4C(other facilities)

SHOW CALCULATIONS for other facilites

See Attached

- ☐ 3. Section 4G (meter readings)

ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE 3 / CONDITION C

at Observation Hole # TP-1

Depth _____"

of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

- ☐ 1. Medium---2.6 sq. ft. / gpd
- ■ 2. Medium---Large 3.3 sq. f.t / gpd
- ☐ 3. Large---4.1 sq. ft. / gpd
- ☐ 4. Extra Large---5.0 sq. ft. / gpd

EFFLUENT/EJECTOR PUMP

- ■ Not Required
- ☐ May Be Required
- ☐ Required

Specify only for engineered systems:

DOSE: _____ gallons

LATITUDE AND LONGITUDE

at center of disposal area

Lat. 45 d 43 m 8.93 s

Lon. -68 d 46 m 23.55 s

if g.p.s, state margin of error: 30' +/-

SITE EVALUATOR STATEMENT

I certify that on 11/3/21 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Sarah Ashley — Site Evaluator Signature

#408 — SE #

1/21/22 rev 10/21/22 — Date

Sarah Ashley — Site Evaluator Name Printed

207-231-4349 — Telephone Number

sarah@sashengineering.com — E-mail Address

Note : Changes to or deviations from the design should be confirmed with the Site Evaluator

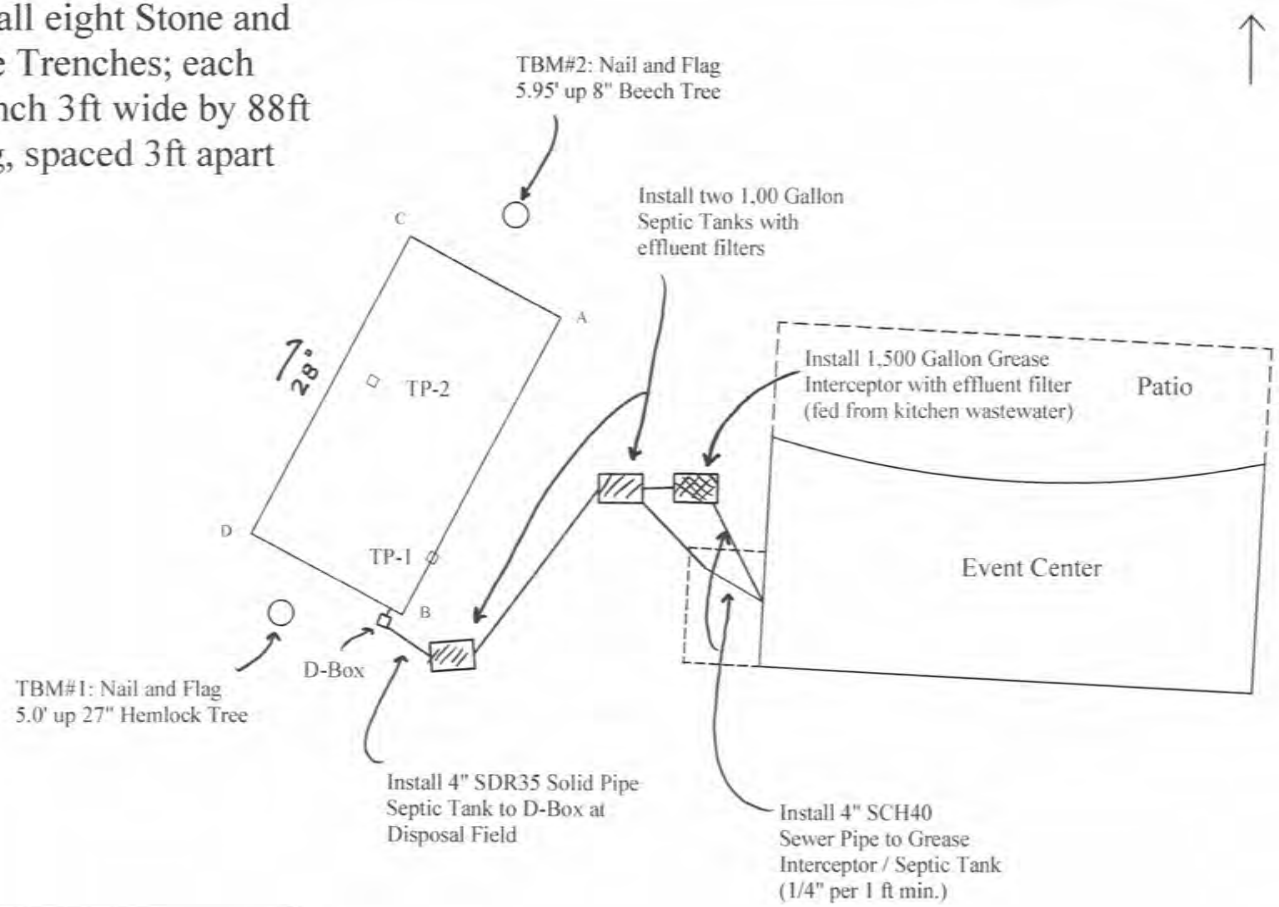
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

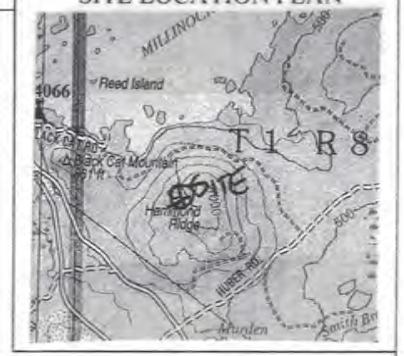
Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	380 Gravity Lane	Twin Pine Camps, LLC

SITE PLAN Scale 1" = 50 ft. or as shown

Install eight Stone and Pipe Trenches; each Trench 3ft wide by 88ft long, spaced 3ft apart



SITE LOCATION PLAN



Notes:

1- Review and comply with attached General Installation Notes and Septic Soils Information.

2- Septic Tanks may be field located in accordance with required setbacks.

3- Grease Interceptor and Septic Tanks to be outfitted with the following effluent filters:
-grease interceptor: Zabel A300
- first septic tank: Zabel A100,
- second septic tank: Polylok PL625. (or Zabel A500)

4- Remove trees and any woody vegetation within 20' of disposal field.

Dimensions:

	CORNER A	B	C	D
TBM#1	106.5'	32.1'	-	22.4'
TBM#2	29.5'	108.5'	28.5'	-

Sarah Arsley — Site Evaluator Signature

#408 — SE #

1/21/22 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: T1 R8

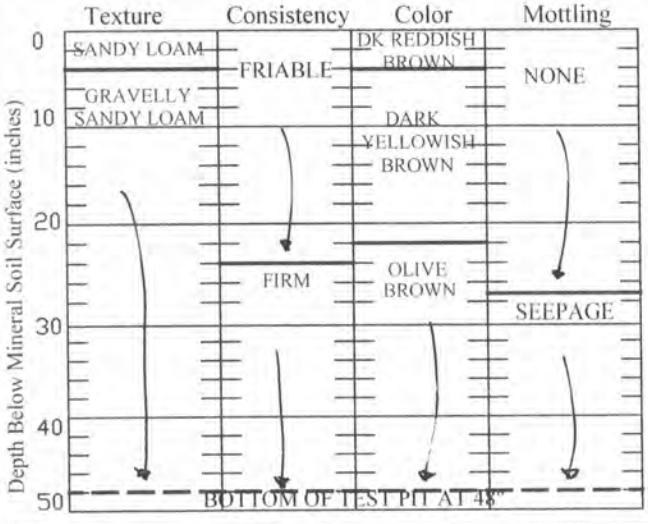
Street, Road, Subdivision: 380 Gravity Lane

Owner's Name: Twin Pine Camps, LLC

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown on Page 2)

Observation Hole TP-1 (elev. -30") ■ Test Pit ☐ Boring

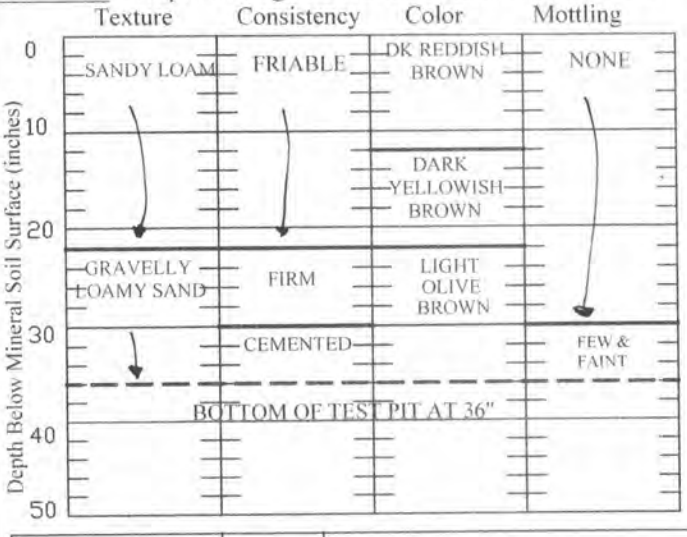
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	15 %	24 "	[ ] Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-2 (elev. -82") ■ Test Pit ☐ Boring

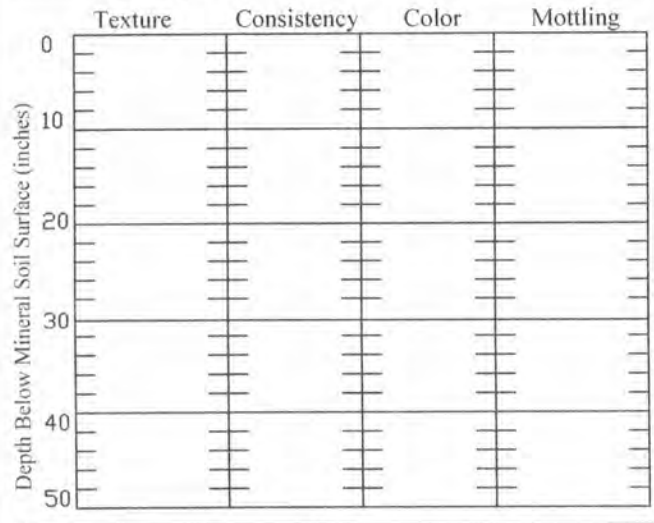
3 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	15 %	22 "	[ ] Ground Water ■ Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

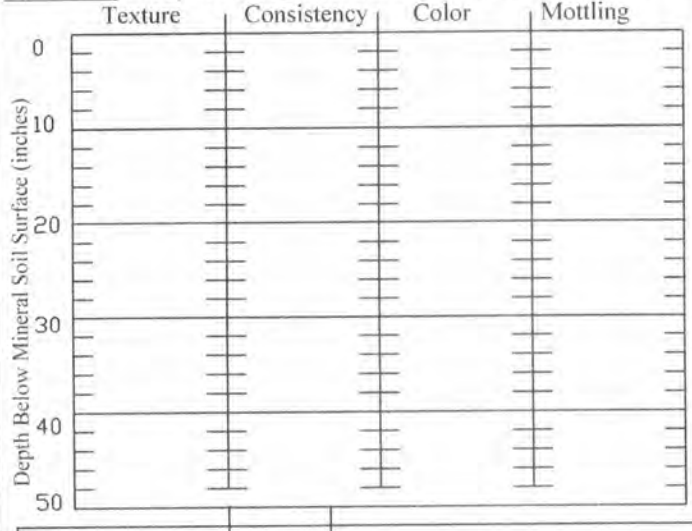
_____ " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
Profile Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
Profile Condition	%	"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Sarah Osley — Site Evaluator Signature

#408 — SE #

1/21/22 rev.10/24/22 — Date

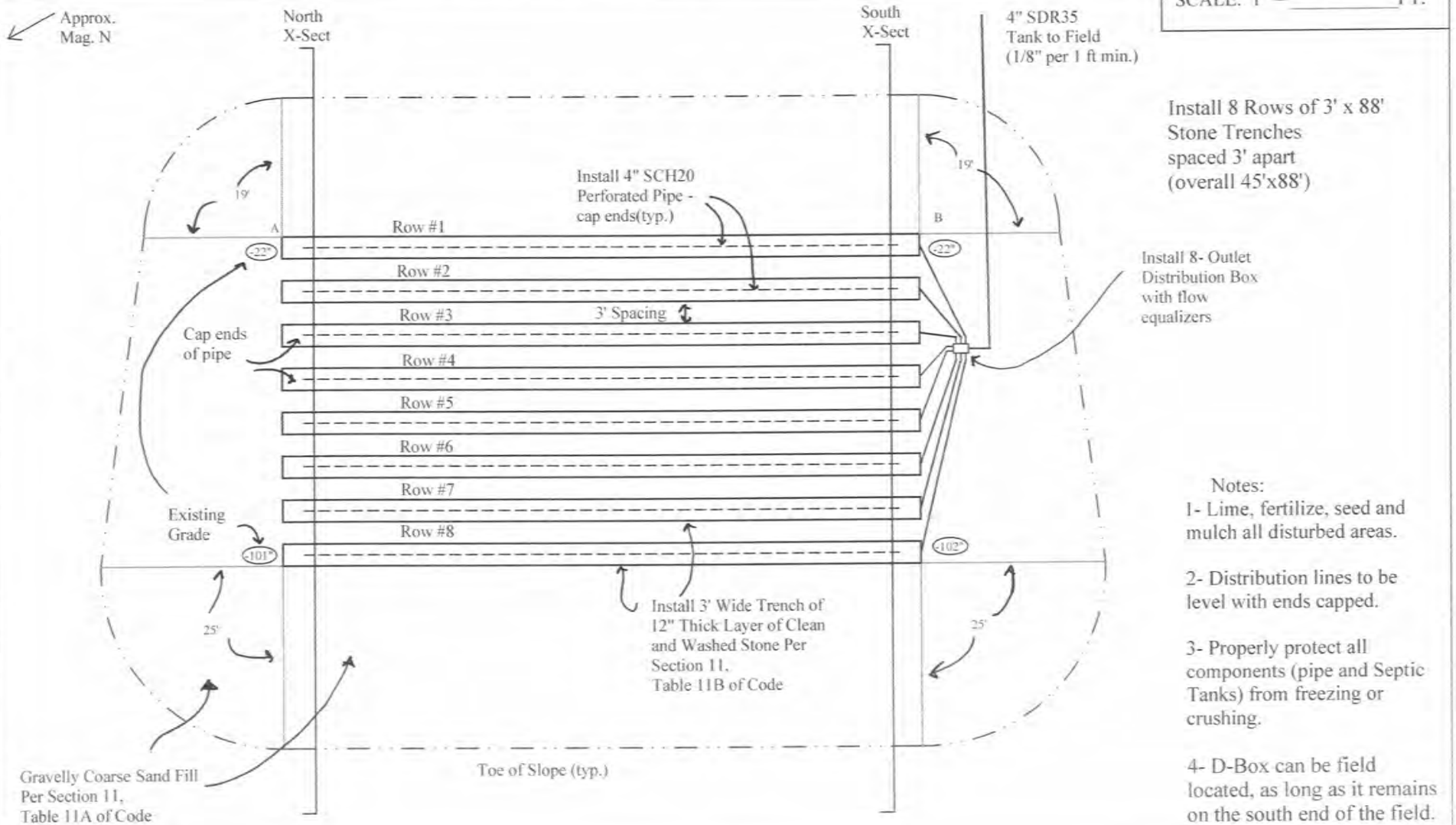
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	380 Gravity Lane	Twin Pine Camps, LLC

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE: 1" = 20 FT.



Notes:

1- Lime, fertilize, seed and mulch all disturbed areas.

2- Distribution lines to be level with ends capped.

3- Properly protect all components (pipe and Septic Tanks) from freezing or crushing.

4- D-Box can be field located, as long as it remains on the south end of the field.

Sarah Ashley — Site Evaluator Signature

#408 — SE #

1/21/22 rev.10/24/22 — Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
T1 R8	380 Gravity Lane	Twin Pine Camps, LLC

FILL REQUIREMENTS

Depth of Fill (Upslope) 12"

Depth of Fill (Downslope) 28"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation

Top of Distribution Pipe — See Table

Bottom of Disposal Area

ELEVATION REFERENCE POINT

Location & Description: TBM#1: Nail and Flag 5.0' up 27" Hemlock

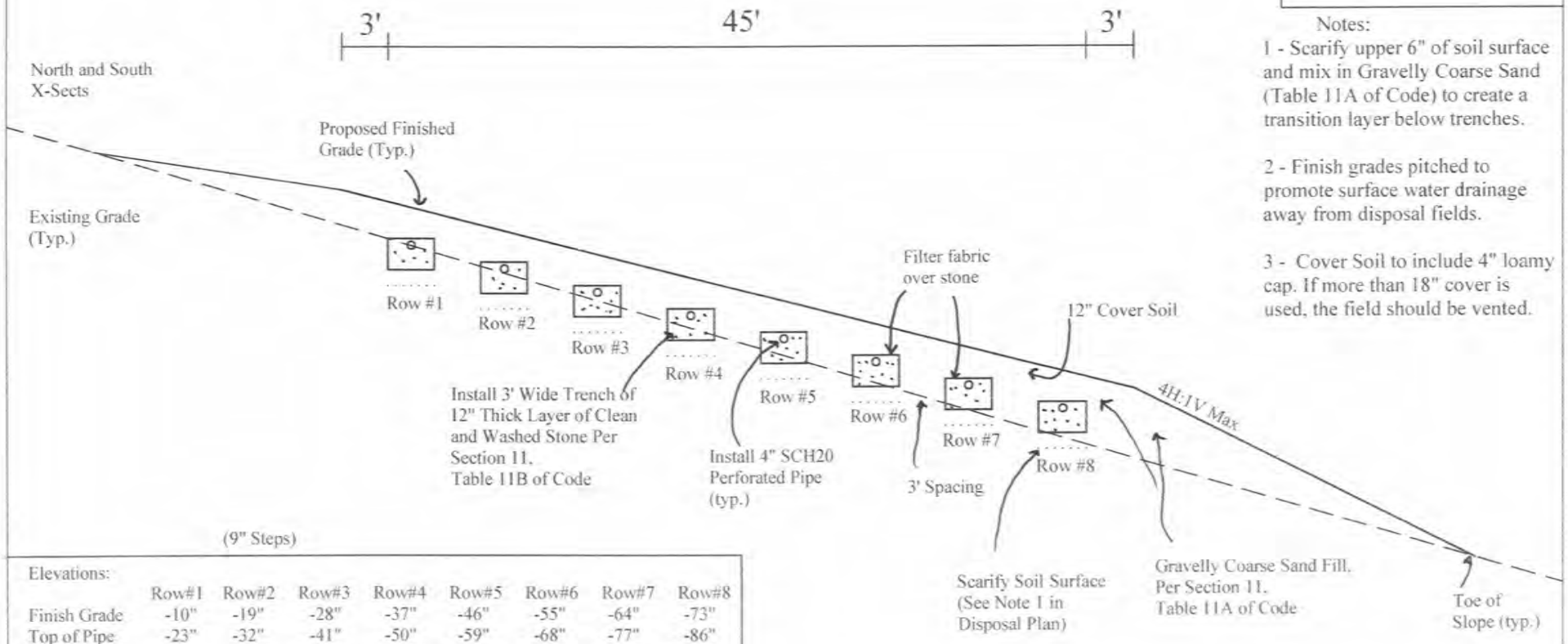
Reference Elevation: 0"

DISPOSAL AREA CROSS SECTION

Scale

Horizontal 1" = 10 ft.

Vertical 1" = 5 ft.



Notes:

1 - Scarify upper 6" of soil surface and mix in Gravelly Coarse Sand (Table 11A of Code) to create a transition layer below trenches.

2 - Finish grades pitched to promote surface water drainage away from disposal fields.

3 - Cover Soil to include 4" loamy cap. If more than 18" cover is used, the field should be vented.

Elevations:

	Row#1	Row#2	Row#3	Row#4	Row#5	Row#6	Row#7	Row#8
Finish Grade	-10"	-19"	-28"	-37"	-46"	-55"	-64"	-73"
Top of Pipe	-23"	-32"	-41"	-50"	-59"	-68"	-77"	-86"
Bottom Stone	-34"	-43"	-52"	-61"	-70"	-79"	-88"	-97"

Site Evaluator Signature

#408 SE #

1/21/22 rev.10/24/22 Date

Twin Pines Camps, LLC **1/21/22**
Event Center
380 Gravity Lane

Septic System Calculations

Design Flow Calculations:

Employees-

with 6 employees in 24 hour period @12GPD = **72 GPD**

150 seats Banquet Hall @5 GPD/seat = **750 GPD**

Total Design Flow: 822 GPD

Tank Sizing:

Septic Tanks: 822 GPD x 200% = 1,650 Gallon (minimum) with Zabel A300, (or A100 followed by A300*)

2 @ 1,000 Gallon

Grease Interceptor: **1,500 Gallon with Zabel A300** (Kitchen outlet only)

*PolyLok PL625 may be used in place of Zabel A300.

Disposal Field Sizing:

Soil Sizing Factor: **3.3**

Employee sizing factor: **1.0**

Food Service sizing factor: 1.8

-0.2 200% Tank Storage Capacity

-0.1 Multiple Tanks

-0.1 Grease Interceptor

-0.1 Effluent Filter (Zabel A300 in Septic Tanks and Interceptor)

1.3

Employee Size: 72 GPD x 3.3 x 1.0 = 240 square feet

Banquet Size: 750 GPD x 3.3 x 1.3 = 3,220 square feet

Total Disposal Area => 3,460 square feet

8 Trenches: 3 feet wide by 88 feet long, 1 foot deep

General Installation Notes:

- System must be installed in accordance with Maine Subsurface Wastewater Rules: 144A CMR241.
- All sedimentation and erosion control measures shall be in accordance with the current edition of the MDEP Maine Erosion and Sediment Control BMPS.
- Only install system during suitable weather and moisture conditions. Do not install during wet weather of below freezing temperatures.
- Remove all vegetation and organic matter within system and fill extension area, leaving as much original topsoil as possible.
- Remove trees and woody vegetation withing 15 feet of the system.
- Divert any surface water from disposal area.
- Seal septic tank holes and pipe openings to create watertight tank.
- Bed septic tank in at least 6" of clean gravel.
- Septic tank risers are recommended to assist in maintenance/inspection.
- Do not operate wheeled equipment on disposal area or fill extension.
- Scarify disposal area bottom and fill extension along contour, avoid smearing or compacting soil. Add Gravelly Coarse Sand to provide a minimum transitional horizon of 6 inches to improve percolation.
- Disposal trench distribution lines are to be level within 1 inch in 100 feet.
- Finished grade of disposal field and 3-foot-wide shoulders to roughly match existing grade, fill extension to be maximum of 25% slope.
- Establish grass over the top of the disposal fields as soon as possible. If installation takes place in the late fall and it is too late for grass to grow, provide a thick layer of hay mulch to protect the field.
- Distribution boxes (D-Box) to be set level and placed on firm surface. Protect D-Box from freezing with 2 inches of high-density rigid polystyrene insulation on the sides and top.
- Avoid traffic and snow removal over pipes and disposal system.
- Clean effluent filters weekly (or as needed.)
- Pump tanks every 3 years, or as needed.
- Provide flyers in the public restrooms specifying that only human waste and toilet paper be flushed.
- All kitchen sinks (anywhere cookware is being washed or wastewater particulates are being dumped) must have drain screens in them. All cookware (cooking utensils, dispensers, etc.) should be wiped off into the garbage before anything is rinsed or washed. For example, please throw partially used containers of creamer or milk into the garbage rather than dumping down the sink. Every effort must be made to avoid solids, fats, oils, grease, dairy products, etc. from entering the wastewater stream as is practicable.

The more diligently these recommendations are adhered to, the better the system will work, and the longer the system will last.

SECTION 18

SOLID WASTE

Letter from Penobscot County

SECTION 18

SOLID WASTE

Site Clearing and Grubbing:
The project will include the clearing and grubbing of approximately 17 acres of wooded area. Assuming 300 cubic yards of vegetation waste is generated per acre, this project will result in 5,100 cubic yards. To minimize waste, timber will be harvested from site areas requiring clearings. The remainer of cleared vegetation will be processed on-site and used for erosion control.

Construction Debris:
Construction debris associated with this project will be minimal. The site was previously undeveloped and therefore does not require any demolition.

Municipal Solid Waste:
The development will include an Event Center, Activity Center, 41 single-family dwellings, and 51 multi-family dwellings. The Event Center and Activity Center produce 3.12 pounds of waste per 100 square feet per day. The Event Center is approximately 9,000 square feet and the Activity Center is approximately 10,000 square feet. Cumulatively, the facilities are estimated to generate 593 pounds of municipal solid waste (MSW) per day. Single family dwellings produce 11.4 pounds of waste per dwelling unit per day and multi-family dwellings produce 8.6 pounds of waste per dwelling unit per day. Cumulatively, the dwelling units will produce an estimated 906 pounds of waste per day. In total, the mentioned uses will generate approximately 1,500 pounds of waste per day or 0.75 tons of MSW per year.

Waste will be stored in dumpsters throughout the site until it can be transported to the waste handling facility by Penobscot County. Please refer to the letter from the County stating they have ability serve the development to dispose of the waste generated at the Millinocket Transfer Station.

Source: https://www2.calrecycle.ca.gov/wastecharacterization/general/rates

PENOBSCOT COUNTY
UNORGANIZED TERRITORY ADMINISTRATION
George Buswell, Director, gbuswell@penobscot-county.net
Tina Morrison, Deputy Director, tmorrison@penobscot-county.net
97 Hammond Street, Bangor, ME 04401
Phone: 207-942-8566
Fax: 207-561-6181

Matthew Polstein
NEOC
PO Box 669
Millinocket, ME 04462

November 31, 2024

Dear Matthew,

As Director of the Unorganized Territories Administration here in Penobscot County, we are charged with maintaining fire and ambulance services (EMS) and solid waste services to all unorganized territories, including T1-R8 Wels.

We contract with neighboring towns to provide these services. For T1-R8 Wels, we work closely with the Town of Millinocket for fire, EMS, and solid waste. We met with Fire Chief Cote and Public Works Director Bryan Duprey from Millinocket and spent some time reviewing the proposed development of the Hammond Ridge Master Plan. Thank you for your assistance. The officials and service providers now have sufficient knowledge of the proposed development.

Rule Sections 10.24 & 10.25, Q (Fire and Ambulance Protection)
We currently have a contract with the Town of Millinocket for these services, which we review annually. Changes can be made to that contract in the future as needed.

Rule Section 10.24 A (Solid Waste Disposal)
We just signed a new three-year contract with the Town of Millinocket for solid waste collection and disposal at their transfer station. This contract is also reviewed annually so that adjustments can be made in the future as needed.

In summary, any development in an unorganized township will require the Penobscot County, Unorganized Territories Administration to review services needed and research ways to provide these services as development happens.

Sincerely,

George Buswell

George Buswell, Director

SECTION 19

FLOODING

SECTION 19

FLOODING

FEMA has not completed a study to determine flood hazards for the project location. A flood map has not been published as of May 2024.

The proposed development is located at a minimum of 100 vertical feet above the adjected Millinocket Lake; moreover, flooding is not a concern.

SECTION 20

BLASTING

SECTION 20

BLASTING

Blasting is not anticipated for this project. This section is not applicable.

SECTION 21

AIR EMISSIONS

SECTION 21

AIR EMISSIONS

There will be no point or non-point sources of air emissions from this development.

SECTION 22

ODORS

SECTION 22

ODORS

There will be no significant odor generation on the Site as a result of the development; therefore, this section is not applicable.

SECTION 23

WATER VAPOR

SECTION 23

WATER VAPOR

There is no proposed source that will generate water vapor. This section is not applicable.

SECTION 24

SUNLIGHT

SECTION 24

SUNLIGHT

This project proposes no structures that will block access to direct sunlight on abutting properties; therefore, this section is not applicable.

SECTION 25

NOTICES

Abutter's List
NOI as Published
Certification of the Public Informational Meeting
Certified Mail List and Receipts

SECTION 25

NOTICES

Included in this section are the Abutter's List, NOI as Published, Certification of the Public Informational Meeting, and Certified Mail List and Receipts.

ABUTTER'S LISTS

ABUTTER'S LIST FOR T1 R8 WELS

PROPERTY OWNER	MAP/ LOT	STREET ADDRESS
Brian C Atwood	01-2.71	PO Box 623 Bingham, ME 04920-0623
Chelsea V Rogan	01-2.4, 01-2.31	64 River Road Jackman, ME 04945
Jane H Firth	04-3.1	PO Box 112 Millinocket, ME 04462
Kenneth A & Karen F Hansen	01-2.7	PO Box 540 Millinocket, ME 04462
Marion E Woodworth	01-2.5, 01-2.51	PO Box 540 Millinocket, ME 04462
Raymond K & Muriel C Woodworth	01-2.1, 01-2.6, 01-2.3, 01-2.2	PO Box 172 Millinocket, ME 04462
Richard J & Sandra L Befera	01-2.9	PO Box 391 Millinocket, ME 04462-0391
Scott A Riccio	040-3	2760 Hotel Road Auburn, ME 04210
Stephen A Hart	01-2.8	PO Box 649 Norfolk, MA 02056-0649
Timothy and Tina J Geoghegan	01-2.12	148 North Street Norfolk, MA 02056
Twin Pine Camps LLC	01-1.21, 01-1.22	PO Box 669 Millinocket, ME 04462
Katahdin Forest Management LLC	01-1	PO Box 38 Millinocket, ME 04462
No information available	04-4	No information available
Richardson Warren A Et Al Trustees	04-2	456 Swetts Pond Road Orrington, ME 04474
Hammond Ridge Development CO LLC Attn: Matthew Polstein	01-1.2	Applicant, no notification needed

ABUTTER LIST FOR T1 R9 WELS

PROPERTY OWNER	MAP/ LOT	STREET ADDRESS
David P, Elizabeth A & Shawn M Cyr	01-60, 01-1.4	PO Box 759 Millinocket, ME 04462
Derek L & Johnna L Pelletier	07-76.1	PO Box 346 Millinocket, ME 04462
Jane B Lewin	04-81.1, 07-81, 07-8.1	PO Box 928 Millinocket, ME 04462
Jonathan P & Madeline De Wet Steyn	07-83	5948 NW Theda Port Saint Lucie, FL 34983
Richard & Annamarie Soderman	07-80.2, 07-80.21	913 63rd Street West Bradenton, FL 34209
St Peter Harold W Sr & Maryann	07-80, 07-80.1	PO Box 303 Millinocket, ME 04462
Steven J & Brain J Pelletier	07-79	184 Ohio Street Millinocket, ME 04462
Tracy L King, Timothy D & Sonya L Wedgie	07-82	11 Labarca Lane Bangor, ME 04401
Twin Pine Camps LLC	25-61	PO Box 669 Millinocket, ME 04462
Katahdin Forest Management LLC	01-1	PO Box 38 Millinocket, ME 04462
No information available	25-59	No information available
No information available	25-24	No information available
No information available	25-23	No information available

PUBLIC NOTICE
NOTICE OF INTENT TO FILE

Please take notice that Hammond Ridge Development Company, LLC of P.O Box 669 Millinocket, ME 04462, 207-723-5438 is intending to file a Site Location of Development Act permit application with the Maine Department of Environmental Protection (Department), pursuant to the provisions of 38 M.R.S.A. §§ 481 thru 490 on or about January 10th, 2025. The application is for: The subdivision of approximately 51 acres into single-family residential lots and mixed-use lots, including the associated infrastructure and the existing Activity Center and Event Center on Hammond Ridge. At the following location: Located off Katahdin View Road in Township T1 R8 WELS in Penobscot County.

A Public Informational Meeting will be held at the New England Outdoor Center, Ktaadn Resorts Event Center, located at 380 Gravity Lane Millinocket, ME 04462 starting at 6:00 P.M. on January 2, 2025. The purpose of this meeting is to provide information about his project to any interested parties.

The Site Location application will include a request, pursuant to 12 M.R.S.A. § 685-B(1-A)(B-1), that the Land Use Planning Commission (Commission) certify to the Department that the development is an allowed use in the subdistricts in which it is proposed and that the development will comply with applicable Commission land use standards that are not considered in the Department's review.

The Site Location application, including the request for certification, will be filed for public inspection at the Department's office in Bangor and the Commission's office in Augusta and in East Millinocket during normal working hours. A copy of the application may also be seen on the Department's website[1], on the Commission's website (www.maine.gov/dacf/lupc/projects/site_law_certification/slc_links.shtml), at the Penobscot County office.

A request for a Department public hearing 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 on the Site Location application may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the Site Location application will be accepted by the Department throughout the processing of the application.

For Federally licensed, permitted, or funded activities in the Coastal Zone, review of the Site Location application shall also constitute the State's consistency review in accordance with the Maine Coastal Program pursuant to Section 307 of the federal Coastal Zone Management Act, 16 U.S.C. § 1456.

Written public comments on the Site Law application may be sent to the Department's regional office in Bangor where the application is filed for public inspection:

Attn. Jessica Damon,
jessica.damon@maine.gov,
207-941-457
MDEP, Eastern Maine Regional Office,
106 Hogan Road,
Bangor, Maine 04401

A request for a Commission public hearing on the request for certification and/or a petition for leave to intervene in any such hearing must be received by the Commission in writing no later than 20 days after the request for certification is found by the Commission to be complete and accepted for processing. The Commission will consider the degree of public interest when determining whether to hold a public hearing, but the decision whether to hold a hearing is at the Commission's discretion. If the Commission holds a public hearing, members of the public also may offer testimony at the hearing without formally intervening in the hearing, and/or may submit written comments until the close of the record. A request or petition that is not timely filed will be denied unless the requestor/petitioner shows good cause for failure to file on time. Filing may be by electronic mail or facsimile if followed by receipt of an original signed document within five working days. The Commission's provisions for intervention may be found in Chapter 5, section 5.13 of the Commission's rules, which are available at www.maine.gov/dacf/lupc/laws_rules/rule_chapters/additional_chapters.html.

If no public hearing is held, interested persons may submit written comments on the certification throughout the processing of the certification. Written public comments and questions on the request for certification may be mailed to the Commission's office in Augusta: Land Use Planning Commission, 22 State House Station, Augusta, ME 04333; or emailed to Benjamin Godsoe at benjamin.godsoe@maine.gov, or faxed to (207) 287-7439.

[1](www.maine.gov/dep/land/sitelaw/selected-developments/index.html)

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality, or Town or Plantation in the UT (if applicable), in which the project is located; and the County Office (if applicable); and
4. Provided notice of, if required, and held a public informational meeting on the Site Location application in accordance with DEP's Chapter 2, Rules Concerning the Processing of Applications, Section 14, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on JANUARY 2, 2025 (*Date*).

Approximately 10 members of the public attended the Public Informational Meeting.

Cliff Hershell — *Signature of Applicant or authorized agent*

January 2, 2025 — *Date*

Note: A copy of the Notice of Intent to File, the signed certification of the Notice of Intent to File, the list of abutters to whom the Notice was sent, and the names of and dates of publication of the newspapers in which the Notice was published must be included with the certification request materials to be submitted to the LUPC.

CERTIFIED MAIL LIST AND RECEIPTS

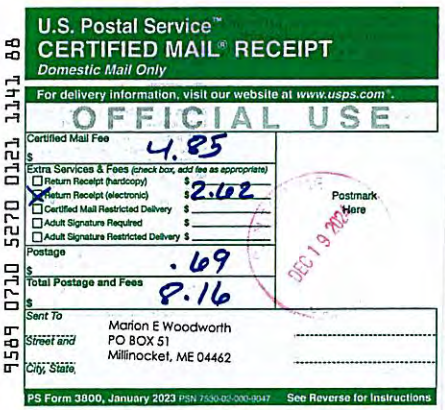
Brian C Atwood
PO Box 623
Bingham, ME 04920-0623

Chelsea V Rogan
64 River Road
Jackman, ME 04945

Jane H Firth
PO Box 112
Millinocket, ME 04462

Kenneth A & Karen F Hansen
PO Box 540
Millinocket, ME 04462

Marion E Woodworth
PO Box 540
Millinocket, ME 04462



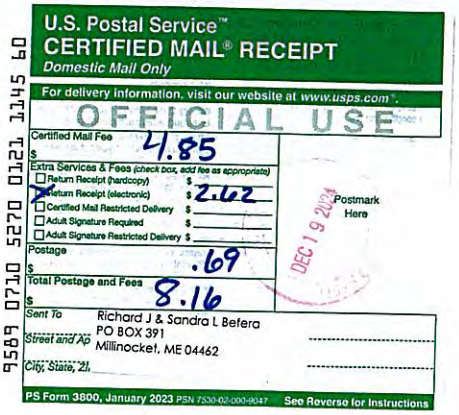
Raymond K & Muriel C Woodworth
PO Box 172
Millinocket, ME 04462

Richard J & Sandra L Befera
PO Box 391
Millinocket, ME 04462-0391

Scott A Riccio
2760 Hotel Road
Auburn, ME 04210

Stephen A Hart
PO Box 649
Norfolk, MA 02056-0649

Timothy and Tina J Geoghegan
148 North Street
Norfolk, MA 02056



Twin Pine Camps LLC
PO Box 669
Millinocket, ME 04462

Katahdin Forest Management LLC
PO Box 38
Millinocket, ME 04462

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456 Swetts Pond Road
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Jane B Lewin
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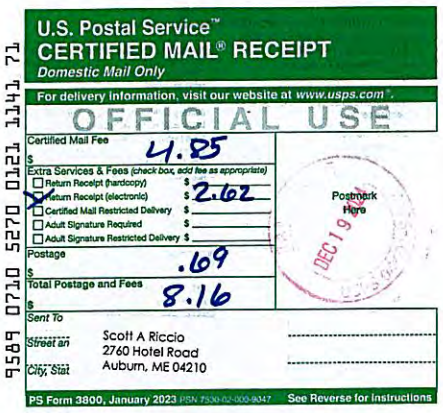
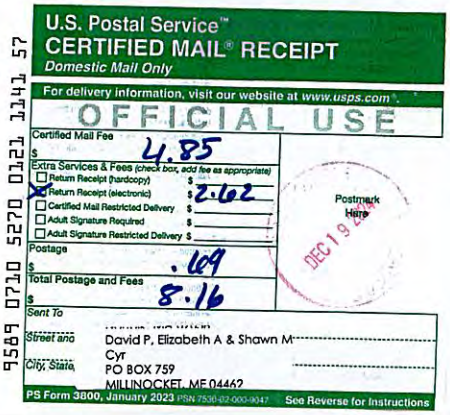
Jonathan P & Madeline De Wet Steyn
5948 NW Theda
Port Saint Lucie, FL 34983

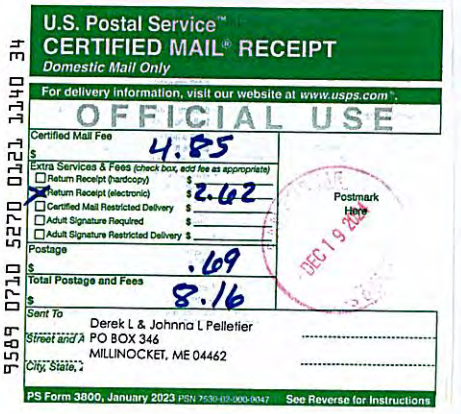
Richard & Annamarie Soderman
913 63rd Street West
Bradenton, FL 34209

Harold W Sr & Maryann St. Peter
PO Box 303
Millinocket, ME 04462

Steven J & Brain J Pelletier
184 Ohio Street
Millinocket, ME 04462

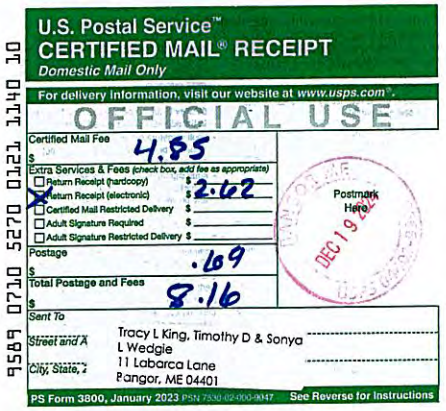


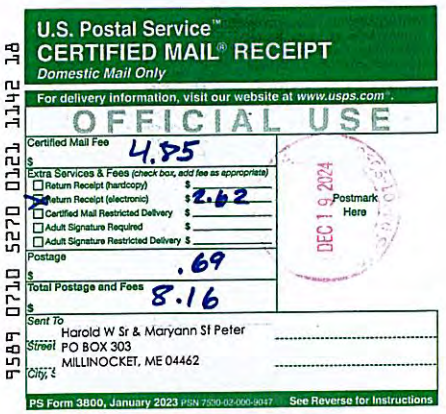




Tracy L King, Timothy D &
Sonya L Wedgie
11 Labarca Lane
Bangor, ME 04401

Penobscot County
97 Hammond Street
Bangor, ME 04401





SECTION 31

LUPC CERTIFICATION

Appendix A - Development Plans
Appendix B - Fee Waiver Letter
Appendix C - Site Photos
Appendix D - Deed Covenants and Legal Right of Access
Appendix E - Development Dimensional Requirements
Appendix F - Municipal Services Capacity Statement
Appendix G - Electrical Capacity Statements
Appendix H - Habitat Management Plan

SECTION 31

LUPC CERTIFICATION

31-A INTRODUCTION

The Hammond Ridge Development is a large-scale non-residential development and subdivision which is located in Township T1 R8 WELS in Penobscot County and T1 R9 WELS in Piscataquis County. Please refer to the Land Use Guidance Map provided below for a map showing the location of the proposed development. The proposed development is subject to Site Location of Development review by the Maine Department of Environmental Protection (MDEP). The MDEP may not issue a permit until the Land Use Planning Commission (LUPC) has certified that the proposed development is an allowed use within the subdistrict for which it is proposed and meets any LUPC land use standards that are applicable to the project and not considered under MDEP review. The following information demonstrates that the development complies with LUPC land use standards, specifically, those not considered by MDEP review.

31-B LUPC ZONING COMPLIANCE

The proposed development submitted an application for a zone change to the LUPC in 2021. The application led to the rezoning of 1,424 acres in the townships mentioned above. The proposed development will be located in the D-PD: Planned Development Zone. As per LUPC Chapter 10, Subchapter II, Section H.3, all proposed uses were included in the Development Plan in the 2021 petition to rezone and are allowed uses.

The proposed development is located in a prospective zone area; therefore, the dimensional requirements of the development were determined during the 2021 petition to rezone. The following table specifies the applicable dimensional requirements throughout the development as established during the rezoning process. For more information on proposed dimensions of lots, please refer to the Proposed Lot Dimensions in **Appendix E**.

TABLE 1 | DIMENSIONAL REQUIREMENTS

	REQUIRED
Minimum Lot Size	20,000 SF
Minimum Road Frontage (Residential & Mixed Use)	50 FT
Minimum Road Frontage (Non-residential)	100 FT
Road Setback	10 FT
Side and Rear Setback	10 FT
Maximum Structure Height (Residential & Mixed Use)	35 FT
Maximum Structure Height (Commercial & Recreational)	75 FT
Maximum Lot Coverage (Residential, Single Family detached)	50%
Maximum Lot Coverage (Residential, Single Family attached, Multifamily & Mixed Use)	50%

31-C LUPC SUBDIVISION APPLICATION EXHIBITS

The following corresponds to the LUPC's Subdivision Permit Application Exhibits.

31-C.1 DIRECTIONS AND LOCATION MAP

The majority of the site is located in T1 R8 WELS within Penobscot County with a small portion of the site located in T1 R9 WELS within Piscataquis County, just south of New England Outdoor Center. The site abuts the southern shoreline of Millinocket Lake. Primary access to the site is through an easement road (Katahdin View Road) directly opposite Deep Cove Road (formerly Fire Road 16).

Please refer to Section 1: Project Description of the Site Location of Development Act Permit Application (SLODA) for a Location Map.

31-C.2 PROJECT DESCRIPTION

Please refer to Section 1: Project Description of the SLODA for the project description.

31-C.3 DEED, LEASE, SALES CONTRACT, OR EASEMENT

Please refer to Section 2: Right, Title, or Interest of the SLODA for the property deed and current leases.

31-C.4 APPLICATION FEE

The application is classified as a Site Law Certification through the LUPC. A letter was provided to the Applicant stating that the fee for the first Site Law Certification for the development would be waived. Please refer to the letter in **Appendix B**.

31-C.5 FINANCIAL CAPACITY

Please refer to Section 3: Financial Capacity of the SLODA for the proposed project cost and financial capacity statement from Katahdin Trust Company regarding the Applicant's ability to fund the project.

31-C.6 TECHNICAL CAPACITY

Please refer to Section 4: Technical Ability of the SLODA for a statement regarding the Applicant and the consultant's technical ability.

31-C.7 NOTICE OF FILING

Please refer to Section 25: Notices of the SLODA for a copy of the Notice of Filing published in the paper and certified receipts for mailing the notice to the abutters.

31-C.8 LAND DIVISION HISTORY

Please refer to the following table identifying all Land Divisions since 1969:

TABLE 2 | LAND DIVISION HISTORY

LAND DIVISION HISTORY		
OWNER	**DATE OF SALE**	**LOT SIZE**
Great Northern Nekoosa Corporation	1969	Township
Great Northern Paper Inc.	1988	See lease in Section 2 of SLODA
Great Northern Paper Inc.	1991, 1992	Township
Maine Timberlands Company	2001	Township minus restrictions and FERC lands
Katahdin Timberlands, LLC	2003	Township minus restrictions and FERC lands
Hammond Ridge Development Company, LLC	2005	(+/-) 1,460 acres (of which (+/-) 85 acres are in Piscataquis County and (+/-) 38 acres have been conveyed to Twin Pine Camps, LLC
Twin Pines Camps, LLC	2005	(+/-) 7 acres
Twin Pines Camps, LLC	2007	(+/-) 31 acres
Matthew Polstein	2019	(+/-) 2 acres
Twin Pine Camps, LLC	2022	(+/-) 9 acres
Twin Pine Camps, LLC	2022	(+/-) 15.50 acres

31-C.9 STRUCTURES, FEATURES, AND USES

The following section discusses the proposed and existing site uses, conditions, structures, and infrastructure.

Site Uses

- The site is primarily designated as undeveloped/forestry lands. The existing trail system on the property has been in development since 2007. Approximately 244 acres of the area on the shore of Millinocket Lake was rezoned in 2007 to permit resort development and in 2018, another 32 acres were rezoned to allow for the development of the Event Center on Gravity Lane.
- The site has an existing network of roads and trails from previous timber harvesting activity.
- The Activity Center (Lot 1), which includes a microbrewery and is the base location for various traditional recreation activities (motorized and non-motorized) including cross-country skiing, snowshoeing, mountain biking, hiking, and snowmobiling, was permitted in 2019 and constructed in 2021.
- The Event Center, which includes space for small gatherings, weddings, and receptions, was permitted in 2019 and constructed in 2021.
- Community Solar Array which provides energy to the 20 cabins at the Twin Pines Resort at the New England Outdoor Center.

- The site will also include an operations building along with a combination of single-family houses, condominiums, and rental cabins along with the required open common space.
- Lots 2, 3 through 6, 8, and 9 are designated as mixed-use lots:
    - Lots 3 through 5: Primarily residential use. Proposed to be condominiums.
    - Lot 6: Two buildings for commercial use, with the exact function yet to be determined, but closely related to the development's operations. The remainder of the lot will have rental cabins.
    - Lots 8 and 9: Commercial use, featuring rental cabins for activities provided by the development.
    - Lot 2 is a mixed-use lot, with a primary focus on commercial use. The proposed 7,500 square-foot building will serve the operational needs of the development, potentially including laundry facilities, storage, and other services that are essential for the daily functioning of the development and its users.

Historic Site Uses

- Historically, the site has been used for forestry and has supported a cell tower or radio tower and traditional recreation uses including snowmobile trails and non-motorized recreation.

Site Conditions

- The current site conditions are rural. The site is forested with an existing network of roads and trails.
- The parcel has approximately 4,168 feet of frontage on Millinocket Lake. The currently proposed development does not have frontage along Millinocket Lake.
- There are no anticipated wetland impacts associated with this project.
- There are areas of steep topography throughout the site. The proposed development will be sited to avoid slopes 15% or greater to the greatest extent possible.
- The existing vegetation on-site is typical of the area, and likely includes vegetation that grows well on rocky well drained soils based on the NRCS soils report.
- In recent years, the property has been managed for forestry under a plan developed by Shelterwood Solutions. Prior to that, the site was managed for forestry by Great Northern Paper Company and wood cutting was typically high-grade wood.
- The Applicant has requested a site review from Maine Historic Preservation Commission (MHPC) (Section 8: Historic Sites in the SLODA), Maine Naturals Area Program (MNAP) (Section 9: Unseal Natural Areas in the SLODA), and Inland Fisheries & Wildlife (IFW) (Section 7: Wildlife and Fisheries in the SLODA) to determine any special natural areas, cultural/historic conditions or features, or any other relevant features.

Existing Structures

The following table provides the type of existing structures and necessary information required to satisfy this section. Please see the drawings included at the end of this section that show the location of each item within the property.

TABLE 3 | EXISTING STRUCTURES

TYPE OF STRUCTURE	YEAR BUILT	EXTERIOR DIMENSIONS (LXWXH)	NUMBER OF		TYPE OF FOUNDATION (FULL BASEMENT, SLAB, POST, ECT.)	DISTANCE (IN FEET) OF STRUCTURE FROM NEAREST:				
			BEDROOMS	PLUMBING OR WATER FIXTURES		ROAD	PROPERTY LINE	LAKE OR POND	RIVER OR STREAM	WETLAND
Activity Center	2021	See Plans	0	27	Slab	51	32	2,787	1,567	408
Event Center	2021	See Plans	0	26	Slab	27	94	2,013	1,432	40
Shed	2019	See Plans	0	0	Slab	53	765	4,440	3,196	200

Proposed Structures

As outlined in the "Site Uses" section above, the proposed subdivision will include 41 single-family residential lots. Additionally, there will be one commercial lot dedicated solely to maintenance, and nine mixed-use lots, which will feature a combination of residential and commercial uses. While the specific commercial uses are not yet determined, they will be designed to support the overall development. The mixed-use lots may include rental cabins, condominiums, and potentially small commercial establishments such as retail. At this stage, the exact balance of residential and commercial buildings on each lot, as well as their sizes, has not been finalized.

Please refer to the plans provided at the end of this application which illustrate the assumed layout for each lot, designed to maximize the developable envelope to a practical extent. The table below presents a conservative approach to the proposed structures with measurements based on the closest distances to key features such as roads, property lines, and wetlands. These measurements are not based on a single lot for the single-family subdivisions or a single building for the mixed-use lots, but instead consider the broader context of the entire development. Final details will be determined in future years when the future lot owners and the Applicant submit for a Residential or Non-Residential permit through the LUPC.

TABLE 4 | PROPOSED STRUCTURES

TYPE OF STRUCTURE	YEAR BUILT	EXTERIOR DIMENSIONS (LXWXH)	NUMBER OF		TYPE OF FOUNDATION (FULL BASEMENT, SLAB, POST, ECT.)	DISTANCE (IN FEET) OF STRUCTURE FROM NEAREST:				
			BEDROOMS	PLUMBING OR WATER FIXTURES		ROAD	PROPERTY LINE	LAKE OR POND	RIVER OR STREAM	WETLAND
Maintenance building	TBD	See Plans	0	TBD	Slab	82	58	4,625	1,480	1,245
Laundry Facility	TBD	See Plans	0	TBD	Slab	56	38	3,160	1,160	615
Lot 3 (Mixed-use)	TBD	TBD	2-3	TBD	TBD	36	20	2,925	840	480
Lot 4 (Mixed-use)	TBD	TBD	2-3	TBD	TBD	35	20	2,560	570	200
Lot 5 (Mixed-use)	TBD	TBD	2-3	TBD	TBD	40	20	1,990	250	155
Lot 6 (Mixed-use)	TBD	TBD	2-3	TBD	TBD	33	20	1,795	445	220
Lot 7 (Community Space)	TBD	TBD	0	TBD	TBD	36	20	2,030	475	270
Lot 8 (Mixed-use)	TBD	TBD	2-3	TBD	TBD	33	20	2,760	60	175
Lot 9 (Mixed-use)	TBD	TBD	2-3	TBD	TBD	33	20	2,470	960	380
Sub A	TBD	TBD	3	TBD	TBD	33	20	2,775	1,030	185
Sub B	TBD	TBD	3	TBD	TBD	33	20	1,260	260	1

Existing and Proposed Infrastructure

For infrastructure that is currently existing or is proposed to be altered or newly constructed, the following information has been provided: type, year built, proposed alterations, new dimensions, and setback distances in the table below.

Final public well locations have not yet been determined and are currently assumed. Well locations for single-family homes have been assumed at this time in order to achieve necessary setbacks from septic fields. Distances for the single-family home wells from major features are based on assumed locations. Water and sewer distribution systems have been assumed until final design of the septic fields is completed and actual well locations are determined.

Additionally, the layouts for the subdivided lots may change, and final details of the proposed infrastructure will be provided when future lot owners and/or the Applicant apply for a Residential or Non-Residential Development Permit with the LUPC.

TABLE 5 | EXISTING INFRASTRUCTURE

TYPE OF INFRASTRUCTURE AND USE	YEAR BUILT	EXTERIOR DIMENSIONS (LXW)	AVERAGE SLOPE (%)	MAX. SUSTAIN. SLOPE (%)	DISTANCE (IN FEET) OF STRUCTURE FROM NEAREST:				
					ROAD	PROPERTY LINE	LAKE OR POND	RIVER OR STREAM	WETLAND
Electric utility and fiber	TBD	5,210 linear ft total, 2,622 ft above ground and 2,588 ft underground	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cell Tower	2019	190 ft tall	N/A	N/A	104	585	4,360	3,270	205
Gravel Pit (Black Cat Road) - Residential/commercial	Between 2007-2011	500 ft by 350 ft	N/A	N/A	0	95	1,635	4,642	4,642
Gravil Pit (Katahdin View Drive) to be reclaimed – residential/ commercial	Between 2007-2011	240 ft by 150 ft	N/A	N/A	85	60	4,310	1,335	2,140
Katahdin View Drive – residential/ commercial	Pre 1980*	3,900 ft by approx. 18 ft	6%	8%	0	0	1,375	220	220
Black Cat Road – residential/ commercial	Pre 1980*	10,000 ft by approx. 15 ft	5%	10%	0	0	270	0	0
Gravity Lane – residential/ commercial	Pre 1980*	4,256 ft by approx. 18 ft	5%	10%	0	0	960	1,040	0
Activity Center Parking - commercial	2021	Approx. 162 ft by approx. 170 ft	4%	4%	65	47	2,912	620	390
Activity Center Well 1	2021	N/A	N/A	N/A	275	255	3,120	850	330
Activity Center Well 2	2021	N/A	N/A	N/A	378	360	3,312	990	265
Event Center Parking – commercial	2021	Approx. 264 ft by 85 ft	6.2%	6.6%	0	165	2,215	1,365	1,365
Event Center Well - commercial	2021	N/A	N/A	N/A	48	112	2,345	1,295	1,295

*Roads have been enhanced over the years.

TABLE 6 | PROPOSED INFRASTRUCTURE

TYPE OF INFRASTRUCTURE AND USE	YEAR BUILT	EXTERIOR DIMENSIONS (LXW)	AVERAGE SLOPE (%)	MAX. SUSTAIN. SLOPE (%)	DISTANCE (IN FEET) OF STRUCTURE FROM NEAREST:				
					ROAD	PROPERTY LINE	LAKE OR POND	RIVER OR STREAM	WETLAND
Road A – residential/commercial	TBD	2,447 ft by 24 ft (18-foot travel way with two-foot shoulders)	1.27%	1.5%	0	13	2,470	485	460
Road B – residential/commercial	TBD	1,878 ft by 24 ft (18-foot travel way with two-foot shoulders)	2.73%	7.28%	0	13	1,980	340	340
Road C – residential/commercial	TBD	706 ft by 24 ft (18-foot travel way with two-foot shoulders)	4.50%	7.70%	0	13	2,080	790	145
Road D – residential/commercial	TBD	645 ft by 24 ft (18-foot travel way with two-foot shoulders)	3.26%	6.15%	0	13	2,408	785	190
Wells for lots 3, 4, 5, 6, 7, 8, 9, 1 – residential/commercial	TBD	N/A	N/A	N/A	25	60	3,270	1,040	1,035
Wells for lots 1-41 single family homes - residential	TBD	N/A	N/A	N/A	16	5	1,370	700	100
Activity Center parking lot expansion – commercial	TBD	Approx. 140 ft by 185 ft	4%	4%	52	35	3,015	1,275	400
Maintenance Garage parking lot - commercial	TBD	Approx. 235 ft by 200 ft	2.4%	2.4%	62	45	4,400	1,340	1,300
Lot 3 parking lot – residential/commercial	TBD	Approx. 175 ft by 42 ft	3%	4%	70	55	2,950	1,050	555
Lot 4 parking lot – residential/commercial	TBD	Approx. 300 ft by 42/54 ft	2%	2.3%	95	75	2,645	285	275
Lot 5 parking lot – residential/commercial	TBD	Approx. 600 ft by 42/54 ft	4%	5%	125	105	2,090	200	190
Lot 6 parking lot – residential/commercial	TBD	Approx. 240 ft by 42 ft	2%	2%	90	80	1,865	595	270
Lot 8 parking lot – residential/commercial	TBD	Approx. 400 ft by 42 ft	2%	3.65%	42	30	3,030	1,385	225
Lot 9 parking lot – residential/commercial	TBD	Approx. 220 ft by 18 ft and 220 ft by 42 ft	2.5%	4%	0	0	2,455	1,270	315

31-C.10 SITE PLANS

Please refer to the Site Plan Set included at the end of the SLODA application.

31-C.11 SITE PHOTOGRAPHS

Please refer to **Appendix C** for a photolog of the existing development and project areas.

31-C.12 SITE ACCESS AND LEGAL RIGHT OF ACCESS

The following outlines site access and the legal right of access to the proposed subdivided lots.

Site Access

The site will be accessed from Katahdin View Road (primary access) and Black Cat Road (secondary access). Please see the Existing Roadways table and the Proposed Roadway table below.

TABLE 7 | EXISTING ROADS

ROAD NAME	OWNER	ROAD LENGTH	TRAVEL SURFACE WIDTH/ ROW WIDTH	ROAD SURFACE	LIMITATIONS
Millinocket Road	Public	14,000 ft	Approx. 20 ft wide	Gravel	None
Katahdin View Road	Hammond Ridge (private)	3,900 ft	Approx. 18 ft. wide	Gravel	None
Gravity Lane	Hammond Ridge (private)	4,256 ft	18 ft feet wide with 3 ft shoulders	Gravel	None
Black Cat Road	Hammond Ridge (private)	10,000 ft	Approx 15 ft	Gravel	None

TABLE 8 | PROPOSED ROADS

ROAD ID	OWNER	ROAD LENGTH	TRAVEL SURFACE WIDTH/ ROW WIDTH	ROAD SURFACE	LIMITATIONS
A	Hammond Ridge (private)	2,447'	18' / 50'	Gravel	None
B	Hammond Ridge (private)	1,878'	18' / 50'	Gravel	None
C	Hammond Ridge (private)	706'	18' / 50'	Gravel	None
D	Hammond Ridge (private)	645'	18' / 50'	Gravel	None

*Proposed roads have not officially been named at this time

The proposed project will not include any development that will be accessed by water.

Legal Right of Access

Lot owners will have legally protected access to Millinocket Road. Please refer to **Appendix D** for a draft document that will be enacted to ensure such owners with legal rights of access.

Roadway Maintenance and Drainage Control

The private roads will be managed and maintained, both seasonally and when necessary, by the Applicant or its assigns. All proposed roads are crowned, and stormwater is collected in roadside swales. From the swales stormwater is directed into forested buffers. Culverts are proposed at driveway intersections and low points to help convey water to the forested buffers.

31-C.13 VEHICLE CIRCULATION, ACCESS, AND PARKING

The following section describes vehicle circulation, access, and parking for the proposed development.

General Circulation

The proposed development includes provisions for vehicular access to and within the site. The development will be primarily accessed by Katahdin View Drive which is an 18-foot-wide access road that services the subdivision, rental units, Activity center, Event Center and other amenities. Secondary access to the site is provided off of Black Cat Road.

The development is proposing to construct new roadways to facilitate transportation throughout the development. All proposed roadways are 24 feet wide (10-foot travel lanes with two-foot shoulders) in width to accommodate emergency services vehicles and provide turnarounds and turnouts where necessary. All roadway intersections have been designed at an angle greater than 60 degrees to promote the driver's visibility and safety. Roads are designed with access points located no more than a quarter mile apart. For details on how this standard is met, please refer to the map provided in **Appendix E**.

Please refer to Section 31-C.12 for a breakdown of the proposed roads. Please also refer to the Proposed Site Plan included at the end of the SLODA which delineates all proposed and existing roadways intended to be used by the development.

Parking

The proposed development uses a combination of angled and perpendicular parking spaces to provide guests, residents, and employees with a sufficient amount of parking. The development provides a total of 251 parking spaces to support the proposed mixed uses. Additionally, each residential subdivided lot will include two parking spaces. The development is not proposing any additional buffering to screen the parking areas, but clearing will only be performed were required. The site is covered with dense vegetation which will provide significant buffering from any public roadways.

31-C.14 SUBDIVISION LAYOUT AND DESIGN

The development proposes the subdivision of 41 new, single-family lots and nine mixed use lots. The lots are classified as a "FlexDesign" subdivision and are located outside of the shoreland zone as required by Table 10, Q-1 of the LUPC's standards. The proposed subdivided lots are located along private access roads that branch off Katahdin View Drive. Owners will have legally protected access to their property. The entirety of the Hammond Ridge Development, including the proposed subdivision, intends to harmoniously fit into the character of the region by using natural building materials and finishes. The subdivision is surrounded by a network of recreational trails along with the amenities provided by Hammond Ridge Development, which lot owners will have access to. Please refer to the Proposed Site Plans included later in this application for the locations of the buildings envelops, supporting roads and trails, and lot lines of the proposed subdivision.

Subdivision Acreage

The following table specifies the total, developed, conserved, and retained acreage of the proposed subdivision within the Artisan Village Subarea.

TABLE 9 | SUBDIVISION ACREAGE

SUBDIVISION ACREAGE	
TYPE	**QUANTITY**
Developed	72 +/-
Conserved	73 +/-
Retained	1279 +/-
Total	1424 +/-

Layout and Design

The proposed development will include 41 subdivided, single-family lots and nine mixed use lots and one commercial lot. Please refer to **Appendix E** for tables which specify the lot number, average dimensions, lot size, building envelope size, road frontage, an indication of whether the lot will be developed or undeveloped, and a description of the proposed use. None of the proposed lots will include any shore frontage and the building envelopes are not square; therefore, those dimensions were excluded from the table.

FlexDesign Subdivisions

The following response aligns with the LUPC's Chapter 10, Section 25, Subsection Q, Item 4(d) for FlexDesign Subdivision Layouts.

A. Good Fit

- *Sustainable Tourism and Economic Prosperity*: One of the significant benefits of the proposed development is its potential to enhance sustainable tourism. By offering recreational opportunities near a local municipality, it will alleviate pressure private woodlands around the development that are used for recreation as the provided trail network on

the site gives users options other than going to an active commercial timber harvesting area. This development attracts tourists to the area, supporting local businesses such as restaurants, shops, and recreational services. Additionally, the development encourages year-round residency by providing high-speed internet and essential services for remote workers and new businesses, fostering long-term economic growth in the region.

- *Habitat and Wildlife Considerations:* The collaboration with David Irving, a licensed Forester to prepare the Habitat Management Plan shows the development's commitment to sustainability by enhancing habitats, additional buffers around the corridor, and implementing appropriate shoreline setbacks to protect natural resources. Please refer to the Habitat Management Plan provided in **Appendix H**.
- *Integration with the Landscape:* The design of the subdivision respects the existing land character by avoiding ridgeline development, adhering to height standards, and using building materials compatible with the surrounding environment. This careful integration minimizes the footprint and complexity of infrastructure, ensuring the development fits harmoniously within the landscape.

B. Limited Resources

- *Efficient Land Use*: The location of the subdivision near existing infrastructure, such as Katahdin View Drive and Millinocket Road, reduces the need for new infrastructure, ensuring efficient land use and minimizing environmental impact. The proximity to these roads also facilitates emergency services access, ensuring public health and safety.
- *Expansion of Trails and Public Access:* The development will expand the region's trail network to accommodate both residential and public use. The integration of the subdivision with the expanded trail network allows for efficient land utilization, while minimizing the need for new infrastructure and ensuring that residents can enjoy the natural beauty of the area.

C. High Value Resources

- *Conservation and Scenic Preservation:* The proposed development prioritizes the protection of high-value resources like Millinocket Lake and Mount Katahdin by respecting key ecological areas. The development's design avoids known significant wildlife habitats, as confirmed by Maine Inland Fisheries and Wildlife, and avoids essential habitats on the project site. This ensures that the high-value resources in the region remain protected while still allowing for development.
- *Shoreline Setbacks and Habitat Protection:* Through collaboration with state agencies, the development has established appropriate shoreline setbacks, enhanced habitat protection, and expanded wildlife corridors, ensuring long-term preservation of these vital resources. The development also emphasizes minimizing impacts on the viewshed and preserving the scenic quality of the region.

- *Educational Opportunities:* The development will promote sustainable practices through educational programs and partnerships with organizations like New England Outdoor Center and Katahdin Area Trails. These opportunities will help raise awareness about conservation and environmental stewardship, fostering a culture of sustainability among residents and visitors.

D. Recreational Resources

- *Enhancement and Expansion of Recreational Resources:* The development will enhance existing recreational resources by expanding the trail network. This expansion supports non-motorized recreational activities, fostering a healthy and active lifestyle for visitors and residents.
- *Integration with Existing Infrastructure:* The proposal effectively integrates into the existing trail network, enhancing pedestrian access and activity along the trails. The development provides residents with easy access to a variety of recreational opportunities, including snowmobiling and hiking, while minimizing the strain on other regional recreation areas.
- *Activity Center and Education:* The Activity Center will offer recreational equipment for on-site use and provide training and educational resources for outdoor activities. Through collaborations with the New England Outdoor Center and Katahdin Area Trails, the development will offer visitors educational opportunities, promoting the region as an eco-tourism hub and encouraging sustainable recreational practices.
- *Expanding Capacity for Recreation:* The planned expansion of the trail network and recreational facilities will meet growing demand, ensuring that residents and visitors have access to quality recreational opportunities. The design accommodates both public and residential use of trails, supporting a diverse range of outdoor activities.

E. Adequate Infrastructure

- *Efficient and Resilient Infrastructure:* The development's infrastructure is designed for resilience, ensuring access and functionality during extreme weather events. The proximity to existing roads and services ensures efficient emergency response, enhancing public health and safety.
- *Reduction in Traffic Congestion:* The development will help reduce traffic on Black Cat Road by altering local traffic patterns and providing better access routes to the subdivision, improving transportation efficiency in the region. This change contributes to both the operational efficiency of local roads and improved quality of life for residents.

The Hammond Ridge Development successfully meets the FlexDesign subdivision objectives through a thoughtful approach that balances environmental protection, economic development, and recreational opportunities. The integration of the development into the existing trail network, emphasis on sustainable infrastructure, and

commitment to preserving high-value resources demonstrate a well-designed subdivision that enhances the local economy, protects the environment, and promotes healthy, active living.

By working with state agencies on habitat protection and environmental conservation, expanding recreational facilities, and supporting the local economy through tourism and remote work opportunities, the development provides a sustainable model for growth that respects the region's unique character and natural beauty.

Future Development Objectives

Hammond Ridge Development envisions development beyond what is proposed in this application. Please refer to the LUPC's *Hammond Ridge Planned Development Subdistrict (D-PD) Development Plan* for a future development plan. The following paragraph describes the conceptual, long-range objectives of all future development.

The entirety of the Hammond Ridge Development will be built and operated in a fashion that is as sustainable as possible; environmentally and economically. The development will be built in a way that honors the spectacular natural beauty of Mount Katahdin, the West Branch Region, and Millinocket Lake at the same time honoring the people that live in and visit the area. The design, development, and operation of the resort will seek harmony with the natural environment as it highlights the local culture and heritage of the region and creates a sense of community for guests and residents alike. Opportunities to increase awareness of the surrounding environment and to strengthen the human connection with nature will be ever-present. The Applicant intends to support the resort and the region with an array of traditional and non-traditional amenities and services that utilize the area's rugged natural beauty and the resort's community setting to add value to the guest experience and create quality employment, retail, and learning opportunities.

31-C.15 COMMON OPEN SPACE

The Hammond Ridge Development is required to provide 50% of its net developable area as open common space. The total developed area for the proposed subdivision is approximately 72 acres, which includes lots and roads. The proposed open space is approximately 73 acres, bringing the total area associated with the development to 145 acres. This results in 50.34% of the area being designated as open space. Please refer to the map in **Appendix E** for the delineation of the open common space areas.

Open common space will be owned and maintained by Hammond Ridge Development Company, LLC. Please refer to **Appendix D** for a draft deed restriction guaranteeing the Applicant will preserve, maintain, and manage the proposed open common space. Future lot owners will have legally protected rights to the areas designated as open common space.

31-C.16 SUBDIVISION LOT DEED OR LEASE COVENANTS

The proposed subdivision will include rights of access to private roads, recreational trails, and open commons space. Deed restrictions will be provided to guarantee development and clearing only takes place within the lot setbacks shown on the Proposed Site Plan. Please refer to **Appendix D** for the draft Declaration of Protective Covenants, Common Easements, and Road Maintenance Agreements.

31-C.17 FIRE, POLICE, AND AMBULANCE PROTECTION

The development is located within an unorganized territory and is; therefore, within the jurisdiction of the Unorganized Territories Administration of Penobscot County. Refer to **Appendix F** for a letter verifying that Penobscot County Emergency Services has the capacity to serve the proposed development.

31-C.18 SOLID WASTE DISPOSAL

Please refer to Section 18: Solid Waste of the SLODA for details on the proposed types and amounts of waste. Additionally, a letter from the Penobscot County Unorganized Territory Administration is included, confirming their ability to provide the necessary services for hauling waste to the Millinocket Transfer Station.

31-C.19 ELECTRICITY AND TELEPHONE SERVICE

The electricity and telephone service for the project site will be provided by Versant Power and Consolidated Please see the letter from Versant Power outlining their available capacity and willingness to collaborate with the Applicant as the development progresses. Additionally, please refer to the confirmation from Consolidated Communications regarding their ability to serve the development in **Appendix G**.

31-C.20 WATER SUPPLY

Please refer to Section 16: Water Supply of the SLODA for a review conducted by a licensed geologist on the available water supply to support the development.

31-C.21 WASTEWATER DISPOSAL

Please refer to Section 17: Wastewater Disposal of the SLODA for information on the wastewater disposal requirements.

31-C.22 EXTERIOR LIGHTING

The exterior lighting plan for the proposed development has been designed to minimize light pollution and reduce impacts on the surrounding area. All proposed lighting fixtures will be full cutoff, as defined by the Illuminating Engineering Society of North America (IESNA), ensuring that no more than 2.5% of the light is directed above the horizontal plane of the fixture. This design helps prevent upward light spill and minimizes any potential skyglow.

For non-residential areas within the development, lighting is equipped with motion sensors and timers, ensuring that lights are only activated when necessary. After business hours, all non-essential lighting—such as decorative, display, and parking lot lights automatically

turn off, leaving only essential lighting for security purposes. The motion sensors and timers limit lighting to times of actual need, helping conserve energy and reduce light pollution. The lighting will be carefully located and directed to focus only on the intended areas, avoiding spillover onto neighboring property or roadways. This design prevents strong, dazzling light or glare from interfering with driver visibility, promoting safety for all.

With this approach, the development will provide adequate lighting while maintaining environmental responsibility and reducing unnecessary light intrusion.

31-C.23 NOISE

The proposed development will include single-family residential homes, rental cabins, and condominiums to support the recreational activities available on and around Hammond Ridge. Additionally, light commercial uses are planned. It is not anticipated that any of the proposed uses will generate significant noise; therefore, the development is expected to comply with regulatory noise standards at property lines and sensitive areas.

31-C.24 HARMONIOUS FIT AND NATURAL CHARACTER

The proposed development will not be visible from the nearby scenic byway due to the site's topography and its dense forest cover, which naturally shield the area from view. While the development may be visible from private roadways connecting to the trails and the Activity Center and Event Center, measures have been incorporated to preserve the scenic character of the region and create visual buffers. Parking areas for both the Activity Center and Event Center are strategically positioned to avoid prominent views of Millinocket Lake and Mount Katahdin.

Additionally, road clearing will be minimized, and existing trees and vegetation will be preserved to provide a natural visual barrier, mitigating any potential scenic impacts. Parking will be staggered around the proposed facilities to prevent large, open expanses of cleared land, helping to retain the site's natural appearance.

The nature of the proposed development promotes environmental sustainability while encouraging social and cultural values that respect and preserve the existing site characteristics. Hammond Ridge is committed to protecting the scenic landscape of the Millinocket Lake region by ensuring that the proposed developments blend harmoniously with the surrounding environment. This includes maintaining a distance between the development and the shoreland zone, avoiding hilltop or ridgeline development, adhering to height restrictions, and utilizing building materials that complement the natural features of the area.

All existing development on the site has been carefully planned to avoid disrupting the viewsheds from Millinocket Lake, Baxter State Park, and the surrounding scenic areas. The proposed development will continue this practice with thoughtful siting and design that minimizes its visual presence while preserving the scenic character of the region.

31-C.25 RARE OR SPECIAL PLANT COMMUNITIES AND WILDLIFE HABITAT

Letters have been sent to MNAP and MDIFW requesting their review of the site to assess any potential impacts to plant life or wildlife habitats from the proposed development. Please refer to Sections 7 and 9 of the SLODA for the responses from the review agencies, which confirm that no impacts were identified.

31-C.26 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

A letter has been sent to MHPC requesting their review of the site to assess any potential impacts to archaeological or historical resources from the proposed development. Please refer to Section 8: Historic Sites of the SLODA for the response from the review agency, which confirms that no impacts were identified.

31-C.27 SOIL SUITABILITY AND MAPPING

Please refer to Section 11: Soils of the SLODA for necessary soil information.

31-C.28 WATER QUALITY

The development does not include any commercial or industrial uses that would introduce point sources of groundwater or air contamination. As such, there are no activities within the scope of the project that would discharge pollutants into the groundwater or air in a manner that would violate state and federal air quality laws or water quality standards.

In terms of groundwater quality, the proposed residential development will not result in any degradation of the existing conditions. Specifically, the project will not cause the groundwater to fall below the physical, biological, chemical, or radiological standards for raw drinking water as defined by the Maine State Drinking Water Regulations. Additionally, the development will not cause groundwater quality to worsen if the pre-development conditions already fall short of these standards.

For surface water protection, the development proposes the use of best management practices (BMPs) for both erosion control and stormwater treatment. These practices are designed to reduce the risk of pollutants entering surface water bodies, ensuring that the development does not contribute to a discharge that would cause any surface water body to fail to meet its state classification or violate state or federal water quality standards. Erosion control measures will prevent soil erosion during construction and post-construction activities, while stormwater treatment systems will manage runoff to minimize pollutant discharge. These BMPs will help maintain water quality in line with the applicable state regulations, safeguarding both the existing and designated uses of nearby water bodies.

31-C.29 EROSION, SEDIMENTATION, AND DRAINAGE CONTROL MEASURES

This development project is designed to minimize soil disturbance and effectively control erosion throughout all construction phases. The construction activities, as outlined in the proposed timeline (see Section 1: Project Description of the SLODA) and Site Plans, will incorporate the following measures to ensure proper management of soil, erosion, and sedimentation.

A. Construction

The project will proceed in several key phases:

- *Clearing, Grading, and Construction:* Clearing will be minimal to preserve vegetation and reduce soil exposure. Grading will follow existing grades to minimize cut and fill, with some localized adjustments, such as in parking lots, where slopes will be no more than 5% for practicality. These modifications will be kept minimal but will ensure functional design. During construction, the focus will be on stabilizing soil and controlling erosion through BMPs, especially in areas near sensitive water bodies, wetlands, or natural drainage systems.
- *Erosion Control Measures:* Erosion control practices, including erosion control mix berms, will be implemented before any grading begins and will be regularly inspected. Disturbed areas will be promptly stabilized, and soil stockpiles will be stored a safe distance from water bodies, wetlands, or drainage systems (at least 50 feet) to prevent runoff. BMPs will be maintained throughout construction and will extend into the post-construction phase to ensure long-term stabilization.
- *Post-construction Stabilization:* After construction, disturbed areas will be seeded or otherwise stabilized to prevent erosion, particularly at the end of the construction season. Final landscaping will include the establishment of native vegetation to restore the landscape and minimize long-term soil exposure.

B. Minimizing Soil Disturbance, Erosion, and Sedimentation

Key strategies to minimize soil disturbance and control erosion during construction include:

- *Minimizing Soil Disturbance*: Grading will follow existing contours to minimize the volume of soil disturbed. In areas where cuts or fills are required, gentle slopes (maximum 5%) will be used to reduce soil disturbance while maintaining the design's functionality.
- *Erosion Control*: Temporary erosion control measures (e.g., erosion control mix berms, mulch, straw blankets) will be implemented immediately. Disturbed areas will be stabilized quickly, particularly near water bodies and wetlands. In areas with slopes exceeding 15%, additional stabilization methods will be used, including planting ground cover.
- *Fill Material*: Fill materials will locally sourced and will be clean of debris, toxic materials, and other trash to comply with typical best construction practices.

Drainage Provisions and Erosion Control Measures

Culverts will be placed in low spots along the road to direct runoff away from the roadway and towards vegetated buffers, which will treat and filter stormwater before it reaches sensitive areas, such as wetlands. This strategy promotes natural infiltration and reduces the risk of sedimentation and erosion. The culverts and buffers will be maintained throughout the construction phase and beyond to ensure effective stormwater management.

Ongoing Maintenance of Erosion and Sedimentation Controls
The project will include continuous maintenance of erosion and sedimentation controls throughout construction and after completion. Daily inspections will ensure that erosion control measures function as intended, with necessary adjustments made promptly. After construction, disturbed areas will be seeded or stabilized to prevent erosion, and drainage features like culverts and ditches will be regularly inspected and maintained to ensure long-term effectiveness. For a full Erosion and Sedimentation Control Plan, please refer to Section 14: Basic Standards of the SLODA.

31-C.30 ASSOCIATION BYLAWS

At this time, the Applicant is going to maintain the development. If the Applicant determines that a Homeowners Association is needed in the future, a copy of the Association documents will be provided at that time.

31-C.31 ROADWAY CONSTRUCTION AND UPGRADES

Please refer to Section 31-c.12 for tables outlining information regarding existing and proposed roads within the development. In addition, please refer to the Proposed Plan Set for information regarding the typical road cross-section, proposed materials, slopes, shoulders, right-of-way limits, road profiles, and more.

Traffic control measures, such as road closures and flagging, will be in place to manage both construction vehicles and public traffic safely. Dust and debris control methods, such as water spraying, will minimize airborne particles, and adequate lighting and signage will ensure safe conditions for nighttime work. Safety gear and emergency response procedures will also be established on-site, and accessible routes for quick emergency intervention which will be the responsibility of the Contractor.

To protect nearby infrastructure, such as wells, sewage disposal systems, and structures, a thorough site assessment will identify sensitive features and establish buffer zones around them. Construction activities, including grading and excavation, will avoid these areas to prevent interference or contamination. Erosion and sedimentation control measures, such as erosion control mix berms and other BMPs, will be used to protect water sources.

31-C.32 ROADWAY MAINTENANCE

The Applicant will retain ownership and responsibility for the maintenance of the private roadways and lots within the development for the foreseeable future. If, in the future those responsibilities and management are transferred to a Homeowner's Association, those documents will be provided to the LUPC for review. Regular maintenance will be conducted to ensure the continued functionality and safety of the roads, as well as to protect surrounding infrastructure, including wells, sewage disposal systems, and structures. Maintenance tasks will include grading gravel roadways and shoulders as needed, regularly inspecting and maintaining ditches, swales, and culverts, and removing any obstructions or accumulated sediments. Vegetated ditches and swales will be mowed no more than twice a year, with vegetation kept at a height of no less than six inches.

Other tasks will include removing sediment from ditches, cleaning open-top culverts, and ensuring that stormwater runoff is not obstructed by sediment in the shoulder. The maintenance provisions will also involve monitoring the health of stormwater management features, including the repair of any dislodged riprap or underlying filter fabric. This maintenance plan will help protect nearby wells, sewage systems, and structures from potential harm due to sedimentation, erosion, or runoff. The Applicant will ensure these activities are carried out in compliance with best management practices and will remain proactive in maintaining the roadways and related infrastructure.

31-C.33 PHOSPHORUS CONTROL

Please refer to Section 12: Stormwater Management of the SLODA for a narrative outlining the treatment of stormwater in accordance with MDEP's stormwater laws.

31-C.34 LIQUIDATION HARVESTING CERTIFICATION

There has not been any timber harvesting within the last five years; therefore, this standard is not applicable.

31-C.35 ADDITIONAL INFORMATION

Wildlife Corridor

As part of the permit application, the proposed wildlife corridor will meet the 100-acre minimum requirement outlined in the Development Plan, excluding any community spaces. This corridor will be designed to align with the permitted use of "wildlife and fishery management practices" as described in Subdistricts I, II, and III, specifically in accordance with Subarea III, which permits forest management activities, motorized and non-motorized trail development, and access roads.

The wildlife corridor is intended to enhance and protect habitats for various wildlife species, and the recreational trail system proposed within the corridor will be carefully planned to support, not conflict with, these habitat management objectives. The development of the trail network will serve to improve habitat diversity by increasing spatial heterogeneity and creating permanent gaps and edge habitats beneficial to species like the chestnut-sided warbler and white-throated sparrow. These species thrive in such conditions, which will be maintained through the managed creation of canopy openings, typically less than 10%, mimicking natural disturbances like wind events and tree mortality.

Additionally, the forest in the wildlife corridor areas is mature, and the need for significant tree cutting will be minimal, ensuring that the habitat management goals are prioritized. The surface of the cross-country ski trails will include a carpet of herbaceous species, such as clover and rye, which will provide forage for birds and mammals. Soft edges along the trails will support raspberry and blackberry growth, enhancing pollinator habitats for various insects.

Please refer to the Habitat Management Plan provided in **Appendix H** that outlines wildlife management practices and how the trail system integrates with the wildlife management objectives. The management plan also demonstrates that the recreational trails, while contributing to the area's recreational value, will enhance, rather than detract from, the habitat values outlined in the management plan, ensuring the wildlife corridor's primary function is maintained.

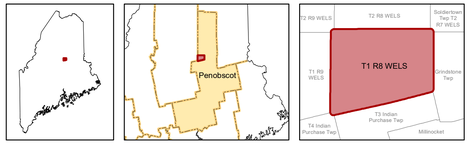
In summary, the proposed trail system will be carefully planned and constructed to avoid sedimentation, maintain habitat quality, and promote biodiversity. The trails will complement the wildlife corridor by enhancing habitats for species that thrive in edge and gap conditions, supporting both recreational and ecological objectives without compromising the integrity of the habitat management areas.

APPENDIX A

DEVELOPMENT PLANS

T1 R8 WELS

Penobscot County



Land Use Guidance Map

Department of Agriculture, Conservation and Forestry

Maine Land Use Planning Commission

Legend

DEVELOPMENT SUBDISTRICTS

- D-GN: General
- D-PD: Planned
- D-RS: Residential

MANAGEMENT SUBDISTRICTS

- M-GN: General

PROTECTION SUBDISTRICTS

- P-FP: Flood Prone
- P-GP: Great Pond
- P-SL1: Shoreland - 250'
- P-SL2: Shoreland - 75'
- P-WL1: Wetlands of Special Significance
- P-WL2: Scrub-shrub Wetlands
- P-WL3: Forested Wetlands

For complete descriptions of those areas included within the various subdistricts, and the associated regulations, refer to the Commission's Chapter 10 rules: Land Use Districts and Standards. Where any inconsistencies exist between the district boundaries, as shown on this map, and those described by the Commission's Land Use Districts and Standards, the latter shall govern.

For simplicity, this map does not show all the Wetland Protection Subdistricts for areas identified pursuant to Section 10.23,N,2 such as the beds of rivers, lakes, and other water bodies, and freshwater wetlands within 25 feet of stream channels. Nevertheless, these areas are within P-WL Subdistricts. In addition, this map does not show the Shoreland Protection Subdistricts along stream channels flowing through wetlands. Nevertheless, these areas are within P-SL2 Protection Subdistricts. If the locations of flowing waters or bodies of standing water existing on the ground differ from those shown on the map, then, pursuant to 12 M.R.S., Section 685-A(2)(G), P-GP, P-RR, P-SL, P-WL, and other subdistrict boundaries that are based upon the location of such waters shall, as appropriate, be deemed to follow the flowing water or body of standing water existing on the ground.

This Land Use Guidance Map was adopted by the Maine Land Use Planning Commission on **01/09/2002**, and became effective on **01/24/2002**.

This map is certified to be a true and correct copy of the Official Land Use Guidance Map of the Maine Land Use Planning Commission.

By: _____, Director, Maine Land Use Planning Commission.

Amendments

Location #	Zoning Permit	Effective Date	Remarks
1	ZP710	06/21/2007	
2	ZP710A	11/29/2018	
3	ZP710B	01/27/2022	

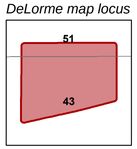
0 0.5 1 1.5 2 Miles

0 1,000 2,000 3,000 4,000 Meters

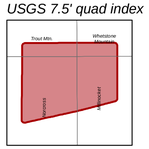
0 2,000 4,000 6,000 8,000 Feet

SOURCES: Maine Land Use Planning Commission, USGS

DeLorme map locus



USGS 7.5' quad index



(1) Map amendment location

▲ Point at which a river drains 25 square miles - symbol points upstream (12 M.R.S. Sec. 682-B(4))

9999 MIDAS number: Unique number assigned to each standing body of water in Maine.

WQLL Water Quality Limiting Lake - Refer to Section 10.23,E,3,g of the Commission's Land Use Districts and Standards.

MC# Lake Management Classes - Refer to Section 10.02 (Definitions) of the Commission's Land Use Districts and Standards.

HAMMOND RIDGE | L 1-00 DEVELOPMENT CONTEXT PLAN

01-09-2025

ACETO LANDSCAPE ARCHITECTURE + URBAN DESIGN

APPENDIX B

FEE WAIVER LETTER

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
LAND USE PLANNING COMMISSION
22 STATE HOUSE STATION
AUGUSTA, MAINE 04333-022

AMANDA E. BEAL
COMMISSIONER

JUDY C. EAST
EXECUTIVE DIRECTOR

August 16, 2021

Via U.S. Mail and E-mail

Matthew Polstein
New England Outdoor Center
PO Box 669
Millinocket Maine 04462

RE: Fee reduction/waiver D-PD proposal for Hammond Ridge T1R8WELS

Dear Matt:

Thank you for taking the time to calculate the fee for your proposed Planned Development (D-PD) rezoning on 1409 acres at Hammond Ridge in T1R8WELS. As discussed at our meeting today with Planning Manager Stacie Beyer and Senior Planner Corinne Michaud-LeBlanc, I am prepared to reduce a portion of the rezoning fee and waive the anticipated fee for your first Site Law Certification (SLC) application to come before the Commission.

The rationale for this fee reduction and waiver, granted pursuant to Chapter 1 F. (3) of the Commission's Rules, is threefold. First, you had originally proposed an expanded D-GN rezoning and a subdivision permit for a portion of this development. It was our idea and request that you change those two requests to the current D-PD rezoning process in order to understand the larger scope of the project and how the current proposal will fit into its geography and timeline. You have taken the time to address this request and we do not wish to penalize any applicant for doing the type of planning that we feel will be best for the service area, the applicant, and the dedication of LUPC staff time and resources.

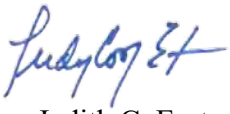
Second, the Site Law Certification fee is a new fee that will go into effect on November 1, 2021. As you expect to submit that SLC soon but not before the new fee goes into effect, we anticipate that this D-PD review process will contribute significantly to the staff and public processes needed to complete that SLC.

And finally, the fee you would have paid for your originally proposed rezoning/permit would have amounted to $12,250. The fee for a D-PD rezoning would amount to $31,800. In addition, we anticipate that the SLC fee would come close to the $5000 maximum fee to be allowed upon the effective date of November 1, 2021. This would come to a total of $36,800, a tripling of the fee you had anticipated and which I consider an extreme hardship for a permit process that we suggested.

Therefore, by this letter, I am reducing the fee for the Hammond Ridge D-PD to $12,250 and waiving the first Site Law Certification fee up to the maximum of $5000.

Thank you for your patience and help with this process. If you have any questions about this letter, or if I may be of any other assistance, please do not hesitate to contact me at 207-592-1724 or via e-mail at: judith.c.east@maine.gov.

Sincerely,



Judith C. East
Executive Director

cc: Corinne Michaud-Leblanc, Senior Planner
Stacie Beyer, Planning Manager

APPENDIX C

SITE PHOTOGRAPHS

Photo No. 1 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing gravel road approaching the Activity Center, looking northwest. **Photo By:** ALF	

Photo No. 2 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing gravel road into the development, looking south. **Photo By:** ALF	

Photo No. 3 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing meadow area north of the Activity Center, looking west. **Photo By:** ALF	

Photo No. 4 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing Activity Center, looking southeast. **Photo By:** ALF	

Photo No. 5 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing Activity Center, looking southeast. **Photo By:** JES	

Photo No. 6 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing Activity Center, looking north. **Photo By:** JES	

Photo No. 7 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing parking lot for the Activity Center, looking north. **Photo By:** ALF	

Photo No. 8 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing gravel pit where the Maintenance Building and yard are proposed, looking east. **Photo By:** JES	

Photo No. 9 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing gravel pit where the Maintenance Building is proposed, looking east. **Photo By:** ALF	

Photo No. 10 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Access area directly south of the Event Center, looking east. **Photo By:** ALF	

Photo No. 11 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** The existing lawn area at the Event Center, looking north. **Photo By:** ALF	

Photo No. 12 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing lawn and Event Center, looking east. **Photo By:** ALF	

Photo No. 13 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing Event Center, looking southeast. **Photo By:** ALF	

Photo No. 14 **Photo Date:** 12.31.2024 **Site Location:** T1 R8 WELS **Description:** Existing Event Center, looking west. **Photo By:** JES	

Photo No. 15 **Photo Date:** 06.21.2024 **Site Location:** T1 R8 WELS **Description:** Existing parking lot for the Event Center, looking east. **Photo By:** ALF	

Photo No. 16 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing cell tower located on Hammond Ridge, looking north. **Photo By:** JES	

Photo No. 17 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing solar array and shed on Hammond Ridge, looking northwest. **Photo By:** JES	

Photo No. 18 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing solar array on Hammond Ridge, looking northwest. **Photo By:** JES	

Photo No. 19 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing vegetation south of the proposed mix-use Lot 8 at location of proposed buffer. **Photo By:** JES	

Photo No. 20 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing vegetation on the western side of proposed Lot 1 (single-family). **Photo By:** JES	

Photo No. 21 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing recreational trail between proposed single-family Lots 23 and 8. **Photo By:** JES	

Photo No. 22 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing vegetation behind proposed Lot 6 (single-family), just off existing recreational trail. **Photo By:** JES	

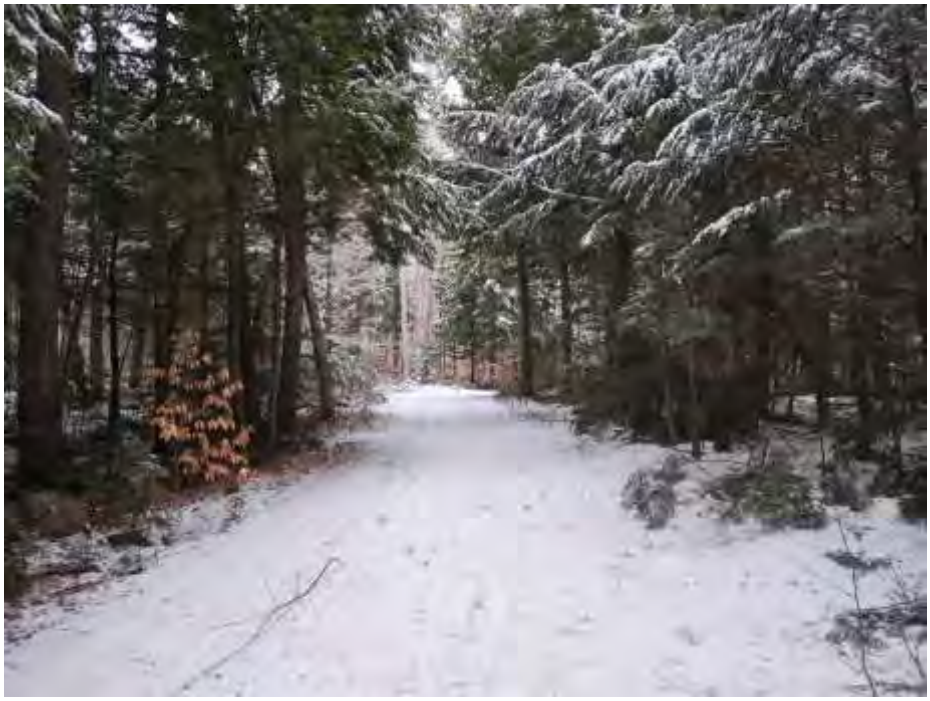
Photo No. 23 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing recreational trail behind proposed single-family Lot 26. **Photo By:** JES	

Photo No. 24 **Photo Date:** 12.20.2024 **Site Location:** T1 R8 WELS **Description:** Existing vegetation on the western side of site behind proposed single-family Lot 26, looking east. **Photo By:** JES	

Photo No. 25 **Photo Date:** 12.31.2024 **Site Location:** T1 R8 WELS **Description:** Existing hiking trail near Event Center. **Photo By:** JES	

Photo No. 26 **Photo Date:** 12.31.2024 **Site Location:** T1 R8 WELS **Description:** Black Cat Road, looking west. **Photo By:** JES	

Photo No. 27 **Photo Date:** 12.31.2024 **Site Location:** T1 R8 WELS **Description:** Existing vegetation near existing solar array and cell tower. **Photo By:** JES	

Photo No. 28 **Photo Date:** 12.31.2024 **Site Location:** T1 R8 WELS **Description:** Existing access road. northwestern view of Katahdin View Drive. **Photo By:** JES	

Photo No. 29 **Photo Date:** 12.31.2024 **Site Location:** T1 R8 WELS **Description:** Existing road to Event Center. **Photo By:** JES	

Photo No. 30 **Photo Date:** 12.31.2024 **Site Location:** T1 R8 WELS **Description:** Existing vegetation to the east of the proposed mixed-use Lot 5. **Photo By:** JES	

APPENDIX D

DEED COVENANTS AND LEGAL RIGHT OF ACCESS

DECLARATION OF PROTECTIVE COVENANTS, COMMON EASEMENTS AND ROAD MAINTENANCE AGREEMENT

THIS DECLARATION OF COVENANTS, COMMON EASEMENTS, AND ROAD MAINTENANCE AGREEMENT (the "**Declaration**") is made this ____ day of _____, 2025, by **HAMMOND RIDGE DEVELOPMENT COMPANY, LLC**, a Maine limited liability company ("**Declarant**"), with respect to Declarant's real property in **T1 R8 WELS**, Penobscot County, Maine, and in **T1 R9 WELS**, Piscataquis County, Maine (collectively, the "**Declarant Lands**").

WHEREAS, Declarant intends to subdivide that portion of the Declarant Lands described on Exhibit A attached hereto (the "**Property**") into a mixed use development (the "**Development**"), as depicted on the plan entitled "_____", by Haley Ward, Inc., dated _____, and recorded in the Penobscot County Registry of Deeds in Plan Book _____, Page ____ (the "**Master Plan**"); and

WHEREAS, Declarant desires to impose certain covenants, conditions, and restrictions on the Property, and to establish certain limited easements on, over, and across the Property and portions of the Declarant Lands, all for the preservation, use, enjoyment, and benefit of the Development and individual lots to be established therein, or as otherwise required by applicable law, rule, regulation, permit, approval, or other governmental authorization.

NOW, THEREFORE, Declarant hereby declares that the Property is and shall forever be held, transferred, sold, conveyed, occupied and maintained subject to and with the benefit of the covenants, conditions, restrictions, and easements set forth herein, which shall run with the Property and, as applicable, the Declarant Lands, and be binding on all parties having any right, title and interest in and to the Property and, as applicable, the Declarant Lands, or any portion thereof, and their respective heirs, devisees, personal representatives, successors and assigns. Any future owner or occupant of the Property and, as applicable, the Declarant Lands, or any portion thereof, by acceptance of the deed of conveyance thereto, or an instrument conveying an interest therein, whether or not the deed or instrument shall so state, shall be deemed to have accepted title subject to this Declaration and agree to be bound by, comply with and to be subject to each and every one of the covenants, conditions and restrictions hereinafter set forth, as applicable.

PART I
DEFINITIONS

1.1. "**Approvals**" shall mean any permits, approvals, or other authorizations issued by any federal, state, or municipal governmental authority or agency, including but not limited to [permit references TBD].

1.2. "**Association**" means a non-profit corporation established pursuant to Part IV of this Declaration for the purpose of maintaining and repairing the Common Areas.

1.3. "**Building Envelope**" shall mean the area on each Lot designated for clearing and development, including construction or installation of dwellings, structures, improvements, or utility services, as depicted on the Master Plan.

1.4. "**Common Areas**" shall mean the portions of the Property intended for common use by the Lot Owners and Declarant, including the Interior Access Roads, Open Space Lot, and Undeveloped Area.

1.5. "**Common Easements**" shall mean the rights and easements granted or conveyed to each Lot, as set forth in Part III of this Declaration.

1.6. "**Declarant**" shall have the meaning set forth in the first paragraph of Declaration, or its successors or assigns.

1.7. "**Declarant Lands**" shall mean the real property described in the deed from Katahdin Timberlands LLC and Katahdin Forest Management, LLC to Hammond Ridge Development Company, LLC, dated December 28, 2005, and recorded in the Penobscot County Registry of Deeds in Book 10256, Page 1, and in the Piscataquis County Registry of Deeds in Book 1713, Page 208, less and excepting any and all portion thereof conveyed prior to the effective date of this Declaration.

1.8. "**Declarant Retained Lands**" shall mean all of the Declarant Lands or other real property of Declarant, whether now owned or hereafter acquired, less and excepting the Property.

1.9. "**House Lots**" shall mean Lots 1 through 21, inclusive, and Lots 31 through 51, inclusive, as shown on the Master Plan, which are designated for single-family residential use pursuant to this Declaration, each of which individually shall constitute a "**House Lot**".

1.10. "**Interior Access Roads**" shall mean the roadways located on Property which serve the Development, as depicted on the Master Plan, excluding any roadways or road segments which serve only a single Lot. In the event of a dispute as to whether a roadway or road segment is part of the Interior Access Roads, the Declarant or, if established, the Association, shall be entitled to make a determination as to status as part of the Interior Access Roads, which determination shall be binding upon the Lot Owners.

1.11. "**Laws**" shall mean any and all municipal, state, or federal statutes, laws, regulations, rules, ordinances, or other governmental enactments applicable to the Property, and portion of the Property, and any use of the Property.

1.12. "**Lots**" shall mean the House Lots, Mixed Use Lots, and Open Space Lot.

1.13. "**Lot Owner**" shall mean the record owner, whether one or more persons or entities, of fee simple title to any Lot, including any mortgagee in possession of the Lot during the period of the mortgagee's actual possession, but excluding those having such interest merely as security for the performance of an obligation (collectively, the "**Lot Owners**").

1.14. "**Low-Impact Outdoor Recreational Activities**" shall mean non-motorized outdoor or nature-based recreational activities, including, by way of example and not limitation, hiking, fishing, nature observation, wildlife study and photography, horseback riding, cross-country skiing, bicycling, snowshoeing, and other enjoyment of open space, on the terms and conditions set forth in this Declaration. The term "Low-Impact Outdoor Recreational Activities" shall expressly exclude hunting (by any method or manner, including but not limited to by firearms, bow, muzzle loaders, falconry, or otherwise), trapping, and camping.

1.15. "**Master Plan**" shall have the meaning set forth in the recitals above.

1.16. "**Mixed Use Lots**" shall mean Multi-Use Lots 1, 2, 3, 4, 5, 6, 8, and 9, as shown on the Master Plan, which are designated for mixed use or multi-use purposes pursuant to this Declaration, each of which shall constitute a "**Mixed Use Lot**".

1.17. "**Open Space Lot**" shall mean Open Space Lot 7, as shown on the Master Plan, which is designated for common use of the Lot Owners pursuant to this Declaration.

1.18. "**Property**" shall have the meaning set forth in the first paragraph of the Declaration, and such other real property as Declarant may add and subject to this Declaration, from time to time, or at any time.

1.19. "**Property Access Roads**" means those roads, located off the Property, which provided access to and from a public road and the Property, as more particularly described in Exhibit B hereto.

1.20. "**Protective Covenants**" shall mean all of the covenants, conditions, and restrictions set forth in this Declaration.

1.21. "**Recreational Easements**" shall mean the easements for recreational use of the Open Space Lot, Undeveloped Area, and Recreational Trails granted to the Lot Owners, in common with Declarant and others having rights thereto, pursuant to Part III of this Declaration.

1.22. "**Undeveloped Area**" shall mean any portion of the Property that is not encompassed by the Lots or Interior Access Roads, and which has been set aside by Declarant for Low-Impact Outdoor Recreational Activities and snowmobiling. For purposes of clarification, the

boundaries of the Undeveloped Area is coextensive with the boundaries of the Property, as described on Exhibit A, and does not include any portion of Declarant Retained Lands.

1.23. "**Recreational Trails**" means any trails that are now established, or may hereafter be established, on the Declarant Retained Lands, for Low-Impact Outdoor Recreational Activities.

1.24. "**Snowmobile Routes**" mean the designated routes that are now established, or may hereafter be established by Declarant, on portions of the Open Space Lot, Undeveloped Lot, Recreational Trails, Interior Access Roads, or elsewhere on the Declarant Retained Lands, for use by snowmobiles. The Snowmobile Routes, as in existence at the execution of this Declaration, are generally shown on the Master Plan. As set forth in elsewhere in this Declaration, the Snowmobile Routes are subject to relocation and closure, from time to time and at any time, and, therefore, the depiction of the Snowmobile Routes on the Master Plan is not intended to establish, and does not establish, the permanent location of said Snowmobile Routes or any rights in and to said specific location.

PART II
PROTECTIVE COVENANTS

2.1. **Protective Covenants and Restrictions - House Lots**. The following covenants and restrictions shall be applicable to each and every House Lot:

a. One Dwelling. No more than one dwelling designed for single-family occupancy, together with usual and ordinary outbuildings, such as a garage or storage shed, shall be erected on any House Lot. No outbuilding, accessory dwelling, bunkhouse, or other structure, nor separate apartment within the primary dwelling, shall be used for the accommodation of guests or for human habitation purposes, unless otherwise permitted pursuant to the Laws and Approvals, and approved by Declarant, in Declarant's sole reasonable discretion.

b. No Commercial Use. No House Lot shall be used for commercial, agricultural or industrial purposes, but shall be used for single-family residential purposes only. This restriction shall not be construed to prevent the practice of professions, craft work, artistic endeavors, and similar occupations conducted wholly within a private residence and not involving the sale or provision of goods or services on the House Lot, provided that such activity is not visible or audible from other House Lots and results in no substantial increase of traffic on the Interior Access Roads.

c. [ADDITIONAL RESTRICTIONS TBD]

2.2. **Protective Covenants and Restrictions – Mixed Use Lots**.

a. [ADDITIONAL RESTRICTIONS TBD]

2.3. **Protective Covenants and Restrictions - Open Space Lot**. The Open Space Lot shall be maintained in perpetuity as open space, without there being conducted thereon any

residential, industrial, or commercial activities, and without the placement, installation, or construction of any structures, improvements or alterations, except as otherwise expressly set forth herein. Notwithstanding the foregoing, Declarant or, as may be applicable, the Association, expressly reserves the following rights with respect to the Open Space Lot:

a. to place, construct, install, maintain, repair, and replace, above or below ground utility services (as defined by 33 M.R.S. § 458(2)(B)) for the benefit of the Development, or portion thereof, including any improvements or structures on the Open Space Lot pursuant to subsection (b) below;

b. to place, construct, install, maintain, repair, and replace a stage, amphitheater, theater, or other venue, structure, or improvement intended for entertainment and arts purposes, together with all necessary utilities and appurtenances;

c. to conduct forest management activities, including but not limited to the harvesting and removal of forest products (by any and all current and future harvesting and removal techniques) for commercial purposes and the construction use and maintenance of structures, improvements, and surface alterations deemed necessary or appropriate, in its sole reasonable discretion, for forest management activities, all as may be permitted by the Laws and Permits;

d. to place, construct, install, maintain, repair, and replace such structures, improvements, and surface alterations as deemed necessary or appropriate, in its sole reasonable discretion, for Low-Impact Recreational Activities and/or snowmobiling, including but not limited to hiking or walking trails, snowmobile trails, trail markers and signs, warming huts, picnic tables and sites, foot bridges and walks, culverts, gates and barriers to control unauthorized use, and other infrastructure or improvements intended to provide a benefit for Low-Impact Recreational Activities and/or snowmobiling; and

e. to cut, clear, or harvest any trees, brush, or other vegetation, and to grade, landscape, mow, or otherwise maintain or alter the Open Space Lot as necessary and appropriate, in Declarant's sole discretion, to effectuate the foregoing reserved rights set forth in Subsections (a) through (d).

2.4. **Protective Covenants and Restrictions – Undeveloped Area**. The Undeveloped Area shall be maintained in perpetuity as open space and in, to the greatest extent possible, its natural, vegetated, and scenic state, without there being conducted thereon, any residential, industrial, or commercial activities, and without the placement, installation, or construction of any structures, improvements or alterations, except as otherwise expressly set forth herein. Notwithstanding the foregoing, Declarant or, as may be applicable, the Association, expressly reserves the following rights with respect to the Undeveloped Area:

a. to place, construct, install, maintain, repair, and replace, above or below ground utility services (as defined by 33 M.R.S. § 458(2)(B)) for the benefit of the Property and/or Declarant Retained Lands;

b. conduct forest management activities, including but not limited to the harvesting and removal of forest products (by any and all current and future harvesting and removal techniques) for commercial purposes and the construction use and maintenance of structures, improvements, and surface alterations deemed necessary or appropriate, in Declarant's sole discretion, for forest management activities, all as may be permitted by the Laws and Permits;

c. to place, construct, install, maintain, repair, and replace such structures, improvements, and surface alterations as deemed necessary or appropriate, in its sole reasonable discretion, for Low-Impact Recreational Activities and/or snowmobiling, including but not limited to hiking or walking trails, snowmobile trails, trail markers and signs, warming huts, picnic tables and sites, foot bridges and walks, culverts, gates and barriers to control unauthorized use, and other infrastructure or improvements intended to provide a benefit for Low-Impact Recreational Activities and/or snowmobiling; and

d. cut, clear, or harvest any trees, brush, or other vegetation, any portion of the Undeveloped Area as necessary and appropriate, in its sole reasonable discretion, to effectuate the foregoing reserved rights set forth in Subsections (a) through (c) above, and/or for timber stand health, safety, and visual and scenic impact.

2.5. **Protective Covenants and Restrictions - All Lots**. The following covenants and restrictions shall be applicable to each and every Lot and are in addition to, not in lieu of, the covenants and restrictions applicable to any subsect of the Lots set forth elsewhere in this Declaration:

a. Parking. Each Lot shall be developed in such a manner as to provide adequate parking for the Lot Owner and Lot Owner's guests, customers, invitees, employees, or others, as applicable. No parking shall be permitted on the Interior Access Roads except of an occasional and temporary nature.

b. Drainage. The natural drainage of surface water on and from each Lot shall not be altered so as to damage a neighboring Lot or the Interior Access Roads. No Lot may be clear-cut of its trees or used for commercial forestry purposes.

c. Burdens; Compliance with Law. Each Lot, and any Common Easements granted herein, is conveyed subject to the following, as applicable: (i) the Laws, (ii) the Approvals; (iii) all easements, covenants, restrictions, or encumbrances of record, including but not limited to those set forth on Exhibit C attached hereto; (iv) any condition which a physical examination or adequate survey of the Lot might reveal; (v) any outstanding governmental fees, assessments and charges, except for any prorations agreed upon by Declarant and Lot Owner in writing; (vi) any easements, notes, conditions, and restrictions set forth on the Master Plan or other recorded document referenced in this Declaration; and (vii) any easements, covenants, restrictions, encumbrances, or other matters set forth in the deed from Declarant to Lot Owner.

d. No Division. No Lot may be further divided; provided, however, that a conveyance to the owner of an abutting Lot may be permitted in the event that the portion of the Lot being transferred merges with and becomes a part of the title to the abutting Lot, and such transfer is permitted pursuant to the Laws and Approvals.

e. Building Envelopes. All dwellings, structures, improvements, and associated utility services located on any one or more Lot shall be located, constructed, maintained, repaired, and replaced in accordance with this Declaration, the Master Plan, the Approvals, and the Laws, as may be applicable. Any dwellings, structures, or other improvements, and any permanently maintained cleared openings on a Lot shall be located wholly within the Building Envelope specified for such Lot, as depicted on the Master Plan; provided, however, that each Lot may maintain a single driveway for access to the Building Envelope together with utility services benefitting the Lot (which, to the greatest extent possible, shall be collocated with the driveway) outside of the Building Envelope. Any cleared areas mowed less than twice a year shall not be considered "permanently maintained cleared openings" and, therefore, are not prohibit by this restriction.

f. [ADDITIONAL RESTRICTIONS TBD]

PART III
COMMON EASEMENTS

Each Lot is conveyed together with and subject to certain appurtenant, perpetual easements, in common with all others have rights therein, as set forth in more detail below (collectively, the "**Common Easements**"). No easements, licenses, or rights of any kind are granted in any roads, ways, trails, driveways, or any portion of the Property, Declarant Retained Lands, or other lands in which Declarant has any interest, except as expressly set forth in this Declaration. By acceptance of the deed to a Lot subject to this Declaration, each Lot Owner expressly acknowledges, for Lot Owner and Lot Owner's heirs, successors and assigns, that the Lot is conveyed without the benefit of any easement (except those expressly set forth in this Declaration as the Common Easements), including but not limited to any easement express implied, by necessity, or however else arising, over any portion of the Property, Declarant Retained Lands, or any other lands in which Declarant has any interest, notwithstanding that the Lot may not otherwise have access to a public way.

3.1. **Interior Access Roads**. Each Lot includes an appurtenant easement for the use of the Interior Access Roads for travel by persons, vehicles, and equipment in conjunction with Lot Owner's use and occupancy of Lot Owner's Lot, in common with Declarant and all others entitled to use of the Interior Access Roads. The use of the Interior Access Roads is subject to the terms and conditions of this Declaration, any rules and regulations established by Declarant and, if the Association is established (as set forth in Part IV below), any provisions, terms, conditions, bylaws, and/or rules and regulations established by the Association. The use of snowmobiles on the Interior Access Roads are limited to those portions expressly designated as Snowmobile Routes. Declarant expressly reserves the right, at any time and from time to time, to designate, mark, open, or close (temporarily, long-term, or permanently) any portion of the Interior Access Roads as part of the

Snowmobile Routes or for use by all-terrain vehicles (including but not limited to utility, sports, or recreational ATVs, quads, and side-by-sides).

3.2. **Property Access Roads**. Each Lot includes an assignment of the right to use the Property Access Roads for access to and from the Property and Lot, in common with Declarant and all others entitled to use of the Property Access Roads, to the extent that Declarant has the right to grant the same and to the same extent as the Property was originally benefited thereby. The use of the Property Access Roads is subject to any and all terms, conditions, restrictions, rules or regulations set forth in the applicable instrument originally establishing such usage rights, including but not limited to the right to use snowmobiles or all-terrain vehicles (including but not limited to utility, sports, or recreational ATVs, quads, and side-by-sides) on the Property Access Roads.

3.3. **Recreational Easements**. Each Lot includes an appurtenant easement to use the Open Space Lot, Undeveloped Area, and Recreational Trails for the purposes of Low-Impact Outdoor Recreational Activities, and to use the Snowmobile Routes for snowmobile access to and from the Lots, other Lots, and external snowmobile trails located on lands of third parties (collectively, the "**Recreational Easements**"), subject to the following terms and conditions:

a. Prohibitions. The Recreational Easements do not include the right of any Lot Owner or other individual or entity to (a) construct, place, install, or maintain any building, structure, or other improvement, or any trail or other surface alteration on any portion of the Open Space Lot, Undeveloped Area, Recreational Trails, or Snowmobile Routes. No motor vehicle, camper, recreational vehicle, trailer, snowmobile, or other equipment or vehicle may be parked or stored on any portion of the Open Space, Undeveloped Area, Recreational Trails, Snowmobile Routes, except for temporary parking in designated parking areas or for the immediate unloading or loading of snowmobiles, bicycles, or other permitted recreational vehicles or equipment. The Recreational Easements do not include the right to hunt (by any method or manner, including but not limited to by firearms, bow, muzzle loaders, falconry, or otherwise), trap, or camp.

b. Snowmobile Routes; No ATVs. The use of snowmobiles is limited to the Snowmobile Routes, and snowmobiles may not be used on any portion of the Open Space, Undeveloped Area, Recreational Trails, or Declarant Retained Lands that are not designated as Snowmobile Routes. Declarant expressly reserves the right, at any time and from time to time, to designate, mark, open, or close (temporarily, long-term, or permanently) any portion of the Open Space, Undeveloped, Recreational Trails, or Declarant Retained Lands as part of the Snowmobile Routes. The use of all-terrain vehicles (including but not limited to utility, sports, or recreational ATVs, quads, and side-by-sides) is expressly prohibited on the Open Space, Undeveloped Area, and Recreational Trails, including the Snowmobile Routes; provided, however, that Declarant or, as may be applicable, the Association, reserves the right, in its sole discretion, to permit such ATV usage, subject to rules, restrictions, and limitations, at any time and from time to time, to any person or class of person.

c. Rules and Regulations. The Recreational Easements and the use of the Open Space, Undeveloped Area, Recreational Trails, and Snowmobile Routes are subject to any rules and regulations established by Declarant or, as may be applicable, the Association.

d. Limited Liability. Declarant claims and retains all protections, rights, and immunities against liability to the fullest extent provided under Maine law to owners of land utilized for recreational purposes, including, but not limited to, the protections contained in 14 M.R.S. § 159-A, or any amendment, successor, or replacement provision, or any other applicable provision of law or equity.

e. Posting, Gating, and Closure. Declarant or, as may be applicable, the Association, reserves the right to temporarily or post, gate, and close all or any portion of the Open Space Lot, Undeveloped Area, Recreational Trails, and Snowmobile Routes, or take such other actions as deemed necessary and appropriate for safety and/or environmental concerns. Declarant or, as may be applicable, the Association, reserves the right to post, gate, and close all or any portion of the Recreational Trails, Snowmobile Routes, or trails located on the Undeveloped Area long-term or permanently that pose a safety hazard or environmental concerns that have the potential to impose liability on Declarant or, as may be applicable, the Association, or which the costs of repairing or remedying would be excessive, in its sole reasonable discretion.

f. Relocation; Construction. Declarant reserves the right, from time to time and at any time, to relocate all or any portion of the Recreational Trails or any portion of the Snowmobile Routes on Declarant Retained Lands, or to establish any new or replacement trails subject to the Recreational Easements, including Snowmobile Routes. Declarant or, as may be applicable, the Association, reserves the right, from time to time and at any time, to relocate all or any portion of trails located on the Undeveloped Area, or to establish any new or replacement trails subject to the Recreational Easements.

3.4. **Fee Title Retained**. The conveyance of any Lot or Lots by Declaration does not include, and Declarant expressly reserves, all right, title, and interest in and to the Interior Access Roads, Open Space Lot, Undeveloped Area, and Recreational Trails adjacent to the Lot or Lots being conveyed, subject to the Common Easements granted pursuant to this Declaration, it being the intent of Declarant that fee title to any and all other portions of the Property or Declarant Retained Lands not expressly set forth in such deed of conveyance is retained and reserved by Declarant.

3.5. **Exercise of Common Easements**. With respect to each of the Common Easements, each Lot Owner shall exercise Lot Owner's rights in a way which does not unreasonably interfere with Declarant's or any other person's lawful use of the Common Easements, Interior Access Roads, Property Access Roads, Open Space Lot, Undeveloped Area, Recreational Trails, or any adjoining land or road, and each Lot Owner's exercise of said Common Easements shall be in compliance with any and all applicable Laws and Approvals.

3.6. **Non-Exclusive; Declarant Retained Rights**. The Common Easements granted or conveyed herein are non-exclusive. Declarant may use, and hereby reserves the right to use, such

Common Easements to benefit other Lots, Declarant Retained Lands, or the lands of others, and expressly reserves the right to grant similar or additional easement rights to others, including but not limited to the general public, at Declarant's sole discretion and on any such terms as Declarant deems appropriate.

3.7. **Liability; Indemnification**. The exercise of the Common Easements by Lot Owner, or by others at Lot Owner's invitation, including but not limited to Lot Owner's agents, representatives, members, managers, directors, officers, employees, invitees, contractors, subcontractors, guests, customers, and licensees shall be at such individual's sole risk. By acceptance of the deed of conveyance from Declarant, each Lot Owner covenants and agrees, on behalf of Lot Owner and its heirs, successors, and assigns, to hold harmless and indemnify Declarant, its members, managers, agents, representatives, employees, contractors, and subcontractors (collectively the "**Indemnified Parties**") from and against any and all claims, demands, expenses, judgments, losses, penalties, causes of action, suits, and awards (including reasonable attorney fees and court costs) (collectively or individually, "**Claims**") asserted against, incurred by or imposed upon any one or more of the Indemnified Parties and arising in any manner in connection with the exercise or non-exercise of any one or more of the rights granted in this Declaration, including but not limited to (i) the Common Easements, (ii) the use of any road or trail over Declarant Retained Lands, or (iii) the use of any roads or trails in which Declarant has any interest, and including any and all Claims for bodily injury, death, and damage or destruction of property by Lot Owner, or by others exercising such rights at Lot Owner's invitation, including but not limited to Lot Owner's agents, representatives, members, managers, directors, officers, employees, invitees, contractors, subcontractors, guests, customers, and licensees, or any of their respective estates, except as directly arises from the negligence or willful misconduct of any one or more of the Indemnified Parties. The foregoing indemnification shall remain in full force and effect at all times and shall not expire or otherwise terminate.

PART IV
ROAD USE AND MAINTENANCE

4.1. **Maintenance Obligations**. Unless and until the Association is formed pursuant to Section 4.4. below, Declarant shall, at Declarant's cost, maintain and repair the Interior Access Roads, Open Space Lot, and Undeveloped Area (collectively, the "**Common Areas**") on the terms set forth herein. Upon the establishment of the Association, at Declarant's option, the Association shall become responsible for the maintenance and repair of all or some of the Common Areas on the terms set forth herein, at the Association's sole cost, by regarding an amendment to this Declaration stating the same.

4.2. **Maintenance Standards**. Declarant or the Association, as may be applicable, shall maintain the Common Areas in accordance with the following requirements:

a. Interior Access Roads. The Interior Access Roads are to be kept open and usable on a year-round basis for access by the Lot Owners and their guests; by fire, law enforcement, and emergency vehicles; and by utility workers, delivery trucks, and the like. The Interior Access Roads shall be maintained in a reasonably safe and passable condition, and shall be plowed or otherwise cleared for passage within a reasonable time following

winter storms, or on such other periodic nature, all as deemed necessary and appropriate by Declarant or, as may be applicable, the Association, in its reasonable discretion. Any lighting fixtures shall be maintained in good and workable condition. Routine maintenance services shall be performed at such intervals as will keep the Interior Access Roads and lighting fixtures in good repair, but such services may be delayed or deferred for reasonable periods of time to obtain a better rate or to make a more efficient work schedule, at the reasonable discretion of Declarant or, as may be applicable, the Association. Any condition which renders the Interior Access Roads impassable shall be repaired or remedied as soon as practicable, subject to such constraints or limitations as may be outside the control of Declarant or, as may be applicable, the Association, including but not limited to, contractor, subcontractor, or materials availability, acts of nature (i.e., fire, flood, winter storm, etc.), strikes, pandemic, or other such occurrences or events considered to be a force majeure by Declarant or, as may be applicable, the Association, in its reasonable discretion.

b. Open Space Lot and Undeveloped Area. Any trails located on the Open Space and Undeveloped Area shall be kept in a generally good and passable condition for Low-Impact Outdoor Recreational Activities and, during winter, snowmobiling; provided, however, that the Declarant or, as may be applicable, the Association, retains the following rights: (i) to temporarily, post, gate, and close all or any portion of the Open Space or Undeveloped Area, (ii) to delay or defer routine repair and maintenance for such reasonable periods of time to obtain a better rate or to make a more efficient work schedule, at the reasonable discretion of Declarant or, as may be applicable, the Association; and (iii) to take such other actions as deemed necessary and appropriate for safety and/or environmental concerns, or otherwise exercise the rights set forth in Section 3.3 above.

4.3. **Association**. Notwithstanding any other provision of this Declaration, Declarant reserves the absolute right, but not the obligation, to establish the Association for the purpose of maintaining and repairing some or all of the Common Areas.

a. **Formation**. Declarant may form the Association at any time during which it holds fee ownership of some or all of the Common Areas, in such manner as is then provided for by law. In the event Declarant elects to form the Association, Declarant shall record an amendment to the Declaration setting forth, at a minimum, (i) whether all or a portion of the Common Areas shall be maintained or repaired by the Association, and (ii) establishing further provisions for the governance, assessments, collections, expenditures, and other matters related to the proper functioning of the Association, subject to those provisions provided for in this Section 4.3.

b. **Obligation to Join**. By acceptance on a deed of conveyance, Lot Owner covenants and agrees on behalf of Lot Owner and its successors and assigns that in the event the Association is formed by Declarant, Lot Owner shall (i) automatically and irrevocably be deemed a member of the Association, (ii) will cooperate in the establishment of the Association as necessary (including by promptly executing and delivering whatever documentation is necessary and appropriate), (iii) be subject to all of the terms and provisions set forth in this Part IV regarding the Association or as otherwise established by Declarant, including but not limited to the obligation to pay fees and assessments imposed

by the Association, and (iv) that membership in the Association shall be appurtenant to ownership of the Lot. Each Lot Owner further agrees that Declarant is entitled to record an amendment, certificate, affidavit, or other instrument confirming that the Association has been formed and the Lots are subject to the Association and the terms and provisions herein.

c. **Votes**. Each Lot shall be allocated one vote in the Association. If any Lot Owners have common or joint ownership of any Lot, only one vote shall be cast for each Lot with common or joint ownership. An owner of more than one Lot shall have one vote for each Lot. If the holders of a majority interest in any Lot cannot agree on how to cast the vote allocated to that Lot, then the vote shall not be cast.

d. **Membership Not Assignable**. Membership in the Association shall not be assignable, but shall always be incidental to ownership of a Lot and shall automatically convey with ownership of such Lot.

e. **Fee Title**. Declarant reserves the right to convey fee title to all or any portion of the Common Areas to the Association or otherwise. Notwithstanding the foregoing, the obligation of the Association to provide for maintenance of the Common Areas designated by Declarant is not contingent upon the Association holding fee title to all or any portion of the Common Areas. With respect to the foregoing, upon conveyance of fee title of some or all of the Common Areas, but not until such conveyance and only to the extent of the portion of the Common Areas actually conveyed, the Association shall have those rights established elsewhere in this Declaration which include the phrase "as may be applicable, the Association".

f. **Rules and Regulations**. The Association may adopt reasonable rules and regulations to ensure the safe and convenient use of the Common Areas, or any portion of the Common Areas under its ownership, including but not limited to establishing speed limits, restricting times or dates of usage, or any other items deemed advisable to promote safety.

g. **Assessments**. All of the costs to be expended on the maintenance of the Common Areas, or portion of the Common Areas, as applicable, together with a reserve for future repairs, capital improvements and unanticipated contingencies, shall be assessed at least annually against the Lots (the "**Assessments**"). The Assessments shall be used to achieve the objectives of the Association.

h. **Collection of Assessments**. Each Lot shall be liable for its proportional share of the Assessments, which shall be the personal obligation of the Lot Owners of that Lot, jointly and severally, and may be collected as any other debt. If any such amount has not been paid by the date when due or within thirty (30) days after notice thereof has been given by the Association, whichever is later, then the Association may record a certificate claiming a lien against the Lot. Each Lot Owner hereby consents to the creation of such a lien in order to secure the payment of such amounts. This lien may be enforced in any manner allowed by law for the enforcement of liens. Any costs incurred in collecting any

such amounts, including court costs, attorney and paralegal fees, expenses of sale, and all similar costs associated with any appeals or any proceedings to enforce or realize upon a judgment, shall be added to the indebtedness and may be collected therewith and in the same manner. Any such lien shall be subordinate to any bona fide mortgage on the Lot on which any such lien has been placed.

i. **Insurance**. In the event that Declarant retains fee title to all or some of the Common Areas that are subject to maintenance by the Association, the Association will obtain and maintain commercial general liability insurance, vehicular automobile insurance, and such other policy or policies of insurance as may be reasonably requested by Declarant, with such minimum limits, endorsements, and other terms and conditions as required by Declarant.

4.4. **Indemnification**. By acceptance of the deed of conveyance from Declarant, each Lot Owner covenants and agrees, on behalf of Lot Owner and its heirs, successors, and assigns, to hold harmless and indemnify the Indemnified Parties (as defined in Section 3.7 above) from and against any and all Claims (as defined in Section 3.7 above) asserted against, incurred by or imposed upon any one or more of the Indemnified Parties, and arising in any manner in connection with any one or more of the Indemnified Parties' performance of its maintenance and repair obligations (including any assertions of failure to timely perform or to meet the standards set forth herein) set forth in this Part IV or elsewhere in this Declaration, including any and all Claims for bodily injury, death, and damage or destruction of property by Lot Owner, or by others using the Common Areas, or any portion of the Common Areas, at Lot Owner's invitation, including but not limited to Lot Owner's agents, representatives, members, managers, directors, officers, employees, invitees, contractors, subcontractors, guests, customers, and licensees, or any of their respective estates, except to the extent directly attributable to the negligence or willful misconduct of any one or more of the Indemnified Parties. The foregoing indemnification shall remain in full force and effect during any and all periods of time that Declarant remains responsible for the maintenance and repair of the Common Areas, or any portion of the Common Areas.

PART V
GENERAL PROVISIONS

5.1. **Addition of Lots or Property**. During any period of time in which the Declarant owns any Lot or any other portion of the Property, Declarant has the right, but not the obligation, in its sole discretion, to make other property owned by Declarant subject to and with the benefit of this Declaration by instrument signed by the Declarant. At any such time as the Declarant makes said lot or lots subject to this Declaration, Declarant shall execute an amendment to this Declaration stating whether the property to be added constitutes a "Lot" or other portion of the "Property" pursuant to this Declaration.

5.2. **Existing Easements and Encumbrances**. This Declaration shall not affect those existing easements or other encumbrances which currently encumber the Property, but only to the extent that said easements exist as of the date hereof. The holders of said easements and encumbrances may enter upon the Property, or any portion thereof, to exercise the respective rights granted to them pursuant to the same.

5.3. **No Waiver**. No delay or omission on the part of the Declarant or any Lot Owner in enforcing the terms hereof shall be construed as a waiver of any right to enforce or to see such remedy or acquiescence in such breach.

5.4. **Bind and Inure**. This Declaration shall be binding upon and inure to the benefit of the Declarant, all Lot Owners, and their respective heirs, devisees, personal representatives, successors and assigns.

5.5. **Runs with Land**. Each provision of this Declaration, and any agreement, promise, covenant and undertaking to comply with each provision of this Declaration, shall be deemed a covenant running with the land as a burden and upon the title to the Property, every Lot, and any portions thereof.

5.6. **Notice on Transfer**. The Declarant and any subsequent Lot Owner shall include the following notice on all deeds, mortgages, plats or any other instrument used to convey any interest in the Property, any Lot, or any portion thereof that the same is subject to this Declaration:

> NOTICE: This Property is Subject To a Declaration of Covenants, Common Easements, and Road Maintenance Agreement, dated _____, and recorded in the Piscataquis Country Registry of Deeds in Book _____, Page _____.

Failure to comply with this requirement does not impair the validity or enforceability of this Declaration.

5.7. **No Public Rights**. It is expressly understood and agreed that this Declaration does not grant or convey to members of the general public any rights of ownership, entry or use of the Property, including the Open Space Lot, Undeveloped Area, or Recreational Trails. This Declaration is created solely for the protection of the Property and Declarant reserves fee simple estate and all rights pertaining thereto, including without limitation the right to exclude others and to use the Property for all purposes consistent with this Declaration. In no event are the Common Easements to be used for providing general public access to any portion of the Property unless otherwise granted by the Declarant, in Declarant's sole discretion.

5.8. **Construction**. If any term or provision of this Declaration or the application thereof to any person or circumstance shall be deemed invalid or unenforceable, then the remainder of this Declaration shall not be affected thereby, and each term and provision of this Declaration shall be valid and enforced to the fullest extent permitted by law. This Declaration shall be governed by and construed in accordance with the laws of the State of Maine. The paragraph headings throughout this Declaration are for convenience and reference only, and the words contained therein shall in no way be held to explain, modify, amplify, or aid in the interpretation, construction, or meaning of the provisions of this Declaration.

5.9. **Amendments**. This Declaration may only be amended by writing signed by the applicable individuals or entities set forth below, and which shall only be effective upon recording in the Penobscot County Registry of Deeds and Piscataquis County Registry of Deeds:

a. during any time that the Declarant remains the fee title owner of fifty percent (50%) or more of the Lots, this Declaration may be amended at any time in the sole discretion of the Declarant without the need for joinder by any Lot Owner(s);

b. during any time that more than fifty percent (50%) of the Lots are owned by third parties, but Declarant remains fee title owner of any portion of the Property (including but not limited to all or any portion of the Common Areas), then this Declaration may be amended only by written instrument signed by the Lot Owners representing at least seventy five percent (75%) of the Lots and Declarant; provided, however, Declarant reserves the right to amend this Declaration pursuant to, and for the sole purposes set forth in, Part IV above (formation of the Association and related matters) without joinder by any Lot Owner(s); and

c. at such time as Declarant does not hold fee title to any portion of the Property, then then this Declaration may be amended only by written instrument signed by the Lot Owners representing at least seventy five percent (75%) of the Lots.

5.10. **Enforcement**. This Declaration may be enforced by Declarant, any one or more of the Lot Owners, or if established and consistent with its purpose, the Association, whether jointly or severally, in any appropriate proceeding.

[signature appears on following page]

IN WITNESS WHEREOF, the undersigned representative of Hammond Ridge Development Company, LLC, duly authorized, has hereunto set his hand and seal this ____ day of _____, 2025.

HAMMOND RIDGE DEVELOPMENT COMPANY, LLC

By:_____
Matthew Polstein, Member
Duly Authorized

STATE OF MAINE

_____ County _____, 2025

Personally appeared the above named Matthew Polstein, Member of Hammond Ridge Development Company, LLC, and acknowledged before me the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said company.

_____
Notary Public/Attorney at Law

_____
Print or Type Name as Signed

EXHIBIT A

[insert legal description of Property]

EXHIBIT B

[insert benefiting easements providing access to public way]

EXHIBIT C

[insert burdening easements, restrictions, covenants, encumbrances, etc.]

APPENDIX E

DEVELOPMENT DIMENSIONAL REQUIREMENTS

LOT SPECIFICATION (MIXED USE AND COMMERCIAL LOTS)						
LOT NO.	LOT WIDTH BY DEPTH (FT)	LOT SIZE (AC)	BUILDING ENVELOPE SIZE (SF)	ROAD FRONTAGE (FT)	WILL REMAIN UNDEVELOPED? (Y/N)	DESCRIPTION OF LOT CHARACTERISTICS
1	Varies – see plans	4.9	168,611	921	N	Commercial/Recreational
2	Varies – see plans	3.7	129,882	500	N	Commercial/Recreational
3	Varies – see plans	1.4	47,418	472	N	Commercial/Residential
4	Varies – see plans	2.6	95,238	426	N	Commercial/Residential
5	Varies – see plans	3.0	113,659	569	N	Commercial/Residential
6	Varies – see plans	1.34	43,177	555	N	Commercial/Residential
7	Varies – see plans	4.7	154,312	1780	N	Community Space
8	Varies – see plans	1.9	63,448	459	N	Commercial/Residential
9	Varies – see plans	2.1	69,858	1241	N	Commercial/Residential
10	Varies – see plans	8.2	315,951	444	N	Commercial/Operations Use

*Test pits were dug at each lot to confirm soils are suitable for development. See Section 11: Soils and Section 17: Wastewater Disposal of the SLODA for more information on the existing soils.
*Lots do not contain any shore frontage

LOT SPECIFICATIONS (SINGLE FAMILY RESIDENTIAL LOTS)						
LOT NO.	LOT WIDTH BY DEPTH (FT)	LOT SIZE (AC)	BUILDING ENVELOPE SIZE (SF)	ROAD FRONTAGE (FT)	WILL REMAIN UNDEVELOPED? (Y/N)	DESCRIPTION OF LOT CHARACTERISTICS
1	Varies – see plans	0.74	24,498	74	N	Residential
2	Varies – see plans	0.91	30,462	79	N	Residential
3	Varies – see plans	1.10	36,242	112	N	Residential
4	Varies – see plans	1.67	57,775	183	N	Residential
5	Varies – see plans	1.21	39,650	118	N	Residential
6	Varies – see plans	1.25	42,025	110	N	Residential
7	Varies – see plans	0.84	27,655	125	N	Residential
8	Varies – see plans	0.88	29,475	143	N	Residential
9	Varies – see plans	0.74	23,858	148	N	Residential
10	Varies – see plans	0.55	16,695	168	N	Residential
11	Varies – see plans	0.53	16,147	126	N	Residential
12	Varies – see plans	0.56	17,225	83	N	Residential
13	Varies – see plans	0.87	28,715	124	N	Residential
14	Varies – see plans	1.08	36,264	145	N	Residential
15	Varies – see plans	0.75	23,565	124	N	Residential
16	Varies – see plans	0.63	19,074	113	N	Residential
17	Varies – see plans	0.58	17,427	93	N	Residential
18	Varies – see plans	0.50	15,096	100	N	Residential
19	Varies – see plans	0.55	16,945	143	N	Residential
20	Varies – see plans	0.50	15,046	142	N	Residential
21	Varies – see plans	0.56	17,580	109	N	Residential
22	Varies – see plans	0.80	24,813	353	N	Residential
23	Varies – see plans	1.07	36,944	187	N	Residential
24	Varies – see plans	0.71	23,020	113	N	Residential
25	Varies – see plans	0.58	18,370	95	N	Residential
26	Varies – see plans	0.53	16,267	96	N	Residential

LOT SPECIFICATIONS (SINGLE FAMILY RESIDENTIAL LOTS) CONTINUED						
LOT NO.	LOT WIDTH BY DEPTH (FT)	LOT SIZE (AC)	BUILDING ENVELOPE SIZE (SF)	ROAD FRONTAGE (FT)	WILL REMAIN UNDEVELOPED? (Y/N)	DESCRIPTION OF LOT CHARACTERISTICS
27	Varies – see plans	0.52	15,920	127	N	Residential
28	Varies – see plans	0.52	15,851	95	N	Residential
29	Varies – see plans	0.51	15,448	92	N	Residential
30	Varies – see plans	0.51	15,626	95	N	Residential
31	Varies – see plans	0.51	15,629	78	N	Residential
32	Varies – see plans	0.51	15,627	67	N	Residential
33	Varies – see plans	0.54	17,200	57	N	Residential
34	Varies – see plans	0.51	15,853	80	N	Residential
35	Varies – see plans	0.50	15,000	103	N	Residential
36	Varies – see plans	0.78	14,357	191	N	Residential
37	Varies – see plans	0.64	19,564	155	N	Residential
38	Varies – see plans	0.50	14,668	126	N	Residential
39	Varies – see plans	0.51	15,359	133	N	Residential
40	Varies – see plans	0.50	15,213	129	N	Residential
41	Varies – see plans	0.53	16,069	140	N	Residential

*Test pits were dug at each lot to confirm soils are suitable for development. See Section 11: Soils and Section 17: Wastewater Disposal of the SLODA for more information on the existing soils.
*Lots do not contain any shore frontage

COMMON OPEN SPACE

TOTAL AREA: 73 ACRES

ROAD LENGTH

A	924 FEET	G	310 FEET
B	365 FEET	H	530 FEET
C	385 FEET	I	390 FEET
D	1,288 FEET	J	1,120 FEET
E	645 FEET	K	440 FEET
F	380 FEET	L	220 FEET

DEVELOPMENT

TOTAL AREA: 72 ACRES

MIXED USE
MIN LOT SIZE: 20,000 SF
PARKING: 1:1
MIN RD. FRONTAGE: 50FT
MAX LOT COVERAGE: 50%
MAXIMUM BLDG. HTS: 35FT
SETBACKS:
ROADS: 20FT
SIDE/REAR: 10FT

SINGLE FAMILY RESIDENTIAL
SF DETACHED (2ST) 1500-3000 SF
MIN. LOT SIZE: 20,000 SF
MIN. RD. FRONTAGE: 50FT
MAX LOT COVERAGE: 50%
MAXIMUM BLDG. HTS: 35FT
SETBACKS:
ROADS: 20FT
SIDE: 10FT
REAR: 10FT

USE	LOT	ACREAGE
SINGLE FAMILY RESIDENTIAL		
	1	0.74
	2	0.91
	3	1.10
	4	1.67
	5	1.21
	6	1.25
	7	0.84
	8	0.88
	9	0.74
	10	0.55
	11	0.53
	12	0.56
	13	0.87
	14	1.08
	15	0.75
	16	0.63
	17	0.58
	18	0.50
	19	0.55
	20	0.50
	21	0.56
	22	0.80
	23	1.07
	24	0.71
	25	0.58
	26	0.53
	27	0.52
	28	0.52
	29	0.51
	30	0.51
	31	0.51
	32	0.51
	33	0.54
	34	0.51
	35	0.50
	36	0.78
	37	0.64
	38	0.50
	39	0.51
	40	0.50
	41	0.53
MIXED USE		
	1	4.9
	2	3.7
	3	1.4
	4	2.6
	5	3.0
	6	1.4
OPEN SPACE	7	4.7
	8	1.9
	9	2.1
COMMERCIAL / OPERATIONS		
	1	8.2

ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

HAMMOND RIDGE DEVELOPMENT

T1 R8 WELS, ME

PREPARED FOR

REVISIONS DATE

ISSUE DATE

JANUARY 9, 2025

SHEET TITLE

SUBDIVISION DEVELOPMENT PLAN

SHEET INFORMATION

L 1-02

NOT FOR CONSTRUCTION

APPENDIX F

MUNICIPAL SERVICES CAPACITY STATEMENT

PENOBSCOT COUNTY
UNORGANIZED TERRITORY ADMINISTRATION
George Buswell, Director, gbuswell@penobscot-county.net
Tina Morrison, Deputy Director, tmorrison@penobscot-county.net
97 Hammond Street, Bangor, ME 04401
Phone: 207-942-8566
Fax: 207-561-6181

Matthew Polstein
NEOC
PO Box 669
Millinocket, ME 04462

November 31, 2024

Dear Matthew,

As Director of the Unorganized Territories Administration here in Penobscot County, we are charged with maintaining fire and ambulance services (EMS) and solid waste services to all unorganized territories, including T1-R8 Wels.

We contract with neighboring towns to provide these services. For T1-R8 Wels, we work closely with the Town of Millinocket for fire, EMS, and solid waste. We met with Fire Chief Cote and Public Works Director Bryan Duprey from Millinocket and spent some time reviewing the proposed development of the Hammond Ridge Master Plan. Thank you for your assistance. The officials and service providers now have sufficient knowledge of the proposed development.

Rule Sections 10.24 & 10.25, Q (Fire and Ambulance Protection)
We currently have a contract with the Town of Millinocket for these services, which we review annually. Changes can be made to that contract in the future as needed.

Rule Section 10.24 A (Solid Waste Disposal)
We just signed a new three-year contract with the Town of Millinocket for solid waste collection and disposal at their transfer station. This contract is also reviewed annually so that adjustments can be made in the future as needed.

In summary, any development in an unorganized township will require the Penobscot County, Unorganized Territories Administration to review services needed and research ways to provide these services as development happens.

Sincerely,

George Buswell

George Buswell, Director

APPENDIX G

ELECTRICAL CAPACITY STATEMENTS

Gmail Sarah DelGizzo <sarah@northstar-planning.com>

Fwd: Black Cat Subdivision

Matthew Polstein <matt.polstein@gmail.com> Thu, Jun 17, 2021 at 10:37 AM
To: sarah@northstar-planning.com

Fyi

---------- Forwarded message ---------
From: **Matthew Polstein** <matt.polstein@gmail.com>
Date: Thu, Jun 17, 2021, 9:25 AM
Subject: Fwd: Black Cat Subdivision
To: Ben Smith <bsmith@northstar-planning.com>, Nick Aceto <na@acetola.com>

If this won't do please reach out to Mike for more!

---------- Forwarded message ---------
From: **McPherson, Michael** <Michael.McPherson@consolidated.com>
Date: Thu, Jun 17, 2021, 8:19 AM
Subject: Black Cat Subdivision
To: matt.polstein@gmail.com <matt.polstein@gmail.com>

Good morning Matt,

I understand that there are plans in the works for a subdivision on Black Cat Rd in T1 R8. It has been brought to my attention that you have some questions about the availability of fiber-fed internet services in the area. We do currently have the ability to provide fiber-based Carrier Ethernet Service to potential customers in that area – all requests at this time would need to be routed through our sales department. Feel free to reach out if you have any questions/concerns.

Thanks!

MIKE MCPHERSON | OSP Engineer II

D: 207.991.6725 | C: 207.217.7711

Michael.McPherson@consolidated.com

consolidated.com | NASDAQ: CNSL

cid:image001.jpg@01D69595.709D21A0

cid:image002.jpg@01D69595.709D21A0

4 attachments

image001.jpg
1K

image002.jpg
3K

January 10, 2025

Matt Polstein
Hammond Ridge Development Company, LLC
P.O. Box 669
Millinocket, ME 04462

RE: Hammond Ridge Development Company, LLC Service

Dear Mr. Polstein:

Versant Power has collaborated with the Hammond Ridge Development Company, LLC, to ensure appropriate planning is in place to serve its proposed phased development.

Specifically, Versant Power has incorporated Hammond Ridge Development's electricity demand forecast into the Company's sophisticated model of its distribution system. The model shows that the existing system can support approximately 50% of the initial phase of Hammond Ridge Development's project without upgrades.

Versant will continue to collaborate with Hammond Ridge Development in accordance with MPUC Ch. 395 Line Extension Rules ("CONSTRUCTION STANDARDS, OWNERSHIP, COST ALLOCATION, AND CUSTOMER CHARGES RULES FOR ELECTRIC DISTRIBUTION LINE EXTENSIONS AND SERVICE DROPS") to ensure the proposed development may be adequately served.

Sincerely,

/s/ David W. Norman
David W. Norman, PE
Manager, Regulatory Support & Market Based Solutions

APPENDIX H

HABITAT MANAGEMENT PLAN

Habitat Management Plan

For the Hammond Ridge Property of Matthew Polstein
Towns of T1R8WELS and T1R9WELS

Landowners: Hammond Ridge Development Corporation; Matthew Polstein & Johanna Szillery
PO Box 669; Millinocket, Maine 04462
207-723-3559 / matt.polstein@gmail.com

NRCS Details: Farm 3123 Tract 3021
CSP Contract Number: 2018 8112182211B
Plan Prepared November 22, 2024

Total Acreage: 1,435.9 acres
Forested Acreage: 1393.5 acres

Certification Statements

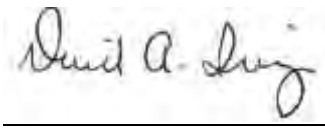
Landowner

I have reviewed this Plan and believe the habitat management recommendations will help me meet the goals and objectives for my property. I agree to follow this plan to ensure the sustainability of management.

_____ _____
Signature Date

Licensed Forester & Technical Service Provider

I certify that this Habitat Management Plan meets the requirements to participate with incentive funding of the USDA Environmental Quality Incentives Program and Conservation Stewardship Program. The plan meets applicable standards, specifications, statements of work, and program requirements, incorporating alternatives that are both cost-effective and appropriate to address the identified resource issues.



11/22/2024
Signature Date

NRCS District Conservationist

_____ _____
Signature Date

Drafted by David Irving, Maine Licensed Forester 3249, USDA TSP 12-8087
Shelterwood Forest Solutions — 90 Joan's Hill Road, Bangor, Maine 04401
207-944-9066; davidshelterwoodmaine@gmail.com

CONTENTS

INTRODUCTION

Mr. Matthew Polstein and his wife, Mrs. Johanna Szillery actively and intimately manage the Hammond Ridge Forest. Their vision for this property is one that optimizes, utilizes, but protects. They see a forest managed for sustainable timber production, but provides sociological benefits including outdoor education, recreation, **wildlife habitat**, native forest foods, and intrinsic values. They recognize management sometimes may involve intensive treatments, while other times it may mean passively allowing ecosystems to flourish without intervention.

In 2021, a new forest management plan for this property was drafted and provided unique and detailed guidance to improve the timber resources. At that time, the value and of habitat management was thoroughly discussed, and direction was provided but not in the terrific detail needed to precisely target those species of concern as highlighted by the Maine Wildlife Action Plan. Hence, this Habitat Plan is now presented to provide detailed guidance to species of need as well as other goals as highlighted below.

1. *First and foremost, biodiversity and protection of the greater ecosystem is important to the owners. Vertical and horizontal habitat structure will be improved and integrated across the landscape so that the property may be utilized by a wide variety of species, including game and non-game species alike.*
2. *Focal species for habitat management will be those identified is the State's Wildlife Action Plan but which likely utilize the Hammond Ridge Forest, including the little brown bat, American woodcock, chestnut sided warbler, and the spring salamander. Maintaining late successional conifer dominated forest conditions to promote habitat for American pine marten is also a keen interest and goal of the owners.*

Certification Systems

The specifications which this habitat management plan is drafted to meet those required of a plan for eligibility USDA-NRCS Environmental Quality Incentive Program (EQIP) and the Conservation Stewardship Program (CSP) under Conservation Enhancement Activity 645D; Wildlife Habitat Plan for Upland Landscapes.

The landowner is currently in Year #3 of a 5 year commitment with NRCS under the Conservation Stewardship Program. Planned conservation treatments to be performed in this CSP contract is shown in the table below:

Year	*Planned Conservation Treatment*	*Description*
2023	E612F	Inventory and Species Manipulation (if needed) on 85 acres of Planned or Current Maple Syrup Operation
2024	E666K	Creating Spatial & Structural Diversity by Patch Cutting 30 acres (6 separate patch cuts)
2024	E645D	Having a Wildlife Habitat Plan Drafted for the Subject Property
2025	E666L	Forest Stand Improvement on 100 acres to Improve Degraded Hardwood Stands
2025	384	Woody Residue Treatment on the 100 acres treated above
2026	E666D	Forest Management to Enhance Understory Vegetation

Outline of this Habitat Management Plan

In both narrative and technical form, this Habitat Management Plan is intended to serve as a historical, reference, and practical document. Portions of the 2021 FMP including the forest inventory data, were utilized in production of this Habitat Management Plan. This document will be more concise with more specific recommendations to improve habitat for the target focal species. The following outline provides what you'll find in the following pages.

1. **Part 1 will provide a detailed baseline of current forest conditions such as maps, legal considerations, access, recreation, soil types, topography, forest health concerns, protected habitats, geology, and hydrology.**

2. **Part 2 will involve descriptions and habitat requirements of the focal species listed on the preceding page, American woodcock, chestnut sided warbler, little brown bat, spring salamander, and the American pine marten.**

3. **Part 3 will include management recommendations on both the landscape and stand scales to improve habitat for the focal species. At the conclusion of the recommendations, results of planned management will be presented using the WHEP (Wildlife Habitat Evaluation Procedure) and respective WHEG (Wildlife Habitat Evaluation Guide), including mapped locations of planned landscape and stand scale treatments.**

Please note that activities and practices recommended as part of this plan are suggestions, and are not requirements of management. Decisions whether to move forward with recommendations found within this plan may ultimately be made by the owners. In the process of forest management on such a significant ownership, it would not be uncommon that some forest stand treatments may not be implemented in whole or in part with any forest management plan due to operational or financial constraints. Modifications to this plan, on strategic and tactical levels may be required due to potential changes in forest stand dynamics, local culture, policy, forest product markets, and operational considerations such as contractor availability or technology. Or if objectives are altered, the plan should be effectively amended and updated.

Mapping Procedures

Utilizing the Geographic Information System (GIS), boundaries of the property were drawn to provide reference to roads, trails, watershed, forest stands, soil types, significant habitat, and special sites. Data used to create the GIS was compiled from maps and data provided by the landowner, archived forest plans, municipal maps, GPS data collected in the field, and data obtained from the USDA and Maine Office of GIS. Property boundaries and acreage figures are informal estimates and maps are not presented or intended to be used as a legal survey.

Forest Inventory Procedures

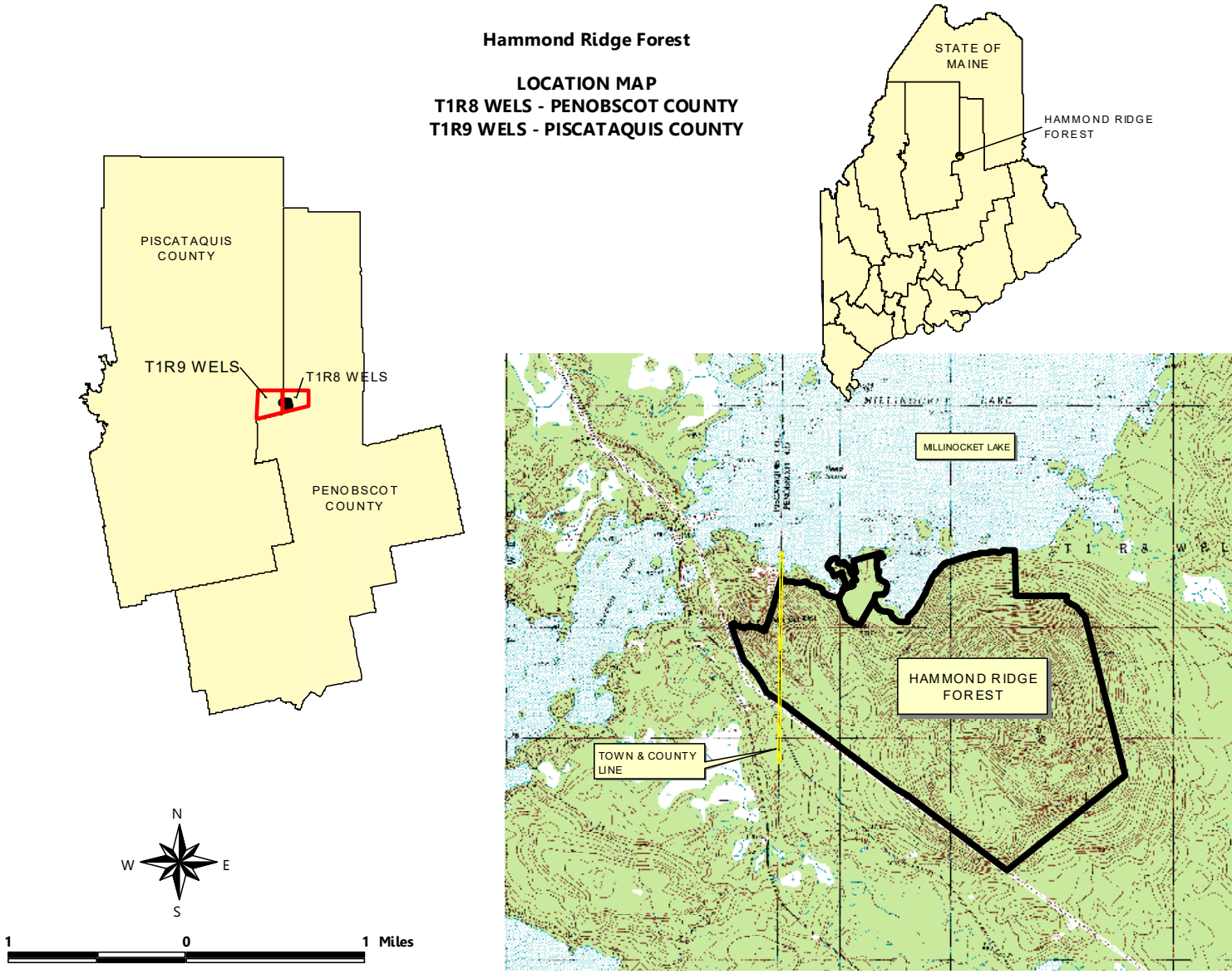
The property was traversed and sampled by Maine licensed foresters on several days in November 2020. Focus of the forest inventory was placed on commercial forest products with non-timber also tracked but not as intensively. Estimates of tree species composition, including basal area, density, and volume are the result of the forest inventory. A total of 200 sample points were sampled which provides an average basal area estimate of 83.3 square feet per acre with a 4.4% sampling error at a 90% confidence level. Trees larger than 5-inches DBH were tallied using a variable radius 10 BAF sample point. Species, DBH (Diameter at Breast Height),tree product grade, and canopy position were recorded for each counted tree Regeneration (trees less than 5-inches DBH) was estimated using fixed radius plots (1/1000th acre, and 1/100th acre plots) was tallied at each point center. The four dominant stems, either being seedlings, saplings, and poles were tallied within the plots. All data was modeled using ForestMetrix, a robust forest inventory model utilizing volume tables developed for use in New England.

PART 1 - Baseline of Forest Conditions

Property Location

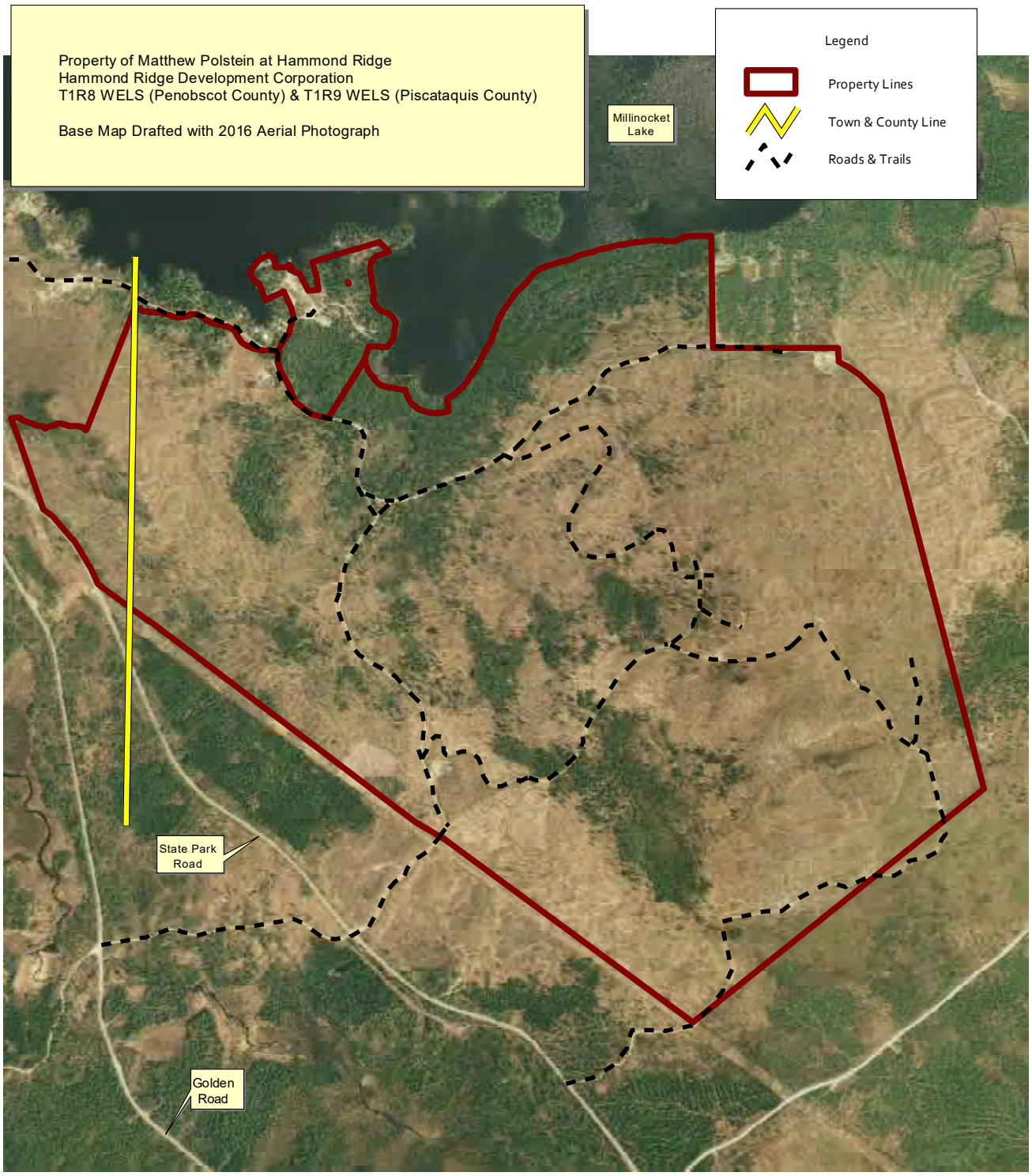
The property is located in the north central part of the Great State of Maine, split by the westerly boundary of Penobscot County and the easternmost boundary of Piscataquis County. See location map diagrams below.

The Hammond Ridge Forest is approximately 80 miles from Bangor, Maine and eight miles from Millinocket, Maine. Directions from the Town of Millinocket include traveling northward along the Millinocket Road (which is State maintained) for approximately seven miles. Prior to reaching the causeway between Ambajejus and Millinocket Lake, take a right onto the privately maintained Black Cat Road which will lead to the Forest.



Base Maps

Maps are provided below and on the following page to provide a reference relative to land use changes on the property and surrounding properties during the past decade.


Property of Matthew Polstein at Hammond Ridge
Hammond Ridge Development Corporation
T1R8 WELS (Penobscot County) & T1R9 WELS (Piscataquis County)
Base Map Drafted with 2016 Aerial Photograph
Millinocket Lake
Legend
Property Lines
Town & County Line
Roads & Trails
State Park Road
Golden Road
600 0 600 1200 1800 Feet
N
W
E
S
Map Drafted by David Irving, Maine LF3249
December 8, 2021
Using Data Provided by Maine OGIS
Map is not a legal survey

Legal Information

The following information is a summary of rules and regulations which pertain to forest management of this property. Regulations may change and they often do, but it is the responsibility of the owner to comply with the regulations in effect at the time forest management activities are conducted.

- The Hammond Ridge Forest is currently certified as a Tree Farm with the American Tree Farm System and is mostly classified in the Maine Tree Growth Tax Program, aside from areas developed.

- Slash & Brush: Specific set-backs are required for brush and slash disposal from management activities which may occur near boundary lines, public roadways, and lake frontage. The purpose of the law is to minimize fire hazard and aesthetic concerns.

- Forest Operations Notifications (FON) and Landowner Report: Maine Forest Service (MFS) Rules Chapter 26. These rules require that landowners notify the Maine Forest Service of planned timber harvesting. A Landowner Report must be filed at the conclusion of each year which a FON is on file.
- The property is not subject to the Liquidation Harvesting Rule since the property has been owned for more than 5 years.

- Clearcutting Rules Chapter 20. These rules regulate the establishment, arrangement and regeneration of clearcuts. Clearcuts are harvests which leave an area 5 acres or greater with less than a minimum stocking of trees.

- Essential or Significant Wildlife Habitats (EWH, SWH) as designated by the Maine Department of Inland Fisheries and Wildlife (DIF&W). EWH or SWH may or may not have regulatory impacts on forest management activities, depending on whether they have been legislatively adopted and mapped. Special wetland habitat (IWWH) was found by the MNAP review. See pages 17-20 for more information.

- Threatened or Endangered Species: Federal and/or State Endangered or Threatened Species are designated by the US Department of the Interior and/or the Maine DIF&W, and may have protections regarding their habitats and/or restrictions on certain activities near these habitats. The property lies within critical habitat for the federally endangered species Atlantic salmon and threatened Canada lynx. See pages 17-20 for more information.

- The property is located within jurisdiction of the Maine Land Use Planning Commission. Protection of the shoreland zones, the forested area along the edges of wetlands, flowing waters, and water bodies occurs through different rules which vary with location and type of activity. The shoreland zone includes land within 250 feet of the normal high water line of any great pond or river, or the upland edge of a freshwater wetland, and all land within 75 feet of, horizontal distance, of the normal high-water line of a stream. Activities in this zone, Including but not limited to harvesting, must meet the minimum standards established

- All work on the subject property shall adhere to Maine's Best Management Practices (BMP's) for soil protection and water quality. Working with a licensed forester is advised to assure this is achieved particularly because there are seeps and hydric soils present. The Maine Forest Service provides an excellent manual which provides information and procedures for implementation of best management practices to prevent, minimize, or mitigate soil loss, erosion, and water quality concerns, particularly on steep slopes.

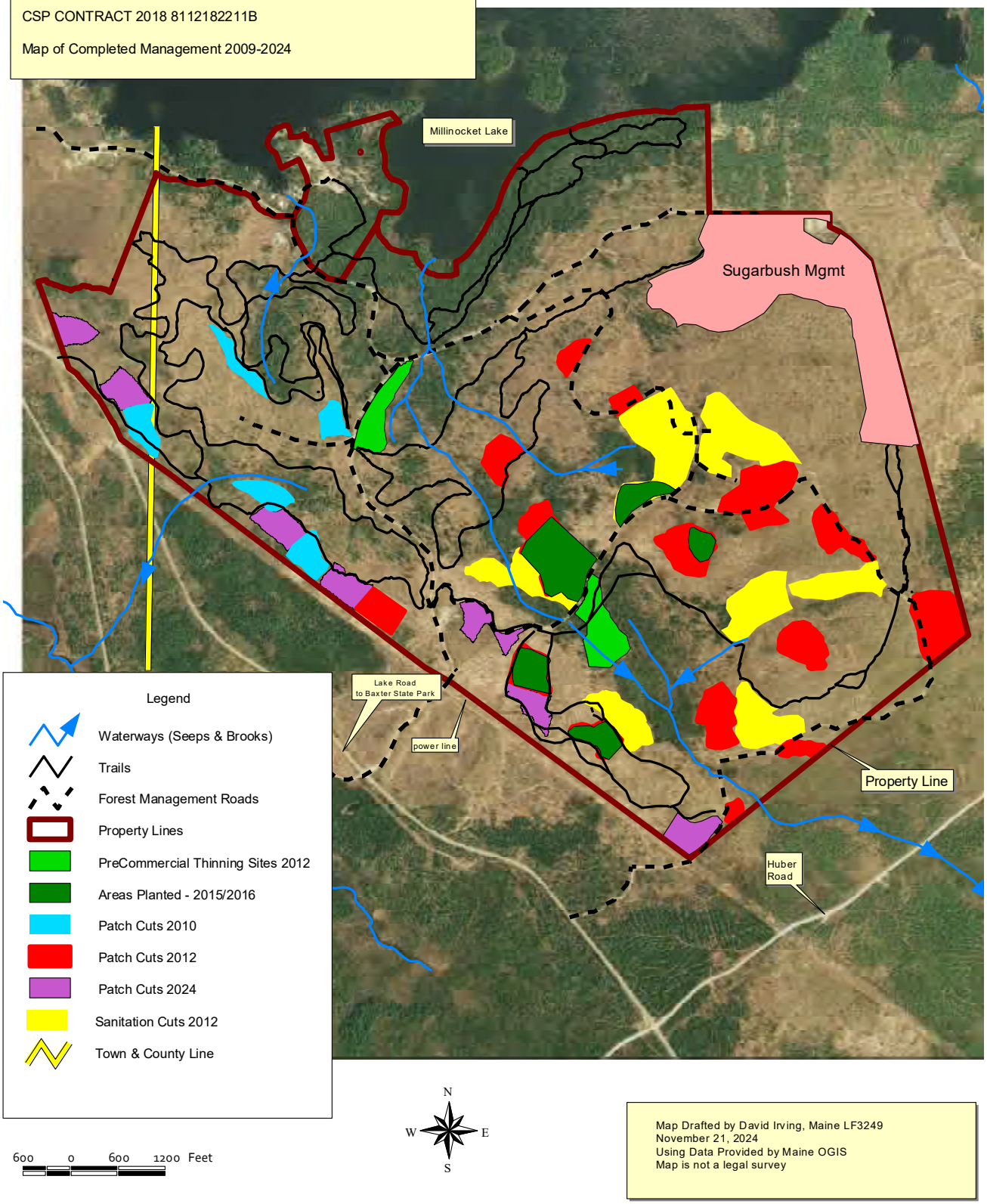
Property & Management History

The Hammond Ridge Forest was purchased in 2007 from Katahdin Timberlands, formerly known as Great Northern Paper Company. Except for the Twin Pine Camps area along the shores of Millinocket Lake, the Hammond Ridge Forest area has traditionally and primarily been utilized for timber management. Most of the Hammond Ridge Forest has been commercially logged at some point in its history and at various intensity and extensiveness based on species mix, tree size, and tree quality.

Most of the southern slope of Hammond Ridge was nearly clearcut approximately 40 years ago. It is estimated that this occurred due to the presence of spruce and fir (targeted by Great Northern Paper to feed its mill), as well as the prominence of higher quality sugar maple and yellow birch. It is also guessed that close proximity to town and limited visual exposure also played important roles in this areas being harvested to this significant level. The northerly side of Hammond Ridge has seen limited timber harvest activity; most likely due to poor quality stems. The westerly portion of the Forest in the general vicinity of Black Cat Mountain originated from a forest fire which swept through the area more than 50 years ago. This has led to mostly an even-aged condition in this area.

Since 2007, the owners and Shelterwood Forest Solutions have completed a number of projects in partnership with the USDA Natural Resources Conservation Service, utilizing funding early on from the WHIP Program, but more recently from the EQIP Program. The CSP (Conservation Stewardship Program) was also utilized in 2012-2016 and again now from 2022 to present. Based on the forest management plan drafted in 2009 utilizing funding made available from the Maine Forest Service Woodswise Program, all projects have been focused to improve forest health and timber quality. The table below provides a recap of projects which have been implemented over the past decade. As discussed earlier, the owners are now in Year 3 of a current CSP (Conservation Stewardship Program) contract with NRCS, with completed enhancements shown as the bottom three rows, one which is the Habitat Management Plan you are currently reading. A map is provided on the following page to visually depict the location of these projects.

Property History of Partnership with the Maine Forest Service and the USDA - NRCS Conservation Programs								
Year	**Funding Agency**	**Program**	**Practice**	**Description**	**Funded Units**		**Actual Installed Units**	
2009	Maine Forest Service	Woodswise		Stewardship Plan	1480	acres	1480	acres
2010	NRCS	WHIP	647	Patch Cuts for Woodcock	12	acres	12	acres
2012	NRCS	EQIP	666	Sanitation Cuts	60	acres	75	acres
2012	NRCS	EQIP	666	Crop Tree Release	5	acres	5	acres
2012	NRCS	CSP	666	Patch Cuts	69	acres	80	acres
2017	NRCS	EQIP	472	Access Control	1	gate	1	gate
2010	NRCS	EQIP	647	Light Mowing	4	acres	4	acres
2012	NRCS	CSP	PLT 17	Forest Openings	68.5	acres	70	acres
2013	NRCS	EQIP	655	Forest Trail Improvement	4000	feet	7000	feet
2013	NRCS	EQIP	578	Culverts	15	culverts	15	culverts
2014	NRCS	EQIP	666	PreCommercial Thinning	5	acres	7	acres
2014	NRCS	EQIP	666	Crop Tree Release	5	acres	9	acres
2014	NRCS	EQIP	666	Brush Management - Chemical	20	acres	20	acres
2014	NRCS	EQIP	666	Competition Control - Chemical	50	acres	74	acres
2016	NRCS	EQIP	666	Tree Establishment	20	acres	20	acres
2017	NRCS	EQIP	666	Competition Control - Mechanical	75	acres	75	acres
2017	NRCS	EQIP	666	PreCommercial Thinning	25	acres	25	acres
2017	NRCS	EQIP	655	Forest Trail Improvement	4400	feet	4400	feet
2017	NRCS	EQIP	472	Access Control	2	gates	2	gates
2017	NRCS	EQIP	587	Culverts	1	culvert	1	culvert
2023	NRCS	CSP	E612F	Maple Sugarbush Mgmt	85	Acres	85	acres
2024	NRCS	CSP	E666K	Patch Cutting	30	acres	31	acres
2024	NRCS	CSP	E645D	Wildlife Habitat Plan	1400	acres	1400	acres


Property of Matthew Polstein at Hammond Ridge
Hammond Ridge Development Corporation
T1R8 WELS (Penobscot County) & T1R9 WELS (Piscataquis County)
CSP CONTRACT 2018 8112182211B
Map of Completed Management 2009-2024
Millinocket Lake
Sugarbush Mgmt
Lake Road to Baxter State Park
power line
Property Line
Huber Road
Legend
Waterways (Seeps & Brooks)
Trails
Forest Management Roads
Property Lines
PreCommercial Thinning Sites 2012
Areas Planted - 2015/2016
Patch Cuts 2010
Patch Cuts 2012
Patch Cuts 2024
Sanitation Cuts 2012
Town & County Line
600 0 600 1200 Feet
N
W
E
S
Map Drafted by David Irving, Maine LF3249
November 21, 2024
Using Data Provided by Maine OGIS
Map is not a legal survey

Recreation

The property is open to courteous use by the general public. Hunting, fishing, hiking, photography, and general observance of nature is permitted and will continue to be as long as the land is respected by all those using it. More specifically, traditional as well as proposed recreational uses of the Hammond Ridge Forest are described below.

- **Snowmobiling-** The forest for many years has been a lifeline to the larger, more expansive trail system to the north, including Baxter State Park. A Maine ITS trail runs along a portion of the perimeter of the forest. A smaller spur trail leads to the Twin Pine Camps.
- **Deer Hunting** – Deer hunters are permitted to use the forest from October through December during the open season only as long as only bucks with antlers are harvested. If or when the deer herd rebounds from historically low levels in the region, the owners would like to implement a Quality Deer Management Program on the forest.
- **Grouse and woodcock hunting** – An objective of forest management is to enhance and create grouse and woodcock habitat thereby increasing hunting opportunities. It would be desirable if this objective may lead to a more diverse clientele visiting the owners sporting camps.
- **Trail system** – A primary land ownership objective is to construct an Olympic certified cross country ski trail system throughout the forest. This trail system will eventually be used to host internationally recognized competitions. To this date, the owners have invested substantial finances and time in locating, clearing timber, and building the trail system. During summer and fall months when the trails are dry, they will be used as a hiking and mountain bike system. Portions will also be used to provide access to the demonstration areas. It is noted that the trails will **not** be used as an ATV trail system.

Access Network

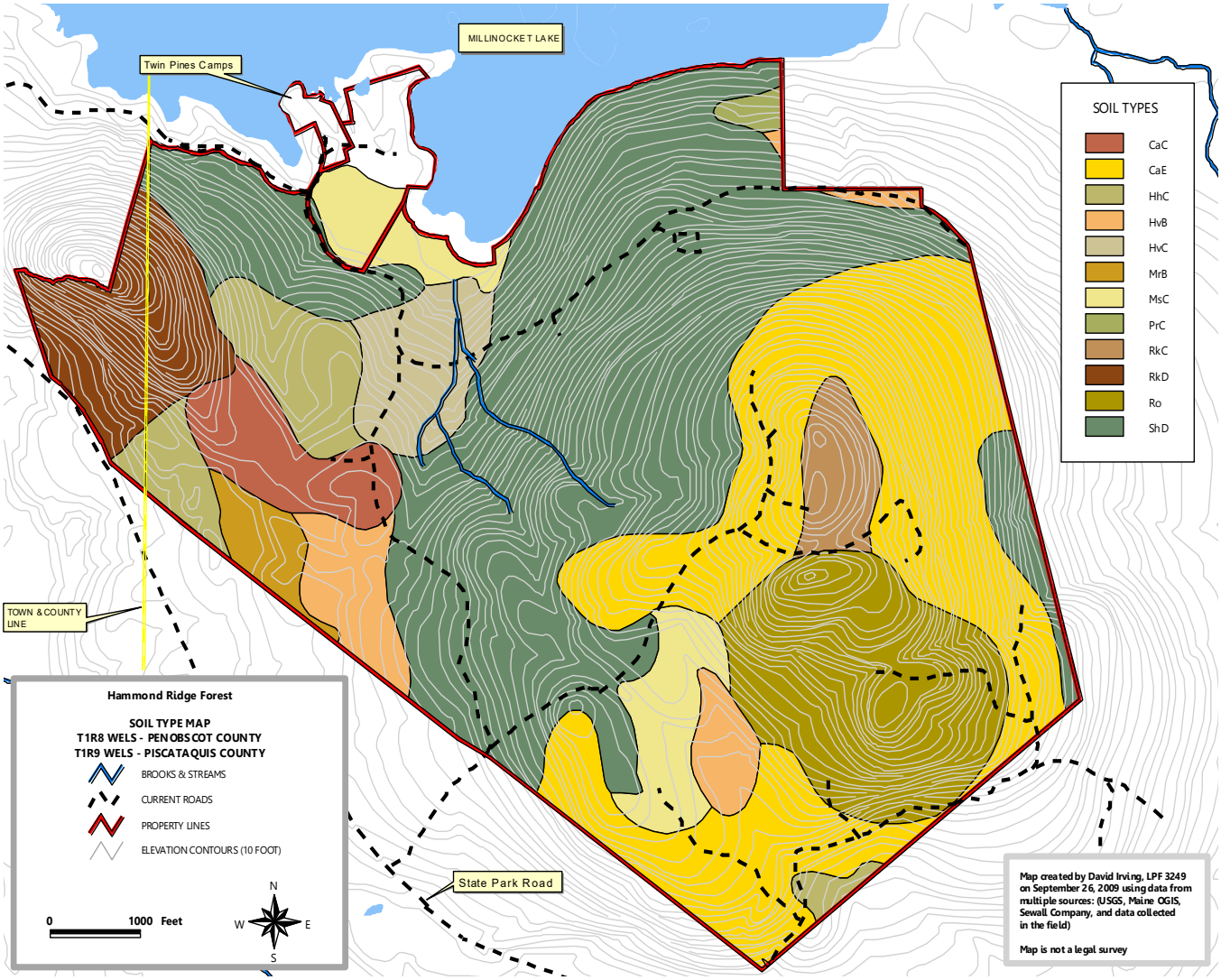
- The earlier mentioned Black Cat Road ends at Twin Pine Camps, from where the Church Lot Road originates and bisects the northerly portion of the Hammond Ridge Forest.
- In 2007 and 2008, Mr. Polstein contracted the services of Mr. John Morton to layout an Olympic grade cross-country ski trail system throughout the property. After more than a full decade of trail construction, the trail system now exceeds 13 miles.
- Access is currently suitable for implementation of management activities. The current roads on the Hammond Ridge Forest may be used for timber landing purposes during frozen ground conditions and sensitive soil areas may be traversed during this time as well. Summer season activities are limited to areas which are well drained in both operable forestland and landing sites.
- Vehicular use of these roads during the spring (March through May) and fall (October through December) for any activity and by any entity should be monitored closely to prevent surface rutting and potential erosion due to the freeze/thaw patterns occurring during those months. Timber trucking should not be permitted during these months.

Forest Soils & Topography

Nine soil types are located on the Hammond Ridge Forest. The soils are described in the table below.

- Using Woodland Productivity Ratings of the soils provided by the Natural Resource Conservation Service, 58% of the Forest has at least a High Rating of productivity.
- A small area (6%) of the Forest is considered to have hydric soils.
- More than 40% of the Forest is considered to have soils which are Highly Erodible, especially if the site has a slope greater than 15%.
- Most of the forest ownership is considered as upland. The forest's highest elevation is approximately 1100 feet above sea level, at the height of land on Hammond Ridge. The lowest elevation of approximately 500 feet would be found along Millinocket Lake, along the northerly perimeter of the forest.
- The surface typically has slopes greater than 3% in grade and in many places has the presence of much steeper slopes, boulders, ledge, and other geologic formations.
- Some areas (mostly within 100 feet of the channel) along the perennial or intermittent brooks have considerably steep slopes (>10% grade). It is assumed these steep slopes have been created over time as soil has slowly been eroded during peak water flows.

Soil Type	Soil Type & Description	Woodland Productivity Class/Rating	Special Notes
Ca	Canaan extremely rocky silt loam. Very shallow to bedrock, rapidly drained glacial till soil with low water holding capacity. Rapid permeability.	6 / Low	Highly Erodible soil
Hh	Hermon extremely stony sandy loam. Deep well drained glacial till soil with low water holding capacity and rapid permeability. Large granite stones occupy at least 50% of the surface.	8 / High	Spectacular boulder formations
Hv	Howland very stony loam. Deep moderately well drained glacial till soil with high moisture holding capacity. Acidic with very firm subsoil.	8 / High	Highly Erodible soil
Mr	Monarda & Burnham very stony silt loam. Deep, poorly drained glacial till soil with high seasonal water table. Slow permeability with a firm gravelly loam subsoil.	8 / High	Hydric soil
Ms	Monarda & Burnham extremely stony silt loam. Deep, poorly and very poorly drained glacial till soil with a water table near the surface. Slow permeability with a very firm gravelly loam subsoil. Listed as a hydric soil. Many large stones on the surface and in the soil.	8 / High	Hydric soil
Pr	Plaisted very stony loam. Deep well drained glacial till soil with moderate water holding capacity and moderate permeability. Firm gravelly subsoil with 12-25 inch stones scattered on the surface.	8 / High	Highly erodible soil
Rk	Rockland, Canaan material, sloping in some areas and strongly sloping in others. Very shallow (0-10inches) to ledge, excessively drained sandy soil with low moisture holding capacity and rapid permeability.	6 / Low	Highly erodible soil
Ro	Rock Outcrop. Very little or no soil with numerous rock outcrops.	6 / Low	Rare plant habitat significance
Sh	Stony land, hermon material and strongly sloping. Deep, well drained coarse sandy soils with many large granite boulders, low water holding capacity, and rapid permeability.	8 / High	Spectacular boulder formations



Forest Health

Existing poor health was identified with balsam fir and American beech. The concern with beech is significant.

Balsam Fir

Much of the species composition on the forestland of the subject property is comprised of balsam fir. Much of the fir is relatively young of age (less than 40 years) while a modest volume is older than 40 years. This older age class of fir is generally in poor health with visual evidence of mortality to occur in the short-term (less than 10 years from now).

American Beech

The invasive and non-native beech bark disease was found widespread on the property. Most American beech trees have been affected by the beech bark disease, a symbiotic relationship between an insect, Cryptococcus fagisuga and fungus, Nectria galligena. These agents work together in diminishing young, vigorous beech into slow-growing, poorly formed trees with much reduced commercial and biological value. Beech in this condition may consume a significant amount of growing space and prevent other more valuable trees, even disease resistant beech from thriving.

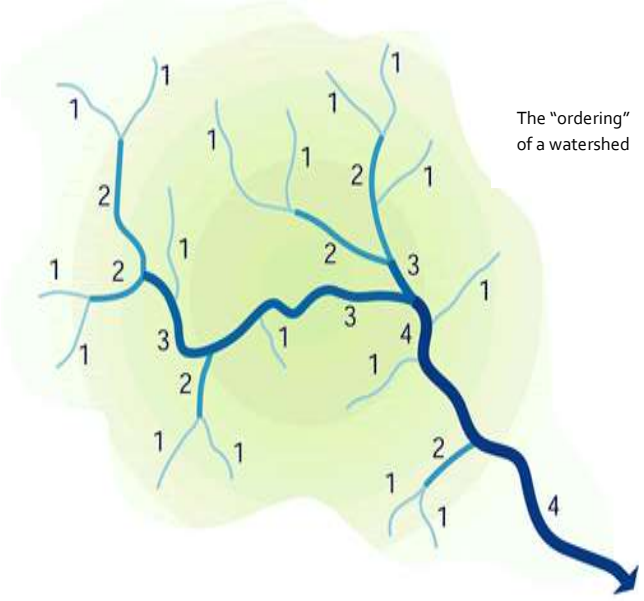
Invasive Species

Invasive plant species were not observed.

Watershed & Hydrography

The Hammond Ridge Forest is completely within the Penobscot River watershed, a The Penobscot River is 350 miles long, making it the second longest river in Maine and the longest river entirely in Maine. Its drainage basin contains 8,610 square miles. It arises from four branches in several lakes flows generally east. After the uniting of the West Branch with the East Branch at Medway, it flows south, past the city of Bangor, where it becomes navigable. It empties into the Atlantic Ocean in Penobscot Bay. *Data courtesy of wikipedia.org*

The watershed is known world-wide for its freshwater sport fishery of landlocked salmon and smallmouth bass. In addition, an Atlantic salmon and other anadromous species restoration effort is underway on the lower portions of the river, where hydropower dams do not hinder migration of adults returning to spawn. For these specific fishery reasons, as well as too many others to discuss in this forest management plan, it is stressed that protecting and enhancing the quality of the water resource located on the Hammond Ridge forest is of primary importance. Applicable to this ownership are the first and second order streams, brooks, and ephemeral areas which provide the basis of water supply for the system.



The "ordering" of a watershed

Map courtesy of Karl Musser

Timber management along these waterways (within management buffers) should occur to maintain forest health and structure. The extent and level of management will be discussed in the following sections and pages of this plan. The following table provides guidance.

	Protection Area	Timber Management Area
Vernal Pools	50-feet from the perimeter – NO HARVEST	100-feet beyond protection area line – max. 25% removal per 10 years; maintain min. of 75% canopy of >30-foot trees 200-feet beyond protection area line- no patches larger than ¼-acre
Ephemeral Seeps	50-feet from the edge of the seep associated vegetation	100-feet beyond protection area line – max. 40% removal per 10 years 200-feet beyond protection area line- no patches larger than ¼-acre
Perennial & Intermittent Brooks	100-feet from channel	100-feet from high-water line – No Management
Shrub Wetland	50-feet from the wetland edge – NO HARVEST	100-feet beyond protection area line – max. 40% removal per 10 years 200-feet beyond protection area line- no patches larger than ¼-acre
Riparian Forest	500-feet from upland edge	100-feet beyond protection area line – max. 25% removal per 10 years; maintain min. of 75% canopy of >30-foot trees 200-feet beyond protection area line- no patches larger than ¼-acre 500-feet beyond protection area line – max. 40% removal per 10 years

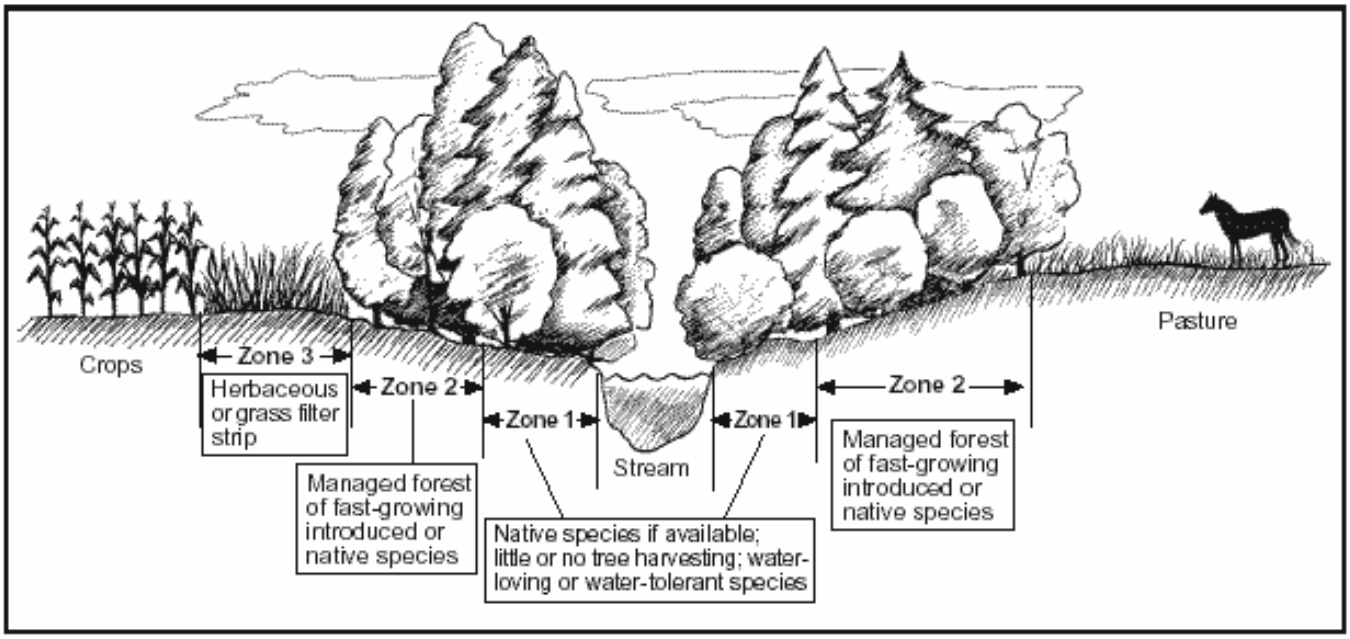
Vernal Pools One vernal pool was identified. Vernal pools are critical habitat for an assortment of wetland species, primarily being in the insect and amphibian species groups.

Ephemeral Seeps were found throughout the property. Seeps are micro-site wetland communities associated with groundwater movement, and are located near the "toes" of slopes, or on the "benches" of small ridges on this property. Seeps are usually feed into first and second-order brooks, thereby making them the de-facto "headwaters" of the watershed. Trees and shrubs are absent in some of the seeps, but herbaceous cover is usually thick and diverse. Species associated with seeps closely reflect vernal pools. Their precise location on the forest is not mapped but should be identified when operational planning for activities is completed. When identified, the GIS should be updated with the location data.

Perennial and Intermittent Brooks are first and second order watercourses which have defined channels, and wetland vegetation, as well as a complete forest canopy overtopping them. These waterways are important for the following reasons, among many others:

- They provide forested micro-habitats for forest dwelling species, wetland loving species, and aquatic species.
- Spawning and rearing habitat for brook trout.
- Maintenance and enhancement of the water quality of the watershed. The upland forest surrounding the brooks provides a filter-effect, filtering eroded soil and other possible contaminants from the water before it reaches the downstream habitat.

Riparian Forest is the area from the high-water mark of Millinocket Lake to a point approximately 500 feet inland, and is considered to be potentially a special wildlife habitat. Riparian areas are a special part of the landscape as they differ from upland forests in their dynamics and patterns and require different approaches to management. They support a greater diversity of plant species and communities than the upland forest. Their associated aquatic environments provide habitat to wildlife not found in the uplands. For these reasons, the riparian area is a focus of special management guidelines.

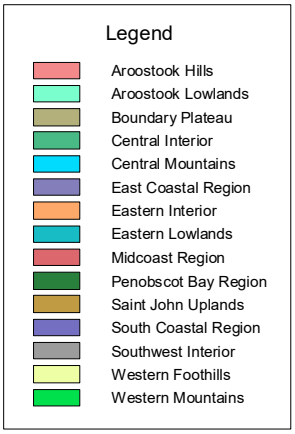


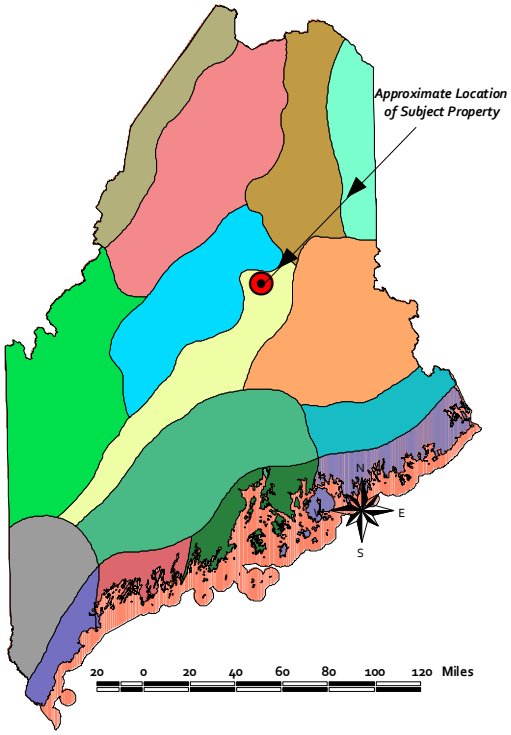
A riparian forest buffer includes zone 1, the area closest to the waterbody or course, and zone 2, the area adjacent to and up gradient of zone 1. Trees and shrubs in zone 1 provide important wildlife habitat, litter fall for aquatic organisms, and shading to lower water temperature. This zone helps stabilize streambanks and shorelines. Trees and shrubs in zone 2 (along with zone 1) intercept sediment, nutrients, pesticides, and other pollutants in surface and subsurface water flows. Zone 2 can be managed to provide timber, wood fiber, and horticultural products. A third zone, zone 3, is established if periodic and excessive water flows, erosion, and sediment from upslope fields or tracts are anticipated. Zone 3 is generally of herbaceous plants or grass and a diversion or terrace, if needed. This zone provides a "first defense" to assure proper functioning of zones 1 and 2.

Biophysical Considerations

Understanding the physical condition of forestland is an integral part to sound forest management. One tool in identifying important attributes to be considered while managing a forest is to review characteristics of the biophysical region which the ownership lays. A document titled "The biophysical regions of Maine: Patterns in the Landscape and vegetation". (McMahon, J.S. 1990) provides a resource to do this. A map of the biophysical regions is provided below with the property plotted according to its geographic location. The property lies at the northerly extent of the Western Foothills Region.

Property of Matthew Polstein
T1R8 and T1R9 WELS, Penobscot County, Maine
Property is located within the Western Foothills Region





Western Foothills Region

Physiography: The Western Foothills parallel the Western and Central Highlands in a 10 to 20 mile wide band. Elevations in the region average between 600' and 1000'. The terrain is hilly. The entire region is underlain by metasedimentary rocks except for several small plutons of granite or granodiorite in the southwest. Next to the Aroostook Lowlands, some of the largest calcareous formations occur here.

Climate: The climate is intermediate between that of the Western Mountains and the Central Interior. Mean maximum July temperature is 79° F and mean minimum January temperature is 5° F. Average annual precipitation is 43", while average annual snowfall is 100". The frost-free season ranges from 110 to 140 days.

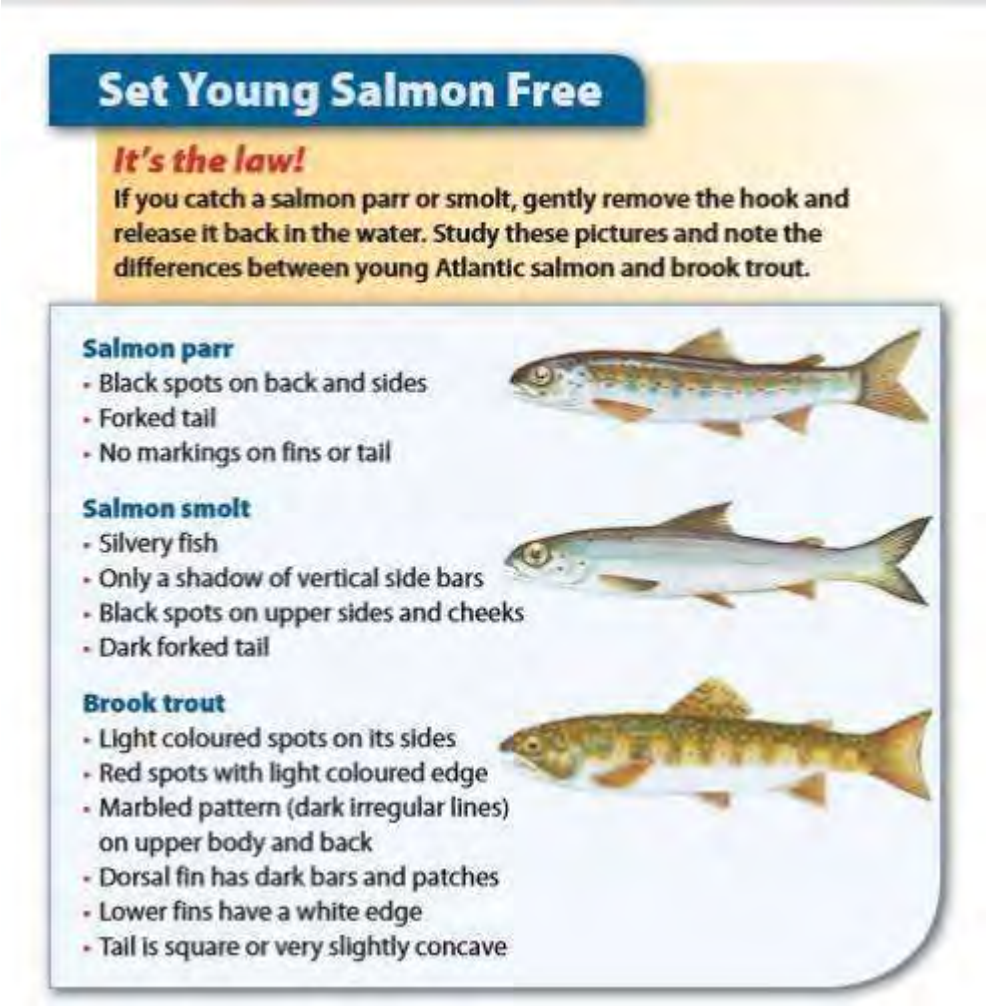
Surficial Geology and Soils: The northern portion of the region is dominated by the largest ribbed moraine in the state. The landscape consists of numerous hummocks and short parallel ridges. These are most conspicuous in the Millinocket and Pemadumcook Lakes area. Thin drift, occasional bedrock, and till composed of mica schist and phyllite with some granite and gneiss provide the parent material in southern sections. Valley soils north of the moraine are generally deep, somewhat poorly drained Telos and poorly drained Monarda loams, with shallower, better drained Monson and Elliottsville soils on upper slopes. Soils on the moraine tend to be deep, moderately well drained, coarse loamy Dixfield and stony excessively drained Hermon soils, while lower slopes are typically deep, poorly drained Brayton and Daigle soils. Soils in central and southern portions are generally better drained silts and fine sandy loams. Ice-contact glaciofluvial deposits and stream alluvium are scattered throughout the region.

Vegetation and Flora: The western boundary of the region roughly follows the 1000' contour, which marks a transition from temperate forest species to boreal species. In addition to the species that reach western limits between the Saint John Uplands and Aroostook Hills, a number of other woody plants are rare or do not occur west of the 1000' contour in this region. These include Amelanchier canadensis, Carya ovata, Cephalanthus occidentalis, Comptonia peregrina, Cornus ammomum, Crataegus macrocantha, Fraxinus pennsylvanica, Prunus serotina, Rubus hispidus, Rubus occidentalis, Rubus pensylvanicus, and Viburnum acerifolium. Woody species richness increases markedly from west to east.

Rare, Threatened, and Endangered Species

Evidence of State or federal rare, threatened, or endangered species on the properties was not observed during the resource inventory. A complimentary review was performed by the Maine Natural Areas Program. Their review produced linkage of the properties to critical habitat for Atlantic salmon and brook trout. The generous complimentary report and map generated as part of this review is provided below and on the following page.

- In 2009, the US Fish and Wildlife Service listed Atlantic salmon (Salmo salar) populations within the Penobscot watershed as endangered, in addition to the watershed itself as being critical habitat. This impacts management of this property to a minimal extent. The first and second order brooks described earlier **possibly** are nursery waters for Atlantic salmon. If new structures across or over flowing waters are ever proposed, an environmental assessment must be administered prior to doing so; none are proposed.
- The Penobscot watershed has resident populations of brook trout (Salvelinus fontinalis) as well as many other native Maine fish species. The first and second order brooks described earlier **likely** are nursery waters for brook trout.



MAINE NATURAL AREAS PROGRAM
(207)287-8044 or maine.nap@maine.gov

Forest Management Plan Review

Forester: *David Irving* Landowner: *Hammond Ridge* Lot Name: *Plan 10 Lots 2, 3, 3.1*
Date Received: *5.10.2021* Town: T1R8 and T1R9 WELS County: *Penobscot* MDIFW Region: *F*

PLANT, ANIMAL, AND HABITATS	Documented to occur at the site? YES	NO	Contact the following biologist to discuss conservation considerations
Plants: rare, threatened and/or endangered *If yes, see attached summary table.*	☐	☒	
Natural Communities: rare and/or exemplary *If yes, see attached summary table.*	☐	☒	
Animals: rare, threatened, or endangered *If yes, see attached summary table.*	☒	☐	MDIFW Regional Wildlife Biologist Mark Caron, 732-4132
Mapped Essential Wildlife Habitats:			
Roseate tern	☐	☒	
Piping plover and Least tern	☐	☒	
Mapped Significant Wildlife Habitats:			
Deer wintering area	☐	☒	
Inland waterfowl and wading bird habitat	☐	☒	
Tidal waterfowl and wading bird habitat	☐	☒	
Significant vernal pool	☐	☒	
Shorebird feeding/roosting area	☐	☒	
Wild brook trout habitat	Yes ☒	Unknown ☐	MDIFW Assistant Regional Fisheries Biologist Kevin Gallant, 732-4131
Atlantic Salmon:	Yes	No	USFWS Biologist Wende Mahaney, 902-1569
Salmon critical habitat	☒	☐	For more information: www.fws.gov/mainefieldoffice/Atlantic_salmon.html
Salmon stream habitat	Yes ☐	Unknown ☒	
Canada lynx: The town & parcel may provide habitat for lynx	☒	☐	MDIFW Regional Wildlife Biologist Mark Caron, 732-4132

LANDSCAPE CONTEXT	YES	NO
Does parcel intersect with a Beginning with Habitat Focus Area? Focus Area Name: Additional information on this focus area may be available at www.maine.gov/dacf/mnap/focusarea	☐	☒
Is the parcel adjacent to or on Conservation Lands? Owner: Ownership type: ☐ Fee ☐ Easement Area Name:	☐	☒
Is the parcel within an area identified by MNAP as a potential inventory site for undocumented rare plants or exemplary natural communities? If so, MNAP will contact the landowner for permission prior to any inventory work.	☐	☒

Review completed by: LRS
Date: 5.13.2021
MNAP #: 2021-05-13-LS-05

MAINE NATURAL AREAS PROGRAM
(207)287-8044 or maine.nap@maine.gov

Forester: *David Irving* Landowner: Hammond Ridge Lot Name: *Plan 10 Lots 2, 3, 3.1*

Summary Table: Plants, natural communities, and animals documented to occur at the site

Feature Name	State Status [a]	State Rank [b]	Global Rank [c]	SGCN Priority [d]	Additional Information
Tidewater Mucket	T	S2	G3G4	1	Millinocket Lake
Yellow Lampmussel	T	S2S3	G3G4	1	Millinocket Lake

[a] **State Status (please note that all species with E, T, or SC status are listed as Species of Greatest Conservation Need in the State Wildlife Action Plan)**

- **E** Endangered; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- **T** Threatened; Rare and, with further decline, could become endangered; or federally listed as Threatened.
- **SC** Special concern; A species that does not meet the criteria for E or T, but is particularly vulnerable and could easily become a Threatened, Endangered, or Extirpated Species.

[b] **State Rank (State Rarity Rank)**

- **S1** Critically imperiled in Maine because of extreme rarity or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- **S2** Imperiled in Maine because of rarity or because of other factors making it vulnerable to further decline.
- **S3** Rare in Maine.
- **S4** Apparently secure in Maine, includes S4B for breeding birds and S4N for nesting birds.
- **S5** Demonstrably secure in Maine.

[c] **Global Rank (Global Rarity Rank)**

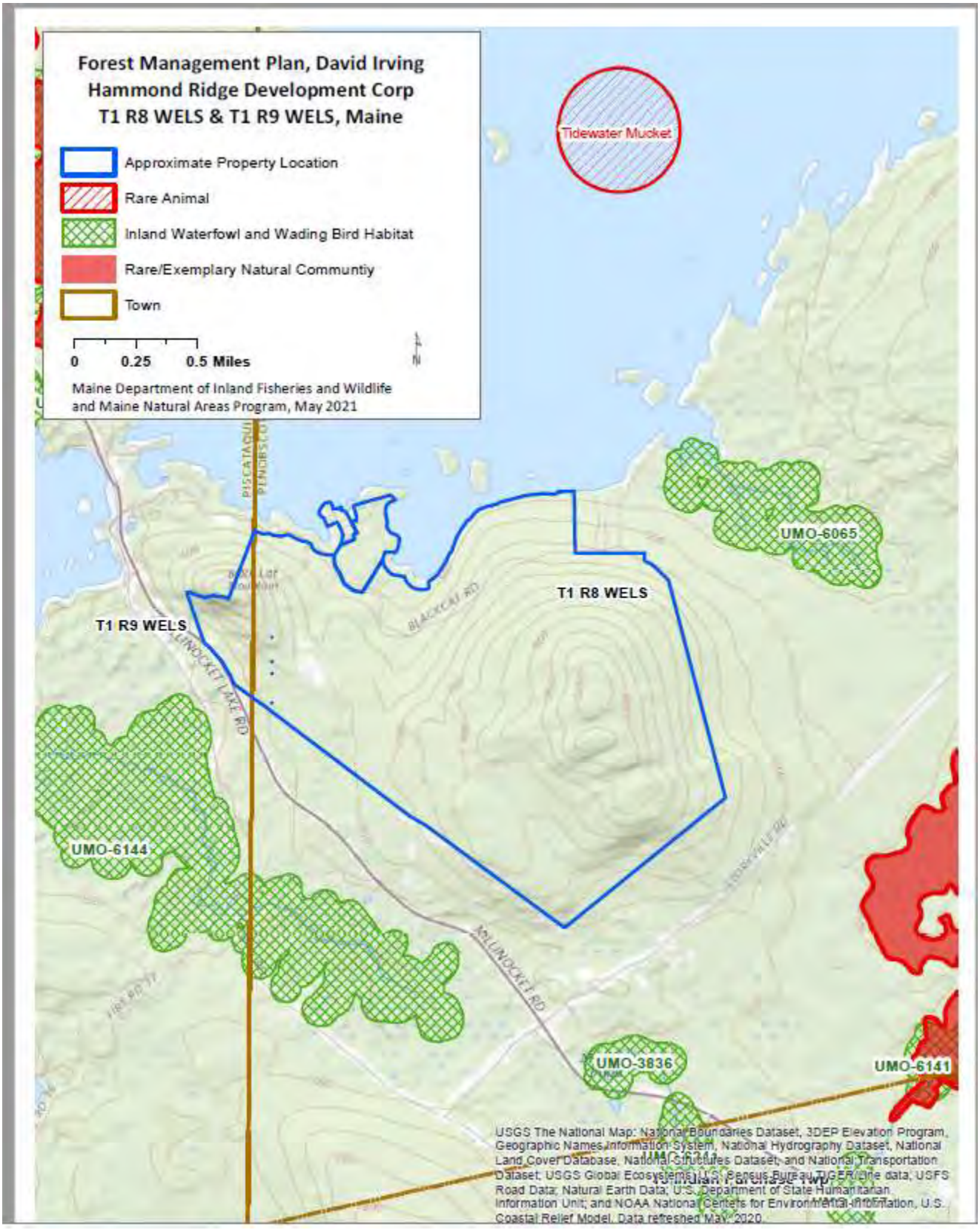
- **G1** Critically imperiled globally because of extreme rarity or because some aspect of its biology makes it especially vulnerable to extinction.
- **G2** Globally imperiled because of rarity or because of other factors making it vulnerable to further decline.
- **G3** Globally rare.
- **G4** Apparently secure globally.
- **G5** Demonstrably secure globally.

[d] **SGCN Priority**

Describes the prioritization of Species of Greatest Conservation Need based primarily on risk of extirpation, population trend, endemicity, and regional conservation responsibility. **Priority 1** is Highest Priority; **Priority 2** is High Priority; **Priority 3** is Moderate Priority. For more information, please visit Maine's State Wildlife Action Plan (SWAP) – 2015, http://www.maine.gov/ifw/docs/2015%20ME%20WAP%20All_DRAFT.pdf.

[e] **EO Rank (Element Occurrence Rank)**

Describes the quality of a rare plant population or natural community based on size, condition and landscape context. Ranks range from A-E, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank.


Forest Management Plan, David Irving
Hammond Ridge Development Corp
T1 R8 WELS & T1 R9 WELS, Maine
Approximate Property Location
Rare Animal
Inland Waterfowl and Wading Bird Habitat
Rare/Exemplary Natural Communtiy
Town
0 0.25 0.5 Miles
Maine Department of Inland Fisheries and Wildlife
and Maine Natural Areas Program, May 2021
Tidewater Mucket
UMO-6065
T1 R8 WELS
T1 R9 WELS
UMO-6144
UMO-3836
UMO-6141
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

PART 2 - Focal Species of this Habitat Management Plan

Focal species at this subject property were derived from Maine's Wildlife Action Plan which will be the priority for planned future conservation treatments. American woodcock, little brown bat, chestnut-sided warbler, and spring salamander are species highlighted in the Wildlife Action Plan. Additionally, and of particular interest to the landowner, American (pine) marten is added to the list. The following paragraphs will provide brief descriptions of each species and respective habitat management considerations to protect and/or promote the species. As presented in the outline earlier, Part 3 of this Habitat Plan will involve stand scale and landscape scale management recommendations to foster these habitats.

American Woodcock; *Scolopax minor*

Woodcock, a migratory bird, fly to northeastern North America in late March and early April and spend the entire spring, summer and fall in the northeast, the breeding range. Due to loss of habitat over past decades, such as farm abandonment and forest encroachment, population levels have been in decline since the 1980's. Woodcock require four vegetation types for habitat in its breeding range and it is essential that all four habitats are provided in sufficient quantity, quality, and proximity. The four types are described below and shown in the diagram at the bottom of the page.

1. Singing Fields - Open or partially wooded fields 1/2 acre or larger in size provide valuable habitat as singing / courtship fields. Optimal vegetation on singing fields is a carpet of clover or other native herbaceous species. Minimal shrub/tree growth is desirable.
2. Roosting Fields - Open fields 3 acres or larger provide significant habitat as night roosting areas. Some structure such as grass species which grow in tufts or low growing shrubs is valuable to provide protection from predators.
3. Nesting Cover – Dense, young (sapling or pole) stands of early successional, deciduous trees on upland, drier sites provide optimal nesting areas. Stands should be at least 5 acres in size with a minimum density of 600 stems per acre of aspen, birch, and maple. Component of conifers such as balsam fir and woody shrubs such as hazelnut provide added value. Saplings stands range from 5 to 15 years of age, while pole stands range from 15-30 years of age.
4. Feeding Cover – Dense, very young regenerating forest on upland sites surrounding wetlands as well as hydric sites in lowlands provides optimal feeding areas. Value of the dense cover provides protection from ground and aerial predation, particularly for the highly motile young chicks.

The ages indicate a 25–year cutting cycle (longer or shorter cycles may be appropriate).

Little Brown Bat, *Myotis lucifugus*

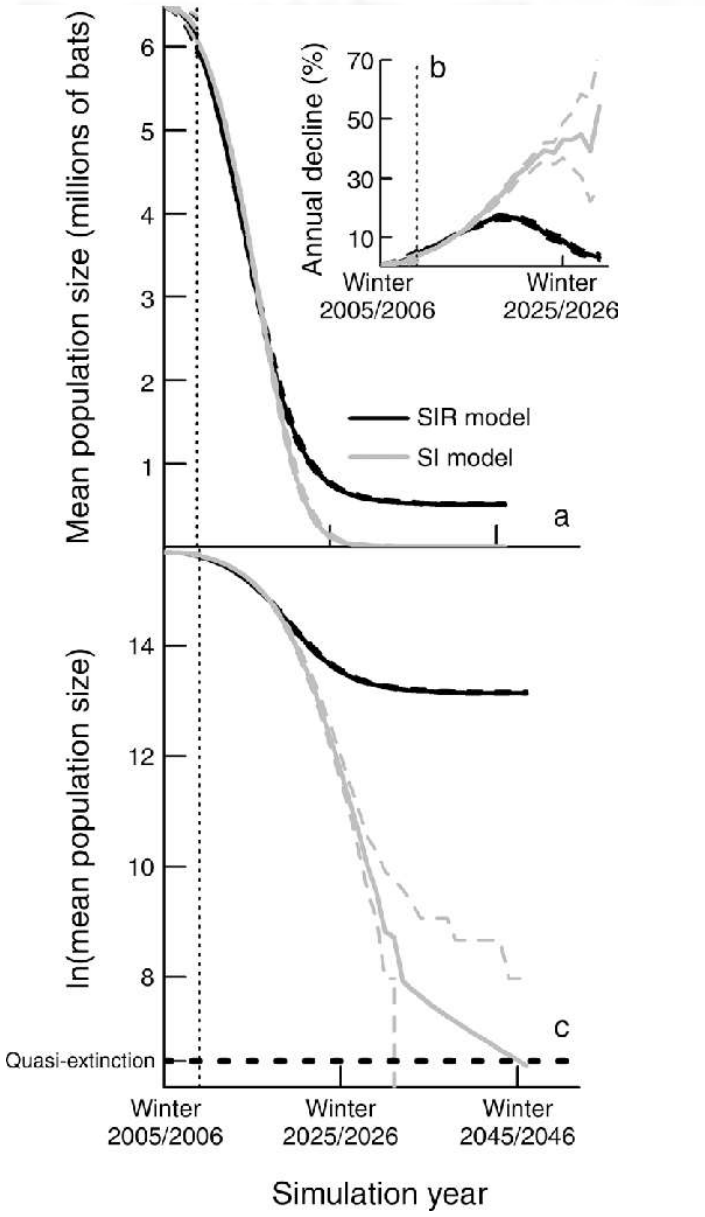
The little brown bat is a Maine State Endangered species in steep population decline due to the White-nose syndrome. This species is listed as a Priority 1 Species of Greatest Conservation Need (SGCN) according to the State Wildlife Action Plan. Hibernating in large groups in caves and mines during the winter, die-offs due to the White-nose Syndrome have reached 90% in other parts of the northeastern United States. Specific data relevant to Maine is generally lacking but is assumed to be similar.

This species occupies a variety of forested habitats, including the Boreal Upland Forest as primary habitat, with the Northeastern Upland Forest and the Northeastern Wetland Forest types listed as secondary habitats.

Females may form maternity colonies in large tree cavities, attics or bat houses. Males often roost under exfoliating bark, within tree trunks and within tree cavities of live and dead trees during the summer. Males have also been observed roosting in human-made structures during the summer. Foraging habitat requirements are generalized, occurring primarily over streams and other bodies of water, along the margins of lakes and streams or in woodlands near water.

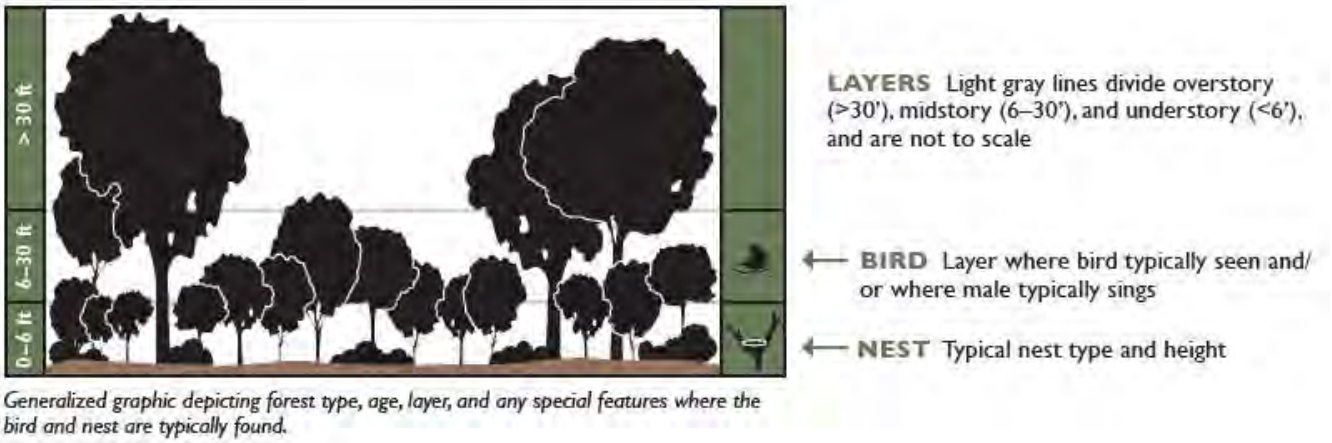
The Hammond Ridge Forest provides the Northeastern Upland Forest but lacks the Boreal Upland Forest as well as hibernaculum in the form of caves and mines.

Predictions for the little brown bat (Myotis lucifugus) population in the northeastern United States. The dotted vertical line divides the simulated spread from Schoharie County, New York, from the winter of 2006/2006 to the 2010/ 2011 state and forecasts obtained by forward simulation from the 2010/2011 state. Predictions from the SIR (this paper) and Maher et al. (2012) models are marked in black and gray respectively, with solid lines indicating mean values and dashed lines representing 95% prediction intervals. Panel (a) shows mean population size under SIR dynamics with exponentially distributed hibernaculum extirpation time will persist at .5% of the pre-WNS population. Panel (b) shows annual mean decline peaks in the winter of 2018/2019. Panel (c) shows the log-transform of the decline in little brown bat numbers. Assuming SI dynamics at both the hibernaculum and county scale, extinction is predicted by 2045/2046. The thick dashed line marks the quasi-extinction threshold of 0.01% of the estimated pre-WNS population (6.5 million bats).



Chestnut-sided Warbler; *Setophaga pensylvanica*

The chestnut-sided warbler is listed in Maine Wildlife Action Plan as a Species of Special Concern. It is a forest interior species relying on mature forest interspersed with a well-established understory of saplings and poles. It prefers Northern Hardwoods but will also utilize the Northern Mixedwood Forest. Historically relying on natural disturbances such as small fires, windthrow, or insect outbreaks that created patches of young habitat within a mature forest, this species will thrive in a working forest managed for multiple uses such as the Hammond Ridge Forest. A diagram is provided below to exhibit the preferred habitat features of the chestnut-sided warbler (compliments of Maine Audubon).



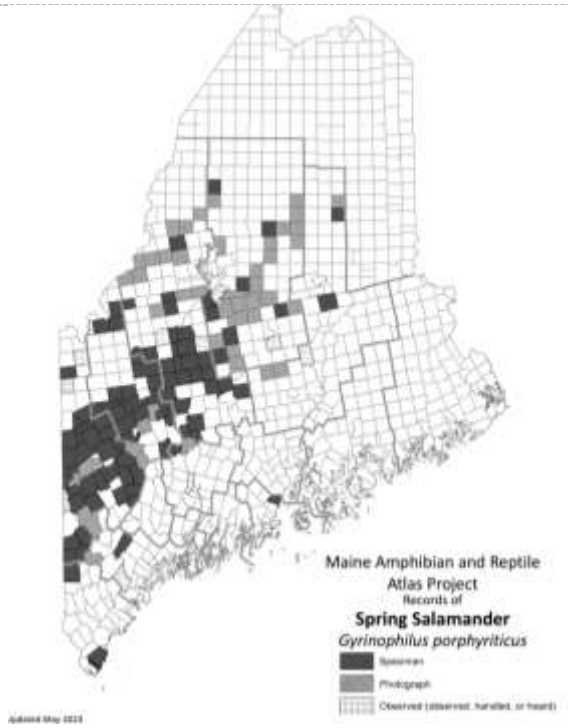
Generalized graphic depicting forest type, age, layer, and any special features where the bird and nest are typically found.

Spring Salamander, *Gyrinophilus porphyriticus*

The spring salamander is listed in the Maine Wildlife Action Plan as a Species of Special Concern and Species of Greatest Conservation Need. This amphibian prefers clear brooks and streams with rocky / gravelly bottoms. Desirable forest type is upland hardwoods and mixedwood forests. It is one of three brook/stream salamanders in Maine and is known to overwinter in these streams, sometimes staying active underground.

The brook / seep waterways stretching from north to south bisecting the Hammond Ridge Forest is potentially valuable habitat for the spring salamander.

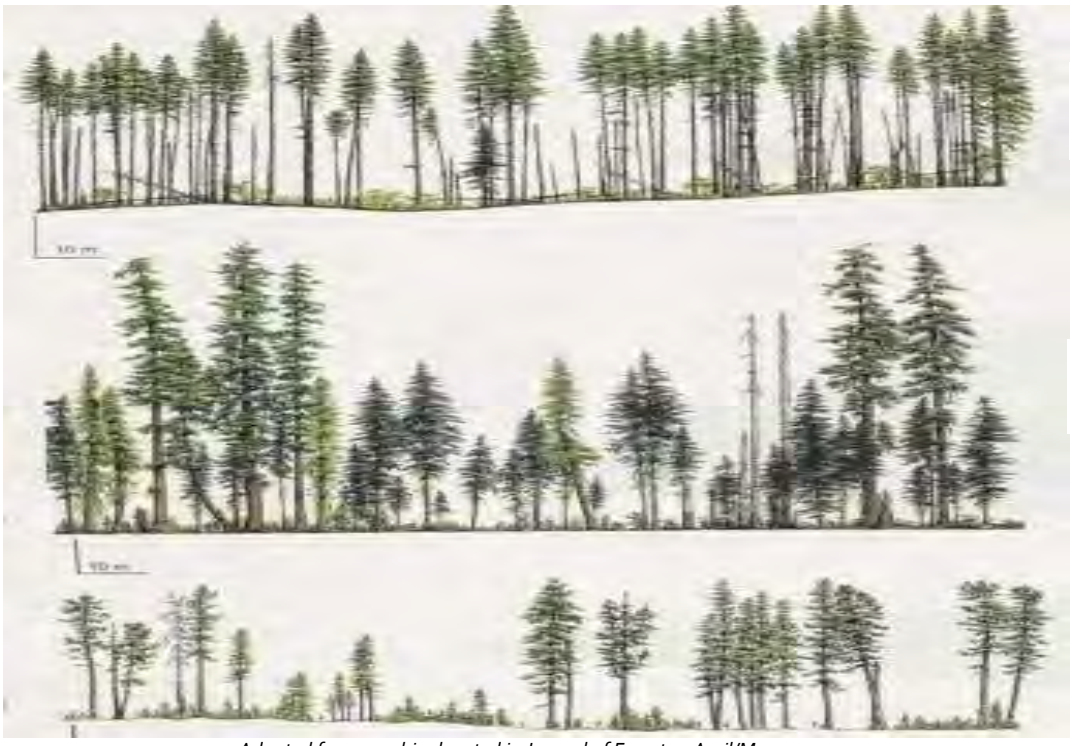
Photo: Trevor Persons



American (Pine) Marten; *Martes americana*

Although not a highlighted Species of Concern, the landowner has a special interest in promoting habitat for the American marten, more commonly known locally as the pine marten. The Hammond Ridge Forest, particularly the full canopy hemlock dominated stands provide exceptional habitat for the pine marten. This species requires taller than 40 feet with a basal area greater than 80 square feet per acre. They do not tolerate much patchiness of the habitat as they rely on travelling from tree to tree to avoid predators. That said, they do not need unbroken canopy but overhead cover is utmost importance to avoid avian predators such as hawks and owls. They can even utilize young even-aged stands as long as there is a canopy overhead. Coarse woody material is an asset to this species.

Referencing the diagram below, pine marten prefer forest conditions labeled as Forest #1 and Forest #2.



Adapted from graphics located in Journal of Forestry, April/May 2004
"Spatial Aspects of St……Complexity in Old-Growth Forests", Franklin and Van

PART 3 - Recommended Management Practices to Improve Habitat

Maintenance and improvement of biodiversity shall be a consideration of management as it is stated as a goal for management. Biodiversity is defined as the diversity of life in all its forms and at all levels of organization. This means biodiversity includes plants, invertebrates, fungi, bacteria, and of course the vertebrates which get most of the attention. Biodiversity is measured at many scales, and may be quantitative and qualitative. However, simply saying you want to have biodiversity doesn't just make it happen. Instead, you need to manage for it, at the differing scales such as at the individual tree, the forest stand, and at the overall landscape.

Different wildlife species need different types of habitat for their life cycle. For example a mouse requires a much smaller area of habitat (less than an acre) than a moose who needs several hundred acres. Additionally, some species need large blocks of uninterrupted habitat without human intervention, or at least intervention at a minimal level and one which mimics natural disturbances. Whereas some species thrive on the human disturbance regime. Coincidentally, focal species identified for habitat management under the premise of this Habitat Management Plan rely on habitat conditions under each of these anecdotes.

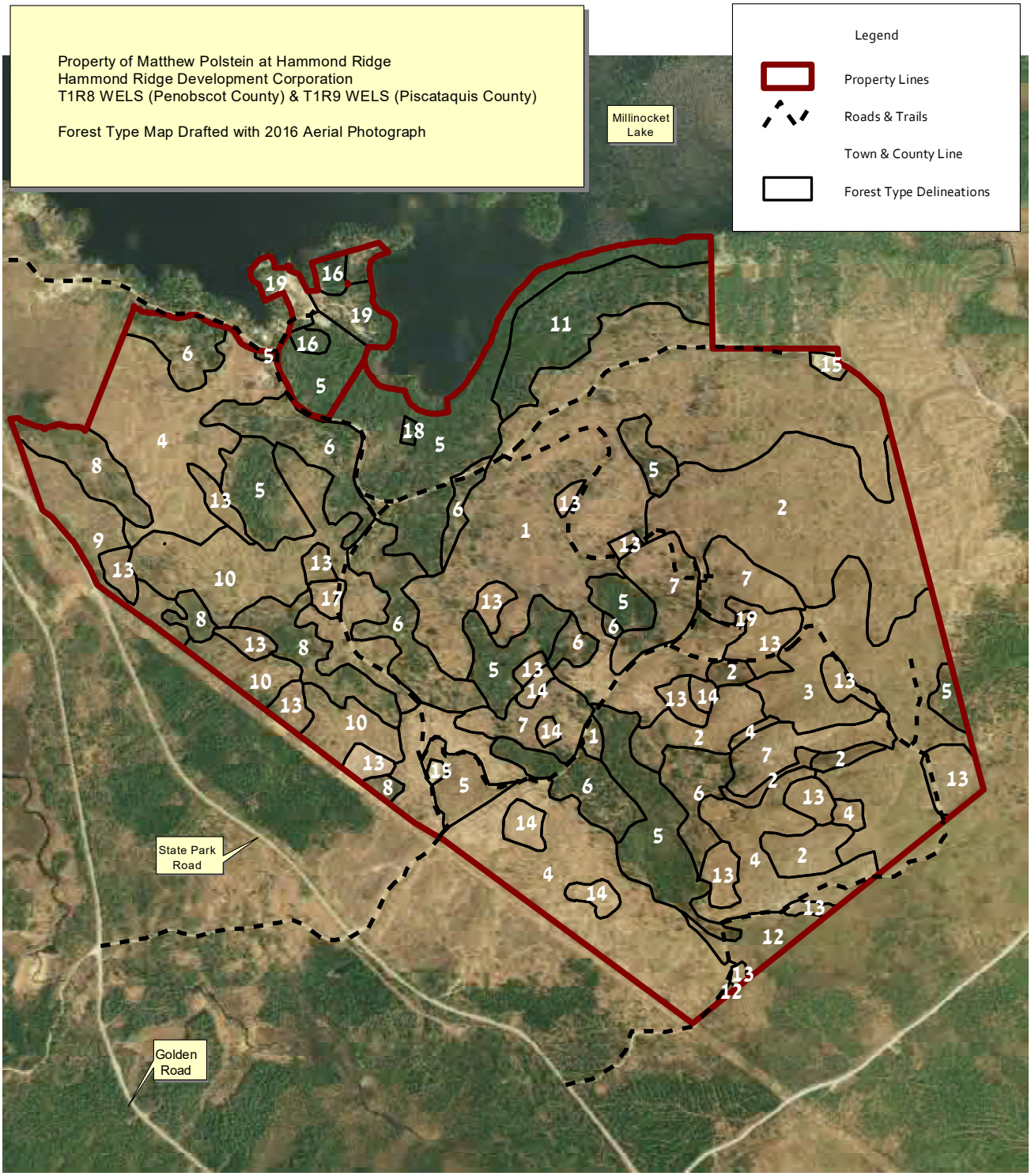
Stand Scale

Horizontal and vertical forest stratification (i.e. structure) on the stand is important consideration at the Hammond Ridge Forest.

- Horizontal structure is measured by the variety of vegetation types within the stands, and within the property. On the stand scale, due to past land management practices, the property has some degree of horizontal diversity with patches of mature or semi mature trees interspersed with sapling and pole sized stems. These void areas are especially important as they provide small patch habitat to a variety of species.
- Vertical structure is measured by the amount of layers or groups of different sized trees within a stand. It occurs naturally (or artificially through harvesting), increasing as stands develop (or are harvested); some trees inevitably succumb to environmental stress causing them to fall down (or are cut down), creating a hole in the forest canopy allowing new trees to fill the open growing space. This mixing of old, mature and young, regenerating trees with their differing respective heights and foliage characteristics throughout a stand creates vertical structure. And generally speaking, the amount of vertical structure determines the stands wildlife diversity; as structure increases, diversity increases. Due to a history of forest management practices on most areas, the Hammond Ridge Forest condition is generally multi-aged with high values of vertical structure. It is important to consider that as the stands develop naturally over time; this vertical diversity will tend to diminish. While applying silvicultural thinning projects on the stands as they grow, it will be important to consider and integrate vertical habitat criteria into the management prescriptions.
- The following pages provide a discussion of the various forest types found on the property and will include management recommendations which may be utilized to achieve the landowner's objective for the next planning period of ten years. As previously discussed, the forest inventory consisted of 92 sample plots. Analysis of the data from those sample plots, yielded the stratification of fourteen (14) forest stand types. A summary of the forest stand types, and their respective acreage is provided in the table on the following page.

Land Type Number	Type Code	Type Description	Acres	Basal Area	TPA	QMD
1	THS3B	Tolerant Hardwood / Softwood Mature Well Stocked	256	74	140	9.8
2	TH3A	Tolerant Hardwood Mature Well Stocked	147.5	99	211	9.3
3	H2A	Hardwood Mix Immature Well Stocked	99	79	306	6.9
4	H2/3B	Hardwood Mix Semi-Mature Moderately Stocked	210	62	171	8.1
5	SH3A	Softwood / Hardwood Mature Well Stocked	182	130	240	9.9
6	HS3B	Hardwood / Softwood Mature Well Stocked	117	110	168	10.9
7	HS3C	Hardwood / Softwood Mature Low Stocked	74	44	55	12.1
8	IHS3B	Intolerant Hardwood / Softwood Mature Moderately Stocked	46	91	171	9.9
9	IH3A	Intolerant Hardwood Mature Well Stocked	25	155	355	9.0
10	IHS3C	Intolerant Hardwood / Softwood Mature Moderately Stocked	98	68	149	9.1
11	SH3B	Softwood / Hardwood Mature Well Stocked	46	110	78	16.1
12	TH3B	Tolerant Hardwood Mature Moderately Stocked	13	85	192	9.0
13	HS1A	Hardwood / Softwood Immature Well Stocked	80	18	26	11.3
14	SH1A	Softwood / Hardwood Immature Well Stocked	14	0	0	1
TOTAL			1393.5			

Forest Stand Type Map



Stand 01 - THS3B - 256 acres

- **Stand History:** The stand has been lightly to moderately harvest during the past decade. Effective stand age of dominant and codominant trees is estimated to be 70 years.
- **Current Stand Condition:** A moderately stocked mature hardwood dominated mixedwood stand which reflects an uneven-aged structure; there are primarily two age classes. There is an estimated 74 square feet of basal area per acre, 140 trees per acre of timber sized trees and 1436 stems per acre in the regenerating class. Beech is the dominant species in the overstory with beech also dominant in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at low levels. Dead/down trees are poorly stocked. Mast trees are well stocked. This stand is providing exceptional habitat for the chestnut-sided warbler as well as other Passerine species which prefer forest interior habitats. Additionally, there are scattered large shabby sugar maples and yellow birch specimens which may be providing roost and upping habitat for the little brown bat.
- **Recommended Habitat Management Activities:**
    - Overstory should be retained as-is for the next decade.
    - The understory should be treated to reduce American beech stem density and to increase more desirable species in the regenerating age class. The treatment would be called a modified competition control, as all sugar maple, yellow birch, red spruce, and hemlock stems would be retained, and all other stems 4 inches or less DBH should be spaced from 7 feet from stem to stem. The treatment would qualify as EQIP Practice 666 -Competition Control or as Enhancement 666D – Forest Management to Enhance Understory Vegetation.
    - The westerly portion of this stand overlaps with a planned wildlife corridor stretching from north to south bisecting the property (see later section – Landscape Scale Management Recommendations on Page 34.

Stand 02 – TH3A – 147.5 acres

- **Stand History:** Harvest last occurred as a moderate thinning with mechanical harvesting equipment between 35 and 40 years ago. Effective stand age of dominant and codominant trees is estimated to be 80 years.
- **Current Stand Condition:** A well-stocked mature northern hardwood stand which reflects an even-aged structure; there are primarily two age classes but the stand is quite diverse in structure. There is an estimated 99 square feet of basal area per acre and 211 trees per acre of timber sized trees and more than 1,945 stems per acre in the regenerating class. Beech is the dominant species in the overstory and in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at low levels. Dead/down trees are well stocked. Mast trees are well stocked. This stand is providing exceptional habitat for the chestnut-sided warbler as well as other Passerine species which prefer forest interior habitats. Additionally, there are scattered large shabby sugar maples and yellow birch specimens which may be providing roost and upping habitat for the little brown bat.
- **Recommended Management Activities:**
    - Much of this stand is already planned for E666D (100 acres planned for 2026). It is suggested to implement this work as planned, and perhaps retain the additional 47.5 acres to serve as a control site

Stand 03 – H2A – 99 acres

- **Stand History:** Harvest last occurred as a moderate thinning with mechanical harvesting equipment between 35 and 40 years ago. Effective stand age of dominant and codominant trees is estimated to be 60 years.
- **Current Stand Condition:** A well-stocked semi-mature mixed hardwood stand which reflects an even-aged structure; there is one age class. There is an estimated 79 square feet of basal area per acre and 306 trees per acre of timber sized trees and 609 stems per acre in the regenerating class. Paper birch, sugar maple, yellow birch, and beech are the dominant species in the overstory with beech dominant in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as low. Cavity/den trees are stocked at low levels. Dead/down trees are poorly stocked. Mast trees are well stocked. This stand is providing suitable habitat for the chestnut-sided warbler as well as other Passerine species which prefer forest interior habitats.
- **Recommended Management Activities:**
    - Much of this stand is already planned for E666L (100 acres planned for 2025). It is suggested to implement this work as planned with no other intervention.

Stand 04 – H2/3B – 110 acres

- **Stand History:** The stand has been lightly to moderately harvest during the past decade. Effective stand age of dominant and codominant trees is estimated to be 70 years.
- **Current Stand Condition:** A moderately stocked mature hardwood dominated mixedwood stand which reflects an uneven-aged structure; there are primarily two age classes. There is an estimated 62 square feet of basal area per acre, 171 trees per acre of timber sized trees and 1,737 stems per acre in the regenerating class. Beech is the dominant species in the overstory beech also dominant in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at low levels. Dead/down trees are well stocked. Mast trees are well stocked. This stand is providing exceptional habitat for the chestnut-sided warbler as well as other Passerine species which prefer forest interior habitats. Additionally, there are scattered large shabby sugar maples and yellow birch specimens which may be providing roost and upping habitat for the little brown bat.
- **Recommended Management Activities:**
    - Overstory should be retained as-is for the next decade.
    - The understory should be treated to reduce American beech stem density and to increase more desirable species in the regenerating age class. The treatment would be called a modified competition control, as all sugar maple, yellow birch, red spruce, and hemlock stems would be retained, and all other stems 4 inches or less DBH should be spaced from 7 feet from stem to stem. The treatment would qualify as EQIP Practice 666 -Competition Control or as Enhancement 666D – Forest Management to Enhance Understory Vegetation.

Stand 05 – SH3A – 182 acres

- **Stand History:** Harvest was conducted several decades ago with a light harvest. No management has occurred since. Effective stand age of standing merchantable trees is estimated to be 80 to 100 years.
- **Current Stand Condition:** A very well-stocked conifer dominated mixedwood stand which very much is an even-aged structure. There is an estimated 130 square feet of basal area per acre and 240 trees per acre of timber sized trees dominated by eastern hemlock, and 1,669 trees per acre in the regeneration class, dominated by hemlock, beech, and balsam fir.
- **Current Habitat Condition:** Vertical structure is moderate. Cavity/den trees are well stocked. Dead/down trees are well stocked. Mast trees are moderately stocked. This stand checks most of the boxes for our focal species. This stand and its late successional condition is providing exceptional habitat for the chestnut-sided warbler, pine marten, and the little brown bat. In addition, the seeps and brooks which bisect much of this stand potentially provide aquatic habitat for the spring salamander.
- **Recommended Management Activities:**
    - Consideration may be made to retain this stand as a conservation reserve as an area set aside without future planned timber management for at least two decades or longer if deemed valuable to the owners.
    - Much of this stand overlaps with a planned wildlife corridor stretching from north to south bisecting the property (see later section – Landscape Scale Management Recommendations on Page 34.

Stand 06 – HS3B – 117 acres

- **Stand History:** The stand was harvested moderately during the past decade. Effective stand age of standing merchantable trees is estimated to be 370 to 80 years.
- **Current Stand Condition:** A well-stocked hardwood dominated mixedwood stand which very much is an uneven-aged structure with three age classes. There is an estimated 110 square feet of basal area per acre and 168 trees per acre in the overstory class. Overstory trees are hemlock, beech, yellow birch, sugar maple, and red maple. Regeneration is well stocked with 2,033 stems per acre, dominated by beech. A
- **Current Habitat Condition:** Vertical structure is high. Cavity/den trees are well stocked. Dead/down trees are well stocked. Mast trees are well stocked. Similar to Stand 05 described above, this stand checks most of the boxes for our focal species. This stand and its late successional condition is providing exceptional habitat for the chestnut-sided warbler, pine marten, and the little brown bat. In addition, the seeps and brooks which bisect much of this stand potentially provide aquatic habitat for the spring salamander.
- **Recommended Management Activities:**
    - Consideration may be made to retain this stand as a conservation reserve as an area set aside without future planned timber management for at least two decades or longer if deemed valuable to the owners.
    - Much of this stand overlaps with a planned wildlife corridor stretching from north to south bisecting the property (see later section – Landscape Scale Management Recommendations on Page 34.
    - Additionally, the portion of the stand which does not overlap with the planned wildlife corridor is designated as a Conservation Reserve area.

Stand 07 – HS3C – 74 acres

- **Stand History:** Timber harvest occurred during the past decade with moderate to intensive thinning to mitigate impact of the beech bark disease. Effective stand age of standing merchantable trees is estimated to be 60 years.
- **Current Stand Condition:** A poorly stocked semi-mature hardwood dominated mixedwood stand which reflects an even-aged structure; there are primarily two age classes. There is an estimated 44 square feet of basal area per acre and 56 trees per acre of timber sized trees and more than 1,250 stems per acre in the regenerating class. Red maple, yellow birch, and sugar maple are the dominant species in the overstory with beech dominant in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at moderate levels. Dead/down trees are well stocked. Mast trees are moderately stocked. This stand is providing exceptional habitat for the chestnut-sided warbler as well as other Passerine species which prefer forest interior habitats. Additionally, there are scattered large shabby sugar maples and yellow birch specimens which may be providing roost and upping habitat for the little brown bat.
- **Recommended Management Activities:**
    - Overstory should be retained as-is for the next decade.
    - The understory should be treated to reduce American beech stem density and to increase more desirable species in the regenerating age class. The treatment would be called a modified competition control, as all sugar maple, yellow birch, red spruce, and hemlock stems would be retained, and all other stems 4 inches or less DBH should be spaced from 7 feet from stem to stem. The treatment would qualify as EQIP Practice 666 -Competition Control or as Enhancement 666D – Forest Management to Enhance Understory Vegetation.

Stand 08 – IHS3B – 46 acres

- **Stand History:** A harvest was conducted12 years ago using a mechanical harvest system. An estimated 40% of standing timber was removed at that time. No management has occurred since. Effective stand age of standing merchantable trees is estimated to be 60 years.
- **Current Stand Condition:** A moderately stocked mature mixedwood stand dominated by shade intolerant hardwoods. Stand structure is even-aged structure; there are two distinct age classes. There is an estimated 91 square feet of basal area per acre and 170 trees per acre of timber sized trees and 1,563 stems per acre in the regenerating class. Red maple, white pine, aspen, aspen, paper birch, and red one are the dominant species in the overstory with white pine dominant in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at moderate levels. Dead/down trees are well stocked. Mast trees and shrubs are poorly stocked. This stand and along with adjacent Stands 9 and 10 are providing early successional habitat for American woodcock.
- **Recommended Management Activities:**
    - Patch cutting is currently being implemented according to the current CSP Contract in 2024 under E666K to promote early successional habitat for American woodcock.
    - More patch cutting is suggested in 12 years from the date of this Plan.

Stand 09 – IH3A – 25 acres

- **Stand History:** Patch cut harvest was conducted 10 years ago using a mechanical harvest system. No management has occurred since. Effective stand age of standing merchantable trees is estimated to be 50 years.
- **Current Stand Condition:** A very well stocked mature shade intolerant hardwood stand which reflects an even-aged structure; there is one distinct age class. There is an estimated 155 square feet of basal area per acre and 355 trees per acre of timber sized trees and 1,700 stems per acre in the regenerating class. Big tooth Aspen is the dominant species in the overstory with beech dominant in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at moderate levels. Dead/down trees are well stocked. Mast trees and shrubs are poorly stocked. This stand and along with adjacent Stands 9 and 10 are providing early successional habitat for American woodcock.
- **Recommended Management Activities:**
    - Patch cutting is currently being implemented according to the current CSP Contract in 2024 under E666K to promote early successional habitat for American woodcock.
    - More patch cutting is suggested in 12 years from the date of this Plan.

Stand 10 – IHS3C – 98 acres

- **Stand History:** A harvest was conducted 12 years ago using a mechanical harvest system. An estimated 40% of standing timber was removed at that time. No management has occurred since. Effective stand age of standing merchantable trees is estimated to be 60 years.
- **Current Stand Condition:** A moderately stocked mature shade intolerant hardwood dominated mixedwood stand which reflects an even-aged structure; there are two distinct age classes. There is an estimated 68 square feet of basal area per acre and 149 trees per acre of timber sized trees and 1,944 stems per acre in the regenerating class. Big tooth Aspen is the dominant species in the overstory with beech dominant in the understory.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at moderate levels. Dead/down trees are well stocked. Mast trees and shrubs are poorly stocked. This stand and along with adjacent Stands 9 and 10 are providing early successional habitat for American woodcock.
- **Recommended Management Activities:**
    - Patch cutting is currently being implemented according to the current CSP Contract in 2024 under E666K to promote early successional habitat for American woodcock.
    - More patch cutting is suggested in 12 years from the date of this Plan.

Stand 11– SH3B – 46 acres

- **Stand History:** A harvest was conducted 13 years ago using a mechanical harvest system. An estimated 33% of standing timber was removed at that time. No management has occurred since. Effective stand age of standing merchantable trees is estimated to be 70 years.
- **Current Stand Condition:** A well-stocked mature conifer dominated mixedwood stand which reflects an even-aged structure; there are two distinct age classes. There is an estimated 110 square feet of basal area per acre and 78 trees per acre of timber sized trees and 1,580 stems per acre in the regenerating class. Hemlock is the dominant species in the overstory with hemlock also dominant in the understory.
- **Current Habitat Condition:** Vertical structure is high. Cavity/den trees are well stocked. Dead/down trees are well stocked. Mast trees are well stocked. Similar to Stand 05 described above, this stand checks most of the boxes for our focal species. This stand and its late successional condition is providing exceptional habitat for the chestnut-sided warbler, pine marten, and the little brown bat.
- **Recommended Management Activities:**
    - This entire stand, overstory and understory should be retained as-is for the next decade.

Stand 12– TH3B – 13 acres

- **Stand History:** A harvest was conducted 40 years ago using a conventional harvest system. An estimated 40% of standing timber was removed at that time. No management has occurred since. Effective stand age of standing merchantable trees is estimated to be 70 years.
- **Current Stand Condition:** A moderately stocked mature northern hardwood stand which reflects an even-aged structure; there are two age classes. There is an estimated 85 square feet of basal area per acre and 192 trees per acre of timber sized trees and 2,200 stems per acre in the regenerating class. Yellow birch is the dominant species in the overstory with striped maple dominant in the understory.
- **Current Habitat Condition:** Vertical structure is high. Cavity/den trees are well stocked. Dead/down trees are well stocked. Mast trees are well stocked. Similar to Stand 05 described above, this stand checks most of the boxes for our focal species. This stand and its late successional condition is providing exceptional habitat for the chestnut-sided warbler, pine marten, and the little brown bat.
- **Recommended Management Activities:**
    - This entire stand, overstory and understory should be retained as-is for the next decade.
    - Consideration may be made to include this stand in the Conservation Reserve Area as discussed and presented in the Landscape Scale Management Recommendations on Page34.

Stand 13– HS1A – 80 acres

- **Stand History:** Patch clearcut harvests were conducted in 2013 using a mechanical harvest system. An estimated 95% of standing timber was removed at that time. Some trees were retained for habitat and seed. No management has occurred since. Effective stand age is 8 years.
- **Current Stand Condition:** Well stocked regenerating stand. There is an estimated 18 square feet of basal area per acre and 26 trees per acre of timber sized trees and 580 stems per acre in the regenerating class. I feel there is much more regeneration which does not appear in the forest inventory tables.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at moderate levels. Dead/down trees are well stocked. Mast trees and shrubs are poorly stocked. This stand may be regenerating, but is providing exceptional habitat for focal species American woodcock, and tolerable habitat for the chestnut-sided warbler and pine marten.
- **Recommended Management Activities:**
    - Let grow and re-assess in 2030 for precommercial thinning or crop tree release.

Stand 14– SH1A – 14 acres

- **Stand History:** Patch clearcut harvests were conducted in 2013 using a mechanical harvest system. An estimated 100% of standing timber was removed at that time. Red pine and black spruce were then planted in 2014.
- **Current Stand Condition:** Well stocked regenerating stand.
- **Current Habitat Condition:** Vertical structure of the stand is assessed as moderate to high. Cavity/den trees are stocked at moderate levels. Dead/down trees are well stocked. Mast trees and shrubs are poorly stocked. This stand may be regenerating, but is providing exceptional habitat for focal species American woodcock, and tolerable habitat for the chestnut-sided warbler and pine marten.
- **Recommended Management Activities:**
    - None. Let grow and re-assess in 2030 for precommercial thinning or crop tree release.

Landscape Scale

Habitat fragmentation and in essence the control / prevention of fragmentation is an important consideration at the Hammond Ridge Forest. With smaller properties, one would review land use practices occurring on surrounding properties, such as development, agriculture, wetlands, or silviculture. Then one would in the effort of landscape scale management take their neighbors' practices into account, and consider changing our own behavior to accommodate species of concern. However, with a property at the scale of 1400 acres, more or less, we are already at a Landscape Scale for management of most wildlife habitats, particularly for the focal species we have chosen for the Habitat Management Plan. That said, it's still valuable to perform this same exercise within the boundaries of the subject property to evaluate how we're doing.

Using ecological type and age class factors together with the wetland areas, and the riparian habitats, and considering their placement, there currently is a very well spatially diversified ecosystem available within the boundaries of the property. This creates a diverse habitat mosaic, providing several habitat types to wildlife species. This has occurred through the course of sound, sustainable management for more than 15 years between the owners and their consultant. Moving forward, consideration may be made to provide a more formal Landscape Plan in place as shown on the map on the following page, and described below:

Wildlife Corridor – Estimated 110 acres of Property Area

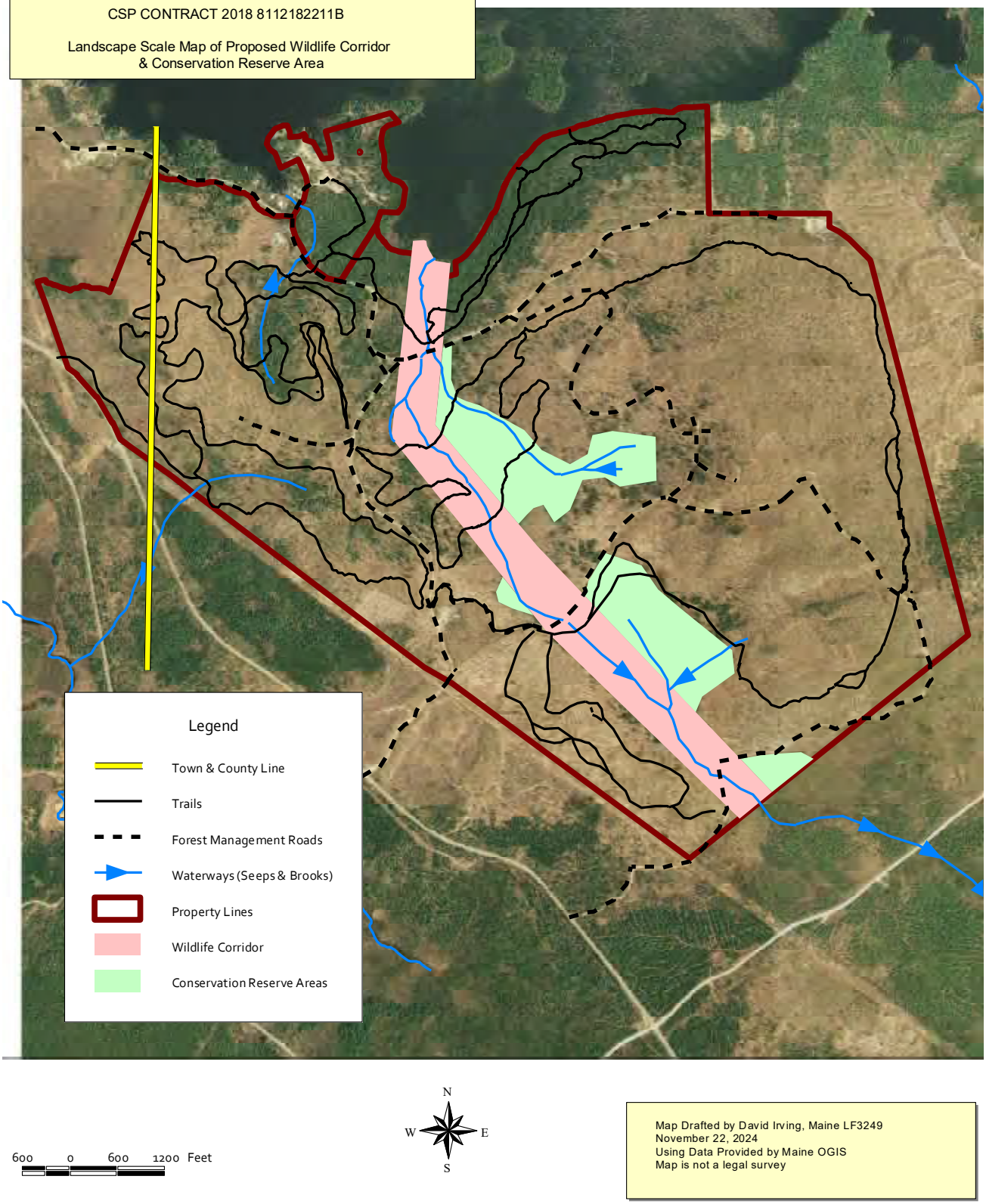
It is suggested an extensive Wildlife Corridor stretching from the southerly boundary to the northerly boundary at Millinocket Lake is designated. This Corridor would be approximately 500 feet in width, and would follow the primary flowing waters. Interestingly, the southerly portion (approximately 1/3 of the Corridor) of the proposed Corridor would involve the headwaters of Smith Brook dead water flowing southerly toward the town of Millinocket. The majority of the Corridor would also involve following an unnamed flowing waterway which flows almost due north to Millinocket Lake.

- Management inside this Proposed Wildlife Corridor would be minimalistic, with only understory treatments allowed to occur. The goal of this Corridor would be to provide substantial connected habitats for the focal species highlighted for this Habitat Management Plan, the chestnut-sided warbler, little brown bat, spring salamander, and pine marten.
- Timber management would be disallowed from this Wildlife Corridor area. However, narrow recreational trails would be allowed as long as a tree canopy is retained overtopping the trail. Use and maintenance of trails could actually prove to be a valuable component to overall habitat value in this area.
- As discussed in the Stand Scale Management Section, individual stands which would be affected by this Proposed Wildlife Corridor would be portions of Stands 01, 05, 06, and 12.
- The value of this Proposed Corridor will be to provide habitat itself, but also as a travel way for terrestrial species between the habitats they desire. In other words, some species may tolerate the habitats in between the two preferred habitats on either end of the Corridor. But the unbroken canopy provides them protection as they travel.

Conservation Reserve Area – Estimated 90 acres of Property Area

Adding to the above described Wildlife Corridor, it would be an added value if all other closed-canopy mature conifer dominated stand types on the upper slopes of the Hammond Ridge Forest are managed similarly. These sites would not be labeled as the "Wildlife Corridor" but instead the Conservation Reserve Areas. As shown on the Landscape Scale Map on the following page, the Conservation Reserve Areas would be adjacent to the Proposed / Planned Wildlife Corridor.

- Management inside this Reserve Area would be minimalistic, with only understory treatments allowed to occur.
- Timber management would be disallowed from this Wildlife Corridor area. However, narrow recreational trails would be allowed as long as a tree canopy is retained overtopping the trail. Use and maintenance of trails could actually prove to be a valuable component to overall habitat value in this area.
- As discussed in the Stand Scale Management Section, individual stands which would be affected by this Proposed Wildlife Corridor would be portions of Stands 05 and 06.


Property of Matthew Polstein at Hammond Ridge
Hammond Ridge Development Corporation
T1R8 WELS (Penobscot County) & T1R9 WELS (Piscataquis County)
CSP CONTRACT 2018 8112182211B
Landscape Scale Map of Proposed Wildlife Corridor
& Conservation Reserve Area
Legend
Town & County Line
Trails
Forest Management Roads
Waterways (Seeps & Brooks)
Property Lines
Wildlife Corridor
Conservation Reserve Areas
N
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600 0 600 1200 Feet
Map Drafted by David Irving, Maine LF3249
November 22, 2024
Using Data Provided by Maine OGIS
Map is not a legal survey

Planned Management Summary

The current habitat condition versus planned management conditions was evaluated using the WHEP (Wildlife Habitat Evaluation Procedure). As a result of this evaluation it is found that the Benchmark Habitat Conditions scored as 0.86 (this is good). Planned management will in turn increase this value to a score of 0.88 (even better). The WHEP results are provided as an attachment o this Plan.

The table below provides a summary of the recommended management activities made throughout this plan for the next ten year planning period. The map on the following page provides the location of the planned activities. Keep in mind, the acreages and map are provides as tactical planning tools, and the operational plan will be developed when the sites are prepared by the forester. This will include flagging actual stand management boundaries and hydrologic features; actual acreage of the planned treatments may slightly differ after this work is performed.

Location	Units	NRCS Practice Code if applicable	Description	Dates Planned
Stand 01	200 acres	E666D	Planned Future Understory Thinning	2027-2028
Stand 02	100 acres	E666D	Under CSP Contract For Understory Thinning	2026
Stand 03	99 acres	E666L	Under CSP Contract For Thinning	2025
Stand 04	110 acres	E666D	Planned Future Understory Thinning	2027-2028
Stand 05	182 acres	CONSIDER SETTING THIS STAND ASIDE AS A WILDLIFE CORRIDOR & CONSERVATION RESERVE		
Stand 06	117 acres	CONSIDER SETTING THIS STAND ASIDE AS A WILDLIFE CORRIDOR & CONSERVATION RESERVE		
Stand 07	74 acres	E666D	Planned Future Understory Thinning	2027-2028
Stand 08	10 acres	E666K	Under CSP Contract For Patch Cuts	2024
Stand 09	5 acres	E666K	Under CSP Contract For Patch Cuts	2024
Stand 10	20 acres	E666K	Under CSP Contract For Patch Cuts	2024
Stand 11	46 acres	No Treatment – Let Grow		2025-2035
Stand 12	13 acres	CONSIDER SETTING THIS STAND ASIDE AS A WILDLIFE CORRIDOR & CONSERVATION RESERVE		
Stand 13	80 acres	Assess for PCT / CTR	2026	
Stand 14	14 acres	Assess for PCT / CTR	2026	

Conclusion

The preceding 35 pages have provided a detailed report of the current condition of the subject property, including general background information of the ownership, ecological and timber management analysis. This analysis was utilized to then prepare recommended management activities to attain the forest management goals for the next ten years. In conclusion, this plan is presented to the owner as a working document, one which may be administered immediately, but also one which most likely will be modified periodically in order to reflect the ever-changing variables that encompass forestland ownership. It is inevitable that timber markets will shift, new literature will arise, and forest conditions will evolve not exactly as planned. Forest management and ownership goals may even be altered over time, and this is perfectly acceptable and even expected. If or when these goals or other variables change, it will be important to update this plan accordingly.

Attachments:

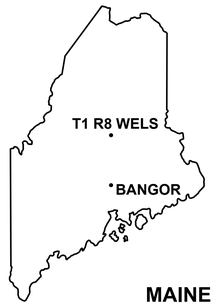
Results of Wildlife Habitat Evaluation Procedure
Focal Species Habitat Literature

DRAWINGS

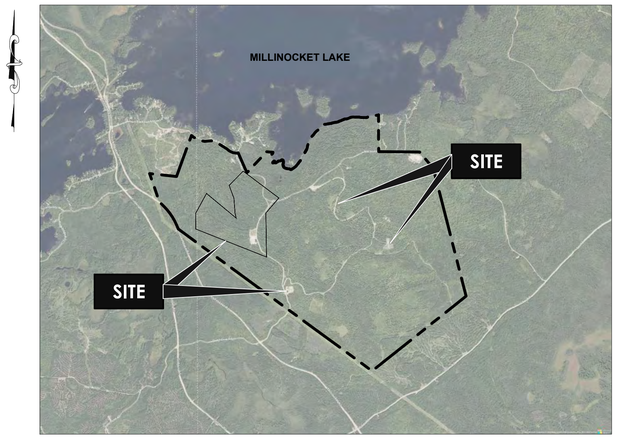
G001 - Cover Sheet
C001 - General Notes Plan
C100 - Overall Site Plan
C101 - Proposed Subdivision Plan
C102 - Proposed Grading and Erosion Control Plan
C013 - Proposed Grading and Erosion Control Plan
C104 - Proposed Grading and Erosion Control Plan
C105 - Proposed Utility Plan
C106 - Proposed Utility Plan
C107 - Proposed Utility Plan
C108 - Proposed Maintenance Building Site Plan
C109 - Event Center Site Plan
C110 - Solar Array Site Plan
C111 - Road Side Buffer Site Plan
C201 - Road Plan and Profile Sta: 0+00 To 10+00
C202 - Road Plan and Profile Sta: 10+00 To 18+00
C203 - Road Plan and Profile Sta: 18+00 To 24+47
C204 - Road Plan and Profile Sta: 0+00 To 9+50
C205 - Road Plan and Profile Sta: 9+50 To 18+78
C206 - Road Plan and Profile Sta: 0+00 To 7+31
C207 - Road Plan and Profile Sta: 0+00 To 6+71
C501 - Site Details
C502 - Site Details
C701 - Pre-Development Hydrology Plan
C702 - Post-Development Hydrology Plan
C703 - Overall Stormwater Treatment Plan
C704 - Stormwater Treatment Plan
C705 - Stormwater Treatment Plan
C706 - Stormwater Treatment Plan

HAMMOND RIDGE DEVELOPMENT

T1 R8 WELS, MAINE



MAINE



LOCATION MAP

INDEX OF DRAWINGS

NOT FOR CONSTRUCTION
JANUARY 10, 2025

STATE OF MAINE
ALFRED HASKELL JR
3414
01/10/2025
LICENSED
PROFESSIONAL ENGINEER

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EROSION AND SEDIMENTATION CONTROL NOTES

1. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS)SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OR SOIL DISTURBANCE ACTIVITIES. BMPS SHALL COMPLY WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS AND MAINE EROSION AND SEDIMENT CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS: HTTPS://WWW.MAINE.GOV/DEP/LAND/EROSION/ESCBMPS/ESC_BMP_FIELD.PDF
2. EROSION CONTROL MEASURES WITHIN 50 FEET OF PROTECTED NATURAL RESOURCES SHALL HAVE A DOUBLE PERIMETER EROSION CONTROL AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.
3. OPEN AREAS THAT ARE STRIPPED OR GRADED SHALL BE LIMITED TO ONE ACRE OR NO LARGER THAN CAN BE MULCHED IN ONE DAY.
4. SEDIMENT BARRIERS SHALL BE PLACED DOWNGRADIENT OF ALL STOCKPILES. STORMWATER RUNOFF SHOULD BE PREVENTED FROM RUNNING INTO STOCKPILES.
5. MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL EROSION CONTROL MEASURES MAY NEED TO BE IMPLEMENTED. ALL AREAS OF INSTABILITY AND EROSION MUST BE REPAIRED IMMEDIATELY DURING CONSTRUCTION AND NEED TO BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED OR VEGETATION IS ESTABLISHED. A CONSTRUCTION LOG MUST BE MAINTAINED FOR THE EROSION AND SEDIMENTATION CONTROL INSPECTIONS AND MAINTENANCE
6. MINIMIZE DISTURBED AREA AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION.
7. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED, AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.
8. PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWN GRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.
9. PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
10. INSTALL SILT FENCES OR SEDIMENT BARRIERS ALONG CONTOUR DIVIDING FLAT AND STEEP SLOPES, AREAS WITH DIFFERENT DISTURBANCE SCHEDULES, AROUND TEMPORARY STOCKPILES OR IN OTHER UNSPECIFIED POSSIBLE CIRCUMSTANCES SHOULD BE CONSIDERED BY THE CONTRACTOR. THE INTENT OF SUCH INTERIOR SILT FENCES IS TO LIMIT SEDIMENT TRANSPORT WITHIN THE SITE TOWARD THE PROTECTED RESOURCES.
11. SILT FENCE AND SEDIMENT BARRIERS WILL BE INSPECTED, REPLACED AND/OR REPAIRED IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL (0.5 INCH OR GREATER) OR SNOW MELT OR LOSS OF SERVICEABILITY DUE TO SEDIMENT ACCUMULATION. AT A MINIMUM, ALL EROSION CONTROL DEVICES WILL BE OBSERVED WEEKLY.
12. EROSION CONTROL MIX BERMS SHALL CONSIST OF A MIX OF SHREDDED WOOD FRAGMENTS AND GRIT THAT MUST BE WELL GRADED WITH AN ORGANIC CONTENT THAT IS BETWEEN 50 AND 100% OF WEIGHT. MINERAL PORTION OF THE MIX SHOULD BE NATURALLY INCLUDED IN THE PRODUCT WITH NO ROCKS GRATER THAN 4-INCHES OR LARGE AMOUNTS OF FINES (SILTS AND CLAYS). MIX SHOULD BE FREE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH.
13. EROSION CONTROL MIX SHALL BE USED ON SLOPES 3:1 OR SHALLOWER. SLOPES BETWEEN 3:1 AND 2:1 SHALL HAVE EROSION CONTROL BLANKET. SLOPES BETWEEN 2:1 AND 1.5:1 SHALL HAVE RIP RAP. SLOPES GREATER THAN 1.5:1 ARE PROHIBITED.
14. HAYBALES MAY BE INSTALLED IN ADDITION TO SILT FENCE OR USED AROUND INLETS TO PROVIDE ADDITIONAL SEDIMENT CAPTURE AND CONTROL.
15. EROSION CONTROL BLANKETS INTENDED FOR TEMPORARY SLOPE OR CHANNEL STABILIZATION SIMILAR TO NORTH AMERICAN GREEN ERONET BIODEGRADABLE EROSION CONTROL BLANKET OR SIMILAR.
16. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO CONSTRUCTION SITE.
17. A SUITABLE BINDER SUCH AS TERRTACK WILL BE USED ON THE HAY MULCH FOR WIND CONTROL.
18. IF FINAL SEEDING OF DISTURBED AREAS IS NOT COMPLETED BY SEPTEMBER 15TH OF THE YEAR OF CONSTRUCTION, THEN ON THAT DATE THESE AREAS WILL BE GRADED AND SEEDED WITH WINTER RYE AT THE RATE OF 112 POUNDS PER ACRE OR 3 POUNDS PER 1000 SQUARE FEET. THE RYE SEEDING WILL BE PRECEDED BY AN APPLICATION OF 3 TONS OF LIME AND 800 LBS. OF 10-20-20 FERTILIZER OR ITS EQUIVALENT. MULCH WILL BE APPLIED AT A RATE OF 90 POUNDS PER 1000 SQUARE FEET.
19. IF THE RYE SEEDING CANNOT BE COMPLETED BY OCTOBER 1ST OR IF THE RYE DOES NOT MAKE ADEQUATE GROWTH BY DECEMBER 1ST, THEN ON THOSE DATES, HAY MULCH WILL BE APPLIED AT 150 POUNDS PER 1000 SQUARE FEET.
20. WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATER BODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
21. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.
22. PERMANENT STABILIZATION: IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIP-RAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RE-STABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.
   - A. SEEDED AREAS: FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
   - B. SODDED AREAS: FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
   - C. PERMANENT MULCH: FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.
   - D. RIPRAP: FOR AREAS STABILIZED WITH RIP-RAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIP-RAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIP-RAP. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.
   - E. PAVED AREAS: FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED, PROVIDED IT IS FREE OF FINE MATERIALS THAT MAY RUNOFF WITH A RAIN EVENT
   - F. DITCHES, CHANNELS, AND SWALES: FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH A 90% COVER OF HEALTHY VEGETATION, WITH A WELL-GRADED RIP-RAP LINING, TURF REINFORCEMENT MAT, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE CHANNEL BANKS, OR DOWN-CUTTING OF THE CHANNEL.

26. ALL DISTURBED AREAS WILL BE SEEDED WITH 2.5 LBS. RED FESCUE AND 0.5 LBS. RYE GRASS PER 1,000 SQUARE FEET AND MULCHED AT A RATE OF 90 LBS. PER 1,000 SQUARE FEET OR EQUIVALENT APPLICATION OF SEED AND MULCH.
27. IF PERMANENT BMP LOCATIONS ARE TO BE USED AS SEDIMENT TRAPS THEN THE AREAS OF THE AREAS OF THE BMPS SHALL BE RESTORED AS NEEDED TO PREPARE FOR LONG TERM USE, SUCH AS BY REMOVAL OF SEDIMENT, REGRADING ELEVATIONS, INSTALLING UNDERDRAINS (WHERE APPROPRIATE) AND STABILIZING THE AREA.
28. WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 15. IF DISTURBED AREAS ARE NOT STABILIZED WITH PERMANENT MEASURES BY NOVEMBER 1 OR NEW SOIL DISTURBANCE OCCURS AFTER NOVEMBER 1, BUT BEFORE APRIL 15, THEN THESE AREAS MUST BE PROTECTED AND RUNOFF FROM THEM MUST BE CONTROLLED BY ADDITIONAL MEASURES AND RESTRICTIONS.
   - A. SITE STABILIZATION: FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.
   - B. SEDIMENT BARRIERS: ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.
   - C. DITCH: ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.
   - D. SLOPES: MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.
29. STORMWATER CHANNELS: DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE DESIGNED, CONSTRUCTED, AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSION CONTROL. DITCHES, SWALES AND OTHER OPEN STORMWATER CHANNELS MUST BE SIZED TO HANDLE, AT A MINIMUM, THE EXPECTED VOLUME RUN-OFF. EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.
   - A. THE CHANNEL SHOULD RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OR CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDE SLOPES.
   - B. WHEN THE WATERSHED DRAINING TO A DITCH OR SWALE IS LESS THAN 1 ACRE OF TOTAL DRAINAGE AND LESS THAN ¼ ACRE OF IMPERVIOUS AREA, DIVERSION OF RUNOFF TO ADJACENT WOODED OR OTHERWISE VEGETATED BUFFER AREAS IS ENCOURAGED WHERE THE OPPORTUNITY EXISTS.
30. CULVERTS: CULVERTS MUST BE SIZED TO AVOID UNINTENDED FLOODING OF UPSTREAM AREAS OR FREQUENT OVERTOPPING OF ROADWAYS. CULVERT INLETS MUST BE PROTECTED WITH APPROPRIATE MATERIALS FOR THE EXPECTED ENTRANCE VELOCITY, AND PROTECTION MUST EXTEND AT LEAST AS HIGH AS THE EXPECTED MAXIMUM ELEVATION OF STORAGE BEHIND THE CULVERT. CULVERT OUTLET DESIGN MUST INCORPORATE MEASURES, SUCH AS APRONS, TO PREVENT SCOUR OF THE STREAM CHANNEL. OUTLET PROTECTION MEASURES MUST BE DESIGNED TO STAY WITHIN THE CHANNEL LIMITS. THE DESIGN MUST TAKE ACCOUNT OF TAILWATER DEPTH.
31. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

INSPECTION AND MAINTENANCE

THE FOLLOWING STANDARDS MUST BE MET DURING CONSTRUCTION:

1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (0.5" OR MORE IN A CONSECUTIVE 24-HOUR PERIOD), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.
2. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (0.5" OR MORE IN A CONSECUTIVE 24-HOUR PERIOD). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

HOUSEKEEPING

1. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.
2. GROUNDWATER PROTECTION: DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.
3. FUGITIVE SEDIMENT AND DUST: ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.
4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
5. EXCAVATION DE-WATERING: EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

GENERAL CONSTRUCTION NOTES

1. THIS PROJECT GENERALLY CONSISTS OF THE CONSTRUCTION OF STRUCTURES, UTILITIES AND PARKING AREAS TO SUPPORT A MIXED USE SUBDIVISION.
2. CONTRACTOR TO PROVIDE OWNER AND ENGINEER WITH A WORK PLAN OUTLINING THE WORK SCHEDULE, TRAFFIC CONTROL PLAN, AND WORK AREA BARRICADING PLAN TO BE APPROVED BY THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION WITH THE TOWN, UTILITY COMPANIES, DIG SAFE, AND EMERGENCY SERVICES WHERE APPLICABLE. CONTRACTOR SHALL NOTIFY ALL UTILITIES PRIOR TO COMMENCING WORK TO ALLOW SUFFICIENT TIME TO LOCATE AND MARK THE LOCATION OF ALL BURIED UTILITIES. CONTRACTOR SHALL ALSO CONTACT "DIG SAFE", TELEPHONE NO 811 OR 888-DIG-SAFE. REPAIR OF ANY DAMAGED UTILITY WILL BE INCIDENTAL TO THIS PROJECT.
4. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IN WRITING OF ANY CONDITION OR OCCURRENCE THAT REPRESENTS A CHANGE IN PROJECT SCOPE. VERBAL NOTIFICATION IS REQUIRED PRIOR TO PROCEEDING WITH THE WORK OF THE PROJECT AND WRITTEN NOTIFICATION MUST BE PROVIDED. REQUESTS FOR FEE ADJUSTMENTS WILL NOT BE CONSIDERED UNLESS PROPER NOTICE IS GIVEN.
5. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS AS REQUIRED TO PERFORM THE WORK AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE AND LOCAL CODES.
6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
7. THE CONTRACTOR SHALL SUPERVISE AND INSPECT THE WORK OF THIS PROJECT IN AN EFFICIENT AND COMPETENT MANNER. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO COMPLETE THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE WORK IS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. A REPRESENTATIVE OF THE GENERAL CONTRACTOR SHALL BE PRESENT DURING ALL PHASES OF THE WORK.
8. SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. PERFORM ALL WORK IN ACCORDANCE WITH SAFETY STANDARDS OF APPLICABLE LAWS, BUILDING AND CONSTRUCTION CODES, THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" PUBLISHED BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AND THE REQUIREMENTS OF TITLE 9 OF THE CODE OF FEDERAL REGULATIONS, PART 1926, "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION".
9. THE LOCATION, TYPE AND SIZE OF EXISTING PIPES, DUCTS, CONDUITS AND OTHER UNDERGROUND STRUCTURES SHOWN ON THE DRAWINGS ARE NOT WARRANTED TO BE EXACT NOR IS IT WARRANTED THAT ALL UNDERGROUND STRUCTURES ARE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. DEPTH OF SERVICES ARE UNKNOWN AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. EXCAVATING TEST PITS AS NECESSARY TO VERIFY UTILITY LOCATIONS AND DEPTHS SHALL BE INCIDENTAL TO THIS PROJECT.
10. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING TOPOGRAPHY AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING PIPE SIZES, INVERTS, AND LOCATIONS, AND SHALL INCLUDE FINDINGS IN SUBMITTAL PRIOR TO ORDERING.
12. LAYOUT OF THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE APPROVED BY THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GRADE AND LAYOUT CONTROL. LAYOUT SHOULD BE PERFORMED WITH SURVEY EQUIPMENT AND OVERSEEN BY A LICENSED SURVEYOR. A CAD FILE WILL BE AVAILABLE TO THE CONTRACTOR.
13. THE WORK SHALL INCORPORATE EROSION CONTROL MEASURES WHICH ARE COMPLIANT WITH THE LATEST VERSION OF "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES".
14. CONTRACTOR SHALL BE REQUIRED TO PROVIDE DUST CONTROL FOR PROJECT WHICH CAN INCLUDE, BUT IS NOT LIMITED TO, WATER AND CALCIUM CHLORIDE. COST IS INCIDENTAL TO THE PROJECT.
15. RESTRICT ACCESS TO SITE THROUGH THE USE OF APPROPRIATE SIGNAGE, GATES, BARRIERS, FENCES, ETC. SITE SHALL BE LEFT WITH APPROPRIATE SAFETY MEASURES IN PLACE DURING NON-WORKING HOURS. NO TRENCH SHALL BE LEFT OPEN DURING NON-WORKING HOURS. SITE SAFETY IS THE RESPONSIBILITY OF CONTRACTOR, DURING BOTH WORKING AND NON-WORKING HOURS.
16. CONTRACTOR SHALL PERFORM ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROJECT WITHIN THE CONFINES OF THE SITE. ANY ACTIVITY, MATERIAL STORAGE ETC., TAKING PLACE ON PRIVATE PROPERTY SHALL BE WITH THE EXPRESS WRITTEN PERMISSION OF THE OWNER AND PROPERTY OWNER AND COORDINATED WITH THE OWNER. WORK OUTSIDE OF THESE LIMITS MAY BE REQUIRED.
17. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT EQUIPMENT FLUIDS FROM REACHING ANY WATER COURSE. ANY INADVERTENT FLUID DISCHARGES SHALL BE IMMEDIATELY CLEANED FROM THE WATERS USING WHATEVER MEANS NECESSARY, AS DETERMINED BY THE ENGINEER.
18. ALL FINISH SURFACES SHALL BE INSTALLED TO PROMOTE POSITIVE DRAINAGE. IN NO WAY SHALL THE NEW FINISH SURFACES CREATE DRAINAGE PROBLEMS THAT DID NOT EXIST PRIOR TO CONSTRUCTION.
19. ALL SIGNING, SIGNAL, AND STRIPING MATERIALS AND PLACEMENT SHALL CONFORM TO THE MDOT STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND STANDARD DETAILS AND WITH FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
20. EXISTING FACILITIES, PLANTINGS AND IMPROVEMENTS (I.E. TREES, LIGHT POLES, SIGNS, CONCRETE SIDEWALK, ETC.) SHALL BE REMOVED AND REPLACED OR PROTECTED AS REQUIRED DURING CONSTRUCTION. THE ASSOCIATED COSTS ARE INCIDENTAL TO THE PROJECT.
21. RESTORE ALL AREAS DISTURBED BY CONTRACTORS' OPERATION TO ORIGINAL CONDITIONS (GRAVEL, PAVEMENT, GRASS, CURB, ETC.) UNLESS NOTED OTHERWISE ON THE PLANS. RESTORATION OF ROADS, PARKING SURFACES AND LAWNS DAMAGED BY THE CONTRACTOR SHALL BE INCIDENTAL TO THE PROJECT.
22. ALL MATERIALS SCHEDULED FOR REMOVAL SHALL BE DISPOSED OF IN A LEGAL MANNER BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE OWNER HAS THE FIRST RIGHT AND REFUSAL FOR ANY DEMOLITION MATERIALS.
23. DISPOSAL OF SURPLUS SOIL MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR; SURPLUS MATERIAL SHALL NOT BE DISPOSED OF ON THE PROJECT SITE. DISPOSAL SHALL BE MADE ONLY AT WASTE AREAS WHICH ARE LICENSED TO ACCEPT SUCH MATERIALS, UNLESS THE MATERIAL IS ACCEPTABLE FOR USE AS FILL IN OTHER AREAS OF THE PROJECT. THE OWNER HAS THE FIRST RIGHT AND REFUSAL FOR ANY SURPLUS SOIL MATERIALS.
24. ALL TEST PITS NECESSARY TO LOCATE SERVICES SHALL BE INCIDENTAL TO THE PROJECT.
25. PROPERLY PROTECT AND DO NOT DISTURB PROPERTY IRONS AND MONUMENTS. IF DISTURBED, THE PROPERTY MONUMENT SHALL BE RESET AT THE CONTRACTOR'S EXPENSE, BY A REGISTERED LAND SURVEYOR APPROVED BY THE ENGINEER.

CULVERT TABLE

Culvert ID	Inv. In	Inv. Out	Culvert Size (Inches)	Length (LF)	Slope
1	727.75	727.55	15	40	0.005
2	725.75	725.55	15	40	0.005
3	667.50	667.30	15	40	0.005
4	656.00	655.77	15	45	0.005
5	651.75	650.00	15	50	0.035
6	662.75	662.55	15	40	0.005
7	658.75	658.53	15	44	0.005
8	657.75	657.55	15	40	0.005
9	657.75	657.55	15	40	0.005
10	656.00	655.80	15	40	0.005
11	648.06	647.83	15	45	0.005
12	627.50	625.00	15	48	0.05
13	617.50	614.00	18	46	0.05
14	619.00	616.00	24	50	0.06
15	646.25	646.17	15	16	0.005
16	646.00	645.82	15	35	0.005
17	644.75	644.68	15	14	0.005
18	644.00	643.80	15	38	0.005
19	631.75	631.63	15	24	0.005
20	627.75	627.66	15	18	0.005
21	627.50	627.24	15	52	0.005
22	648.39	648.16	45	15	0.005
23	648.06	617.83	15	45	0.005
24	647.37	647.27	15	20	0.005
25	646.89	646.79	15	20	0.005
26	646.32	646.22	15	20	0.005
27	645.98	645.88	15	20	0.005
28	645.50	645.40	15	20	0.005
29	644.89	644.79	15	20	0.005
30	644.52	644.42	15	20	0.005
31	644.25	644.20	15	10	0.005
32	643.79	643.69	15	20	0.005
33	643.66	643.56	15	20	0.005
34	642.95	642.85	15	20	0.005
35	643.67	643.57	15	20	0.005
36	642.00	641.83	18	20	0.005
37	642.75	642.65	15	20	0.005
38	643.58	643.48	15	20	0.005
39	644.50	644.40	15	20	0.005
40	645.08	644.98	15	20	0.005
41	645.75	645.50	15	40	0.005
42	647.26	647.16	15	20	0.005
43	648.87	648.77	15	20	0.005
44	649.83	649.73	15	20	0.005
45	650.25	650.15	15	20	0.005
46	649.25	649.15	15	20	0.005
47	648.75	648.65	15	20	0.005
48	648.75	648.65	15	20	0.005
49	652.75	652.67	15	16	0.005
50	654.75	654.67	15	16	0.005
51	616.68	616.58	15	40	0.005
52	616.30	616.20	15	20	0.005
53	614.60	614.50	15	45	0.005
54	614.76	614.56	15	40	0.005
55	615.28	615.18	15	20	0.005
56	615.88	615.78	15	20	0.005
57	616.60	616.50	15	20	0.005
58	616.87	616.77	15	20	0.005
59	617.38	617.28	15	20	0.005
60	617.83	617.73	15	20	0.005
61	618.10	618.00	15	20	0.005
62	618.37	618.27	15	20	0.005
63	618.70	618.60	15	20	0.005
64	618.28	618.18	15	20	0.005
65	616.98	616.88	15	20	0.005
66	615.69	615.59	15	20	0.005
67	613.70	613.60	15	20	0.005
68	609.90	609.80	15	20	0.005
69	606.70	606.60	15	20	0.005
70	603.40	603.30	15	20	0.005
71	601.87	601.77	15	20	0.005
72	601.50	601.32	15	20	0.005
73	601.75	601.65	15	20	0.005
74	602.98	602.88	15	20	0.005
75	609.08	608.98	15	20	0.005
76	643.75	643.50	15	30	0.005

LEGEND:

DESCRIPTION	*EXISTING*	*PROPOSED*
PROPERTY LINE		
PROPERTY SETBACK		
ZONING LINE	Z	
STREAM		
TEST PIT	TP-2	
SOIL EXPLORATION TEST PIT	204	
MOYSE TEST PIT	HTP 220	
UTILITY POLE	UP	
WELL	W	W
SIGN		
EDGE OF GRAVEL		
EDGE OF PAVEMENT		
MAJOR FOOT CONTOUR	100	100
MINOR FOOT CONTOUR	98	98
WATERLINE	W	W
SANITARY SEWER	SS	SS
FORCE MAIN		FM
OVERHEAD UTILITIES	OHU	OHU
UNDERGROUND ELECTRIC	E	
CULVERT	SD	
SILT FENCE		SF
TREE LINE		
CULVERT LABEL		26
GRAVEL SURFACE		
BUILDING FOOTPRINT		
WETLANDS		
RIPRAP		

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

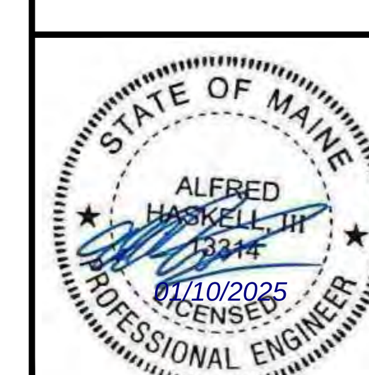
HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

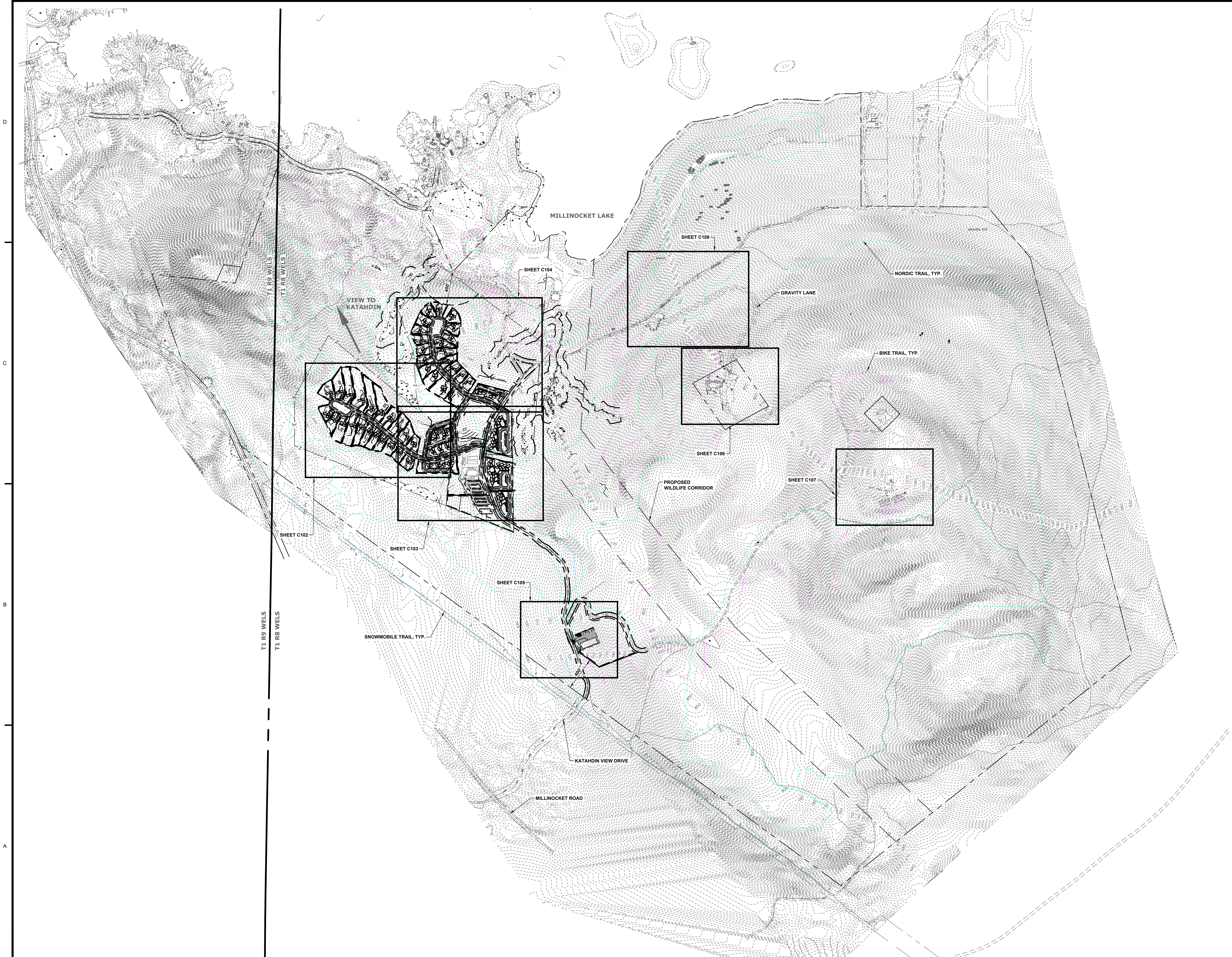
TITLE

GENERAL NOTES PLAN



DATE	SCALE	
2024.09.23	NTS	
DRAWN BY	DESIGNED BY	CHECKED BY
WAB	WAB	ACH
PROJECT No.		
12596.004		
DRAWING No.	REV.	
C001		

FILE LOCATION: P:\ME\12596-HAMMOND_RIDGE_DEVELOPMENT_CORP_POLSTEIN\004-MDEP SLODA PEMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-C-GN.DWG, 2025.01.10, 4:10 PM



NOTES:

1. RECORD OWNER IS HAMMOND RIDGE DEVELOPMENT COMPANY, LLC WHOSE ADDRESS IS AS RECORDED IN THE PENOBSCOT COUNTY REGISTRY OF DEEDS, BOOK 10256 PAGE 1.

2. EXISTING CONDITIONS BASED ON TOPOGRAPHIC INFORMATION COMPILED BY SEWALL AND PROVIDED BY THE RECORD OWNER. ACTUAL CONDITIONS MAY VARY IN THE FIELD. OWNER/CONTRACTOR TO NOTIFY ENGINEER IF VARIATIONS ARE APPARENT DURING CONSTRUCTION.

3. WETLAND DELINEATION WAS CONDUCTED BY MOYSE ENVIRONMENTAL SERVICES.

4. SOILS OBSERVATIONS WERE COMPLETED BY JOHANNA SZILLERY, L.S.S. 494 OF HALEY WARD, INC. IN DECEMBER 2024, AND SARAH ASHLEY, L.S.E. 408 OF SASH ENGINEERING, INC. IN NOVEMBER 2023 AND DECEMBER 2024. ADDITIONAL SOILS DATA WAS PROVIDED BY DAVID MOYSE, L.S.S. 195 OF MOYSE ENVIRONMENTAL SERVICES. SEE SITE LOCATION OF DEVELOPMENT ACT APPLICATION FOR ADDITIONAL DETAILS.

5. FEATURES WERE LOCATED USING A SUB-METER CAPABLE GPS UNIT. DATA WAS POST-PROCESSED ACCORDING TO MANUFACTURER'S RECOMMENDED POST-PROCESSING SETTINGS USING CORS REFERENCE STATIONS.

6. EXISTING TOPOGRAPHY IS BASED ON LIDAR TOPOGRAPHY FROM THE MAINE GIS WEBSITE.

GRAPHIC SCALE

500 0 250 500 1000 1500

(IN FEET)
1 inch = 500 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

OVERALL SITE PLAN

STATE OF MAINE · ALFRED HASKELL, III · 13314 · LICENSED · PROFESSIONAL ENGINEER · 01/10/2025

DATE	SCALE	
2024.07.25	1"=500'	
DRAWN BY: WAB	DESIGNED BY: ALF	CHECKED BY: ACH
PROJECT No.: 12596.004		
DRAWING No.: **C100**	REV.:	

FILE LOCATION: P:\ME\12596-HAMMOND_RIDGE_DEVELOPMENT_CORP_POLSTEIN\004-MDEP SLODA PERMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-C-SP.DWG, 2025.01.10, 4:00 PM

T1 R9 WELS

T1 R8 WELS

VIEW TO KATAHDIN

PROPERTY RETAINED BY APPLICANT

PROPERTY RETAINED BY APPLICANT

PROPERTY RETAINED BY APPLICANT

PROPERTY RETAINED BY APPLICANT

LOT 1 0.74 AC
LOT 2 0.91 AC
LOT 3 1.10 AC
LOT 4 1.67 AC
LOT 5 1.21 AC
LOT 6 1.25 AC
LOT 7 .84 AC
LOT 8 0.88 AC
LOT 9 .74 AC
LOT 10 0.55 AC
LOT 11 0.53 AC
LOT 12 0.56 AC
LOT 13 .87 AC
LOT 14 1.08 AC
LOT 15 0.75 AC
LOT 16 0.63 AC
LOT 17 0.58 AC
LOT 18 0.50 AC
LOT 19 0.55 AC
LOT 20 0.50 AC
LOT 21 0.56 AC
LOT 22 0.80 AC
LOT 23 1.07 AC
LOT 24 0.71 AC
LOT 25 0.58 AC
LOT 26 0.53 AC
LOT 27 0.52 AC
LOT 28 0.52 AC
LOT 29 0.51 AC
LOT 30 0.51 AC
LOT 31 0.51 AC
LOT 32 0.51 AC
LOT 33 0.54 AC
LOT 34 0.51 AC
LOT 35 0.50 AC
LOT 36 0.78 AC
LOT 37 0.64 AC
LOT 38 0.50 AC
LOT 39 0.51 AC
LOT 40 0.50 AC
LOT 41 0.53 AC

LOT 1 MIXED-USE 4.9 AC
LOT 2 MIXED-USE 3.7 AC
LOT 3 MIXED-USE 1.4 AC
LOT 4 MIXED-USE 2.6 AC
LOT 5 MIXED-USE 3.0 AC
LOT 6 MIXED-USE 1.34 AC
LOT 7 open space 4.7 AC
LOT 8 MIXED-USE 1.9 AC
LOT 9 MIXED-USE 2.1 AC

ROAD A
ROAD B
ROAD C
ROAD D

BUILDING ENVELOPE, TYP.

ACTIVITY CENTER

24@35'X120' SAP

BROOKS STREET 20.000' SAP

BLACK CAT ROAD

BLACK CAT ROAD

GRAPHIC SCALE

150 0 75 150 300 450

(IN FEET)
1 inch = 150 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

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207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED SUBDIVISION PLAN

STATE OF MAINE
ALFRED L. HASKELL, III
12166
LICENSED
PROFESSIONAL ENGINEER
4/10/2025

DATE	SCALE
2024.07.25	1"=150'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C101** REV.

FILE LOCATION: P:\ME\12596\HAMMOND_RIDGE_DEVELOPMENT_CORP_POLSTEIN\004-MDEP SLODA PERMITTING\ACHX02\CAD_FILES\CIVIL\12596.004-C-SP.DWG, 2025.01.10, 4:40 PM

PROPOSED DRIVEWAY, TYP.

PROPOSED SINGLE FAMILY SUBDIVISION (A)

DOUBLE SILT FENCE TO BE PLACED FOR DEVELOPMENT UPGRADIANT OF WETLAND, TYP.

LOTS 22 AND 23 TO BE GRADED TO DRAIN BACK TOWARDS THE ROAD

RENTAL CABINS (LOT 8 & 9) TYP.

LOT 1 2.74 AC
LOT 2 0.91 AC
LOT 3 1.10 AC
LOT 4 1.67 AC
LOT 5 1.21 AC
LOT 6 1.25 AC
LOT 7 .84 AC
LOT 8 MIXED-USE 1.9 AC
LOT 9 MIXED-USE 2.1 AC.
LOT 9 0.88 AC
LOT 9 .74 AC
LOT 10 0.55 AC
LOT 11 0.53 AC
LOT 12 0.56 AC
LOT 13 .87 AC
LOT 14 1.08 AC
LOT 15 0.75 AC
LOT 16 0.63 AC
LOT 17 0.58 AC
LOT 18 0.50 AC
LOT 19 0.55 AC
LOT 20 0.50 AC
LOT 21 0.56 AC
LOT 22 0.58 AC
LOT 23 1.07 AC
LOT 24 0.71 AC
LOT 25 0.58 AC

HTB 214 HTB 220 HTB 209 HTB 207 HTB 223 HTB 225

GRAPHIC SCALE

60 0 30 60 120 180

(IN FEET)
1 inch = 60 ft.

REV.	DATE	DESCRIPTION	BY	CHK

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED GRADING AND EROSION CONTROL PLAN

STATE OF MAINE
ALFRED HASKELL JR
12415
LICENSED
PROFESSIONAL ENGINEER
07/10/2025

DATE	SCALE
2024.07.25	1"=60'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C102** REV.

LOT 8
0.88 AC

LOT 9
7.4 AC

LOT 10
0.55 AC

LOT 20
0.50 AC

LOT 21
0.56 AC

LOT 7
open space
4.7 AC

AMPHITHEATER AREA

STAGE

LOT 9
MIXED-USE
2.1 AC

LOT 8
MIXED-USE
1.9 AC

LOT 5
MIXED-USE
3.0 AC

LOT 1
MIXED-USE
4.9 AC

LOT 4
MIXED-USE
2.6 AC

LOT 3
MIXED-USE
1.4 AC

LOT 2
MIXED-USE
3.7 AC

ACTIVITY CENTER SYSTEM

2@35'X120' S&P

EXISTING ACTIVITY CENTER

Concrete

Roof line

EMERGENCY SYSTEM 20'X20' S&P

RENTAL CABINS (LOT 8 & 9) TYP.

APPROXIMATE LOCATION OF EXISTING ROOF DRAIN

EXISTING 15" CULVERT TO BE REMOVED

PROPOSED OPERATIONS BUILDING (LAUNDRY)
149'
60'

CONDO (LOT 3, 4, 5, & 6) TYP.

10' TYP.

GRAPHIC SCALE

60 0 30 60 120 180

(IN FEET)
1 inch = 60 ft.

REV.	DATE	DESCRIPTION	BY	CHK

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED GRADING AND EROSION CONTROL PLAN

STATE OF MAINE
ALFRED HASKELL III
12345
LICENSED
PROFESSIONAL ENGINEER
01/10/2025

DATE	SCALE
2024.07.25	1"=60'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C103** REV.

PROPOSED DRIVEWAY, TYP.

PROPOSED SINGLE FAMILY SUBDIVISION (B)

DOUBLE SILT FENCE TO BE PLACED FOR DEVELOPMENT UPGRADIANT OF WETLAND, TYP.

LOTS 22 AND 23 TO BE GRADED TO DRAIN BACK TOWARDS THE ROAD

CONDO (LOTS 3, 4, 5, & 6) TYP.

LOT 22 0.80 AC
LOT 23 1.07 AC
LOT 24 0.71 AC
LOT 25 0.58 AC
LOT 26 0.53 AC
LOT 27 0.52 AC
LOT 28 0.52 AC
LOT 29 0.51 AC
LOT 30 0.51 AC
LOT 31 0.51 AC
LOT 32 0.51 AC
LOT 33 0.54 AC
LOT 34 0.51 AC
LOT 35 0.50 AC
LOT 36 0.78 AC
LOT 37 0.64 AC
LOT 38 0.50 AC
LOT 39 0.51 AC
LOT 40 0.50 AC
LOT 41 0.53 AC
LOT 6 MIXED-USE 1.34 AC

HTP 216
HTP 218
HTP 204
HTP 104

GRAPHIC SCALE

60 0 30 60 120 180

(IN FEET)
1 inch = 60 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED GRADING AND EROSION CONTROL PLAN

STATE OF MAINE
ALFRED HASKELL JR
20414
01/10/2025
LICENSED
PROFESSIONAL ENGINEER

DATE	SCALE
2024.07.25	1"=60'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C104** REV.

PROPOSED 20' x 45' SEPTIC SYSTEM, TYPICAL ALL RESIDENTIAL LOTS

PROPOSED WELL, TYP.

PROPOSED 100' WELL SETBACK, TYP.

PROPOSED SEPTIC TANK (TYP.)

PROPOSED SEWER LINE (TYP.)

PROPOSED SEWER LINE (TYP.)

PROPOSED SEPTIC TANK (TYP.)

LOT 1 0.74 AC

LOT 2 0.91 AC

LOT 3 1.10 AC

LOT 4 1.67 AC

LOT 5 1.25 AC

LOT 6 1.25 AC

LOT 7 .91 AC

LOT 8 0.88 AC

LOT 9 0.74 AC

LOT 10 0.55 AC

LOT 11 0.53 AC

LOT 12 0.56 AC

LOT 13 .87 AC

LOT 14 1.08 AC

LOT 15 0.75 AC

LOT 16 0.63 AC

LOT 17 0.58 AC

LOT 18 0.50 AC

LOT 19 0.55 AC

LOT 20 0.50 AC

LOT 21 0.56 AC

LOT 22 0.71 AC

LOT 23 1.07 AC

LOT 24 0.71 AC

LOT 25 0.58 AC

LOT 8 MIXED-USE 1.9 AC

LOT 9 MIXED-USE 2.1 AC

BONUS: 4B3BR CONDO; 48'X36' INF

LOT 9 - 4B3BR + 4B2BR CABINS

2B25'X100' S&P

LOT 9 - 4B3BR + 4B2BR CABINS

2B25'X100' S&P

LOT 9 - 4B3BR CABINS 22'X135' (INF.)

TP 1 TP 2 TP 3 TP 4 TP 5 TP 6 TP 7 TP 8 TP 9 TP 10 TP 11 TP 12 TP 13 TP 14 TP 15 TP 16 TP 17 TP 18 TP 19 TP 20 TP 21 TP 22 TP 23 TP 24 TP 25 TP 26 TP 27 TP 28 TP CBA TP CBB

UNK

GRAPHIC SCALE

60 0 30 60 120 180

(IN FEET)
1 inch = 60 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED UTILITY PLAN

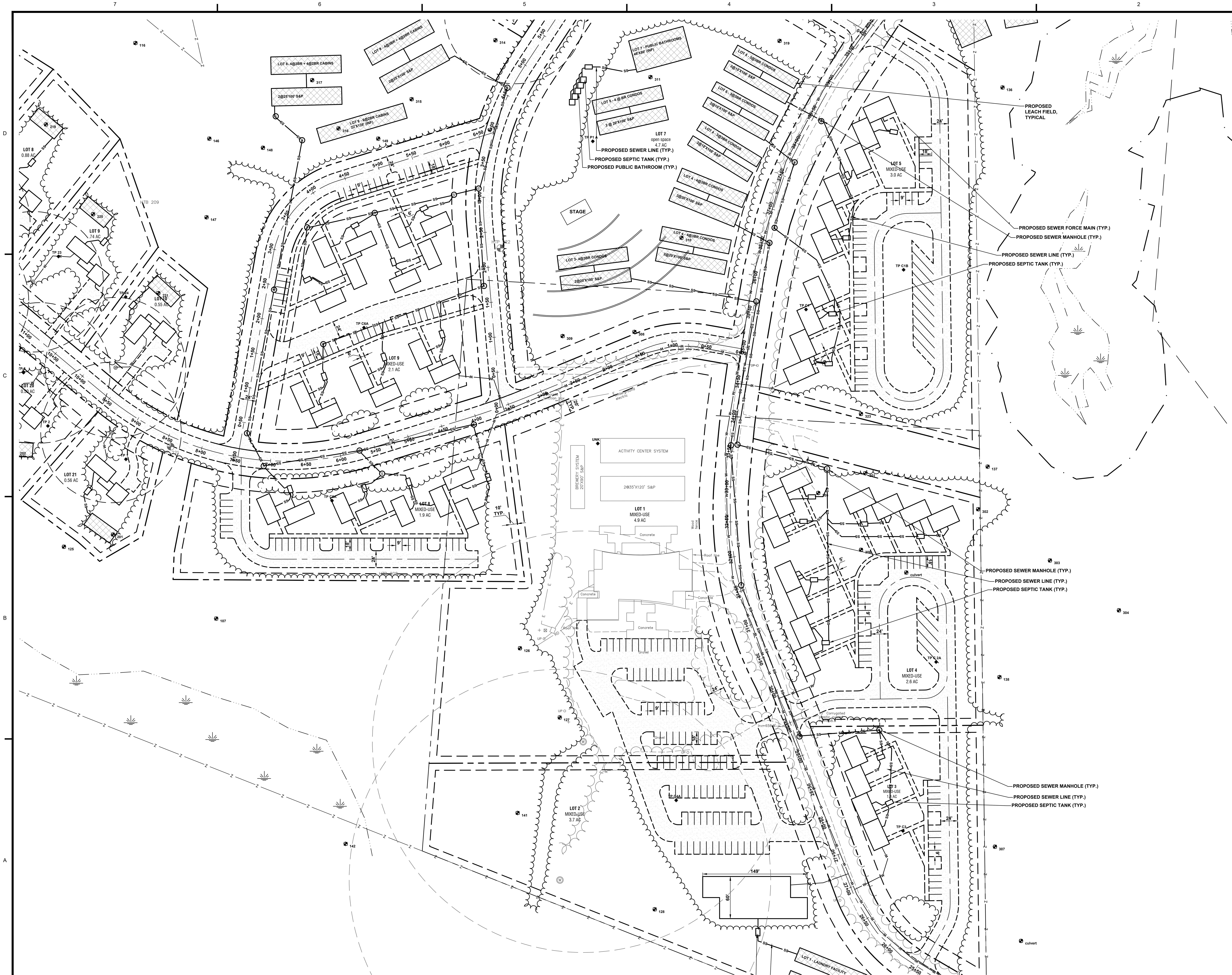
STATE OF MAINE
ALFRED HASKELL III
12414
07/10/2025
LICENSED
PROFESSIONAL ENGINEER

DATE	SCALE
2024.07.25	1"=60'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C105** REV.



GRAPHIC SCALE

60 0 30 60 120 180

(IN FEET)
1 inch = 60 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED UTILITY PLAN

DATE	SCALE
2024.07.25	1"=60'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C106** REV.

STATE OF MAINE — ALFRED HASKELL III — 13314 — LICENSED — PROFESSIONAL ENGINEER — 01/10/2025

PROPOSED 100' WELL SETBACK, TYP.

PROPOSED 20' x 45' SEPTIC SYSTEM, TYPICAL ALL RESIDENTIAL LOTS

PROPOSED WELL, TYP.

PROPOSED SEWER LINE (TYP.)

PROPOSED SEPTIC TANK (TYP.)

PROPOSED SEWER MANHOLE (TYP.)

PROPOSED SEWER LINE (TYP.)

PROPOSED SEPTIC TANK (TYP.)

PROPOSED 100' WELL SETBACK, TYP.

GRAPHIC SCALE

60 0 30 60 120 180

(IN FEET)
1 inch = 60 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED UTILITY PLAN

STATE OF MAINE
ALFRED HASKELL III
12596
PROFESSIONAL ENGINEER
LICENSED
7/10/2025

DATE	SCALE
2024.07.25	1"=60'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C107** REV.

EXISTING GRAVEL PIT
TO BE RECLAIMED

PROPOSED 15" HDPE CULVERT
INV. IN: 725.75
INV. OUT: 725.55
L: 40 LF / S: 0.005

PROPOSED 15" HDPE CULVERT
INV. IN: 727.75
INV. OUT: 725.55
L: 40 LF / S: 0.005

LOT 1
COMMERCIAL /
OPERATIONS USE
8.2 AC.

PROPOSED
MAINTENANCE BUILDING

PROPOSED SEPTIC TANK

PROPOSED SEWER LINE

PROPOSED SEPTIC FILED

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PROPOSED MAINTENANCE BUILDING SITE PLAN

STATE OF MAINE
ALFRED HASKELL III
13944
REGISTERED PROFESSIONAL ENGINEER
07/10/2025

DATE	SCALE
2024.07.25	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C108** REV.

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

EVENT CENTER SITE PLAN

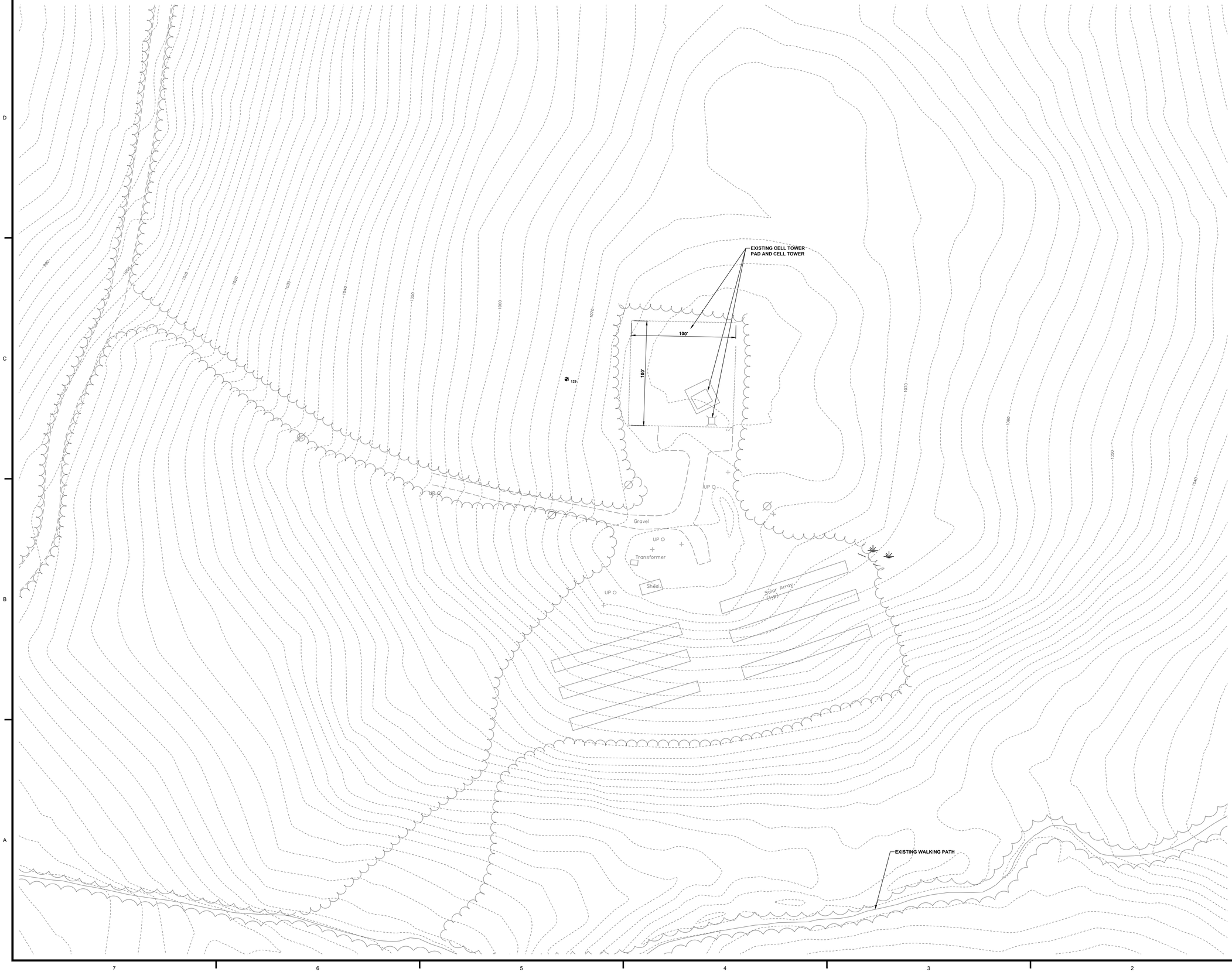
STATE OF MAINE
ALFRED HASKELL III
12446
6/10/2025
LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
2024.07.25	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C109** REV.



GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

SOLAR ARRAY SITE PLAN

STATE OF MAINE
ALFRED HASKELL III
13244
07/10/2025
LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
2024.07.25	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C110** REV.

DRAINAGE

BLACK CAT ROAD

#20 UP DHU

#19 UP DHU

#18 UP DHU

#17 UP DHU

#16 UP DHU

DHU

134

PROPOSED 18" HDPE
INV. IN: 709.75
INV. OUT: 709.57
L: 35' / S: 0.005

135

PROPOSED 15" HDPE
INV. IN: 628.50
INV. OUT: 628.30
L: 40' / S: 0.005

PROPOSED 18" HDPE
INV. IN: 625.50
INV. OUT: 625.30
L: 40' / S: 0.005

600

620

640

660

680

700

710

720

730

740

750

760

670

GRAPHIC SCALE

50 0 25 50 100 150

(IN FEET)
1 inch = 50 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

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207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD SIDE BUFFER SITE PLAN

STATE OF MAINE
ALFRED HASKELL JR
13414
07/10/2025
LICENSED
PROFESSIONAL ENGINEER

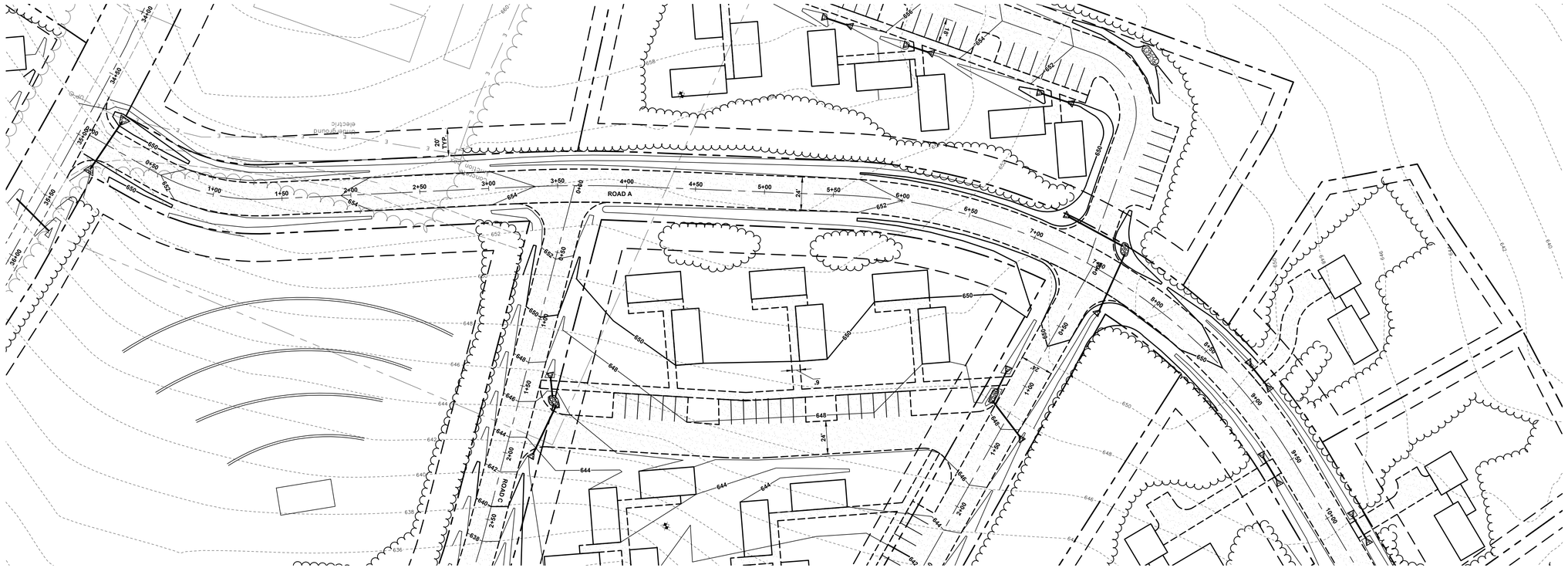
DATE	SCALE
2024.07.25	1"=50'

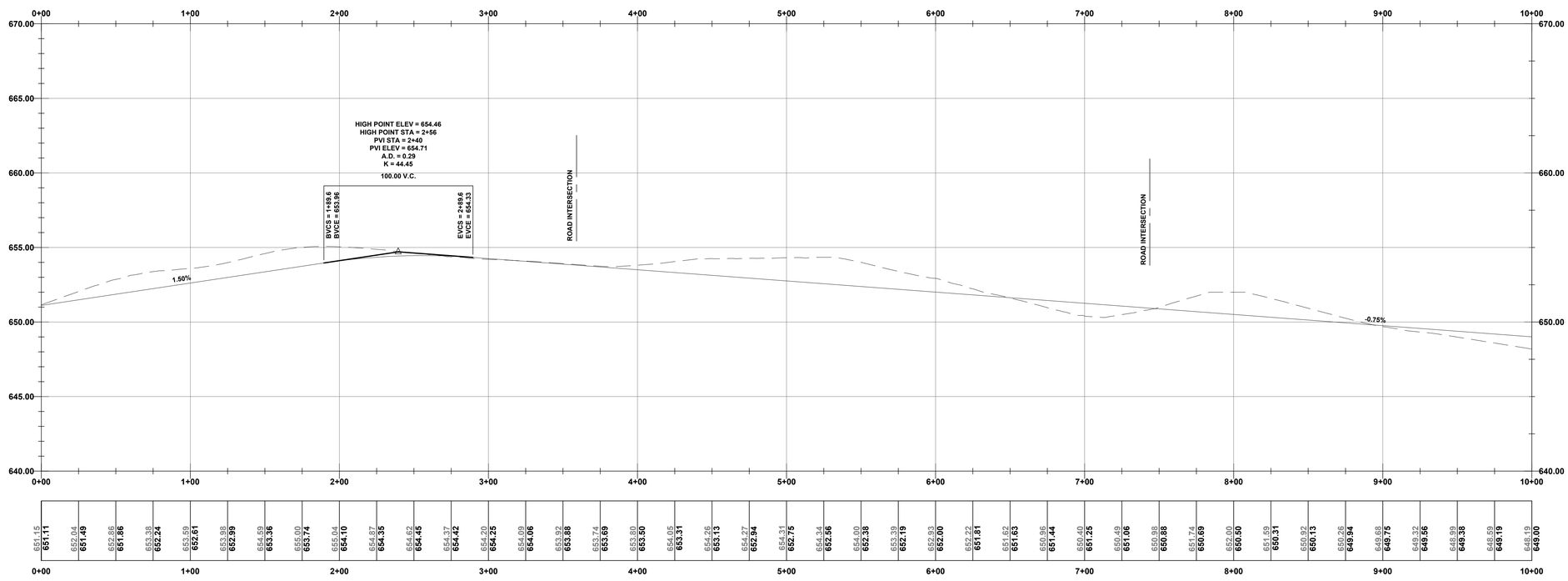
DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C111** REV.

FILE LOCATION: P:\ME\12596\HAMMOND_RIDGE_DEVELOPMENT_CORP_POLISTEN\000-MDEP SLODA PERMITTING-ACH\CAD\CAD_FILES\CIVIL\12596.004-C-SP.DWG, 2025.01.10, 4:02 PM





GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

HALEY WARD
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Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD A PLAN AND PROFILE
STA: 0+00 TO 10+00

STATE OF MAINE
ALFRED L. HASKELL, JR.
12116
PROFESSIONAL ENGINEER
LICENSED
01/10/2025

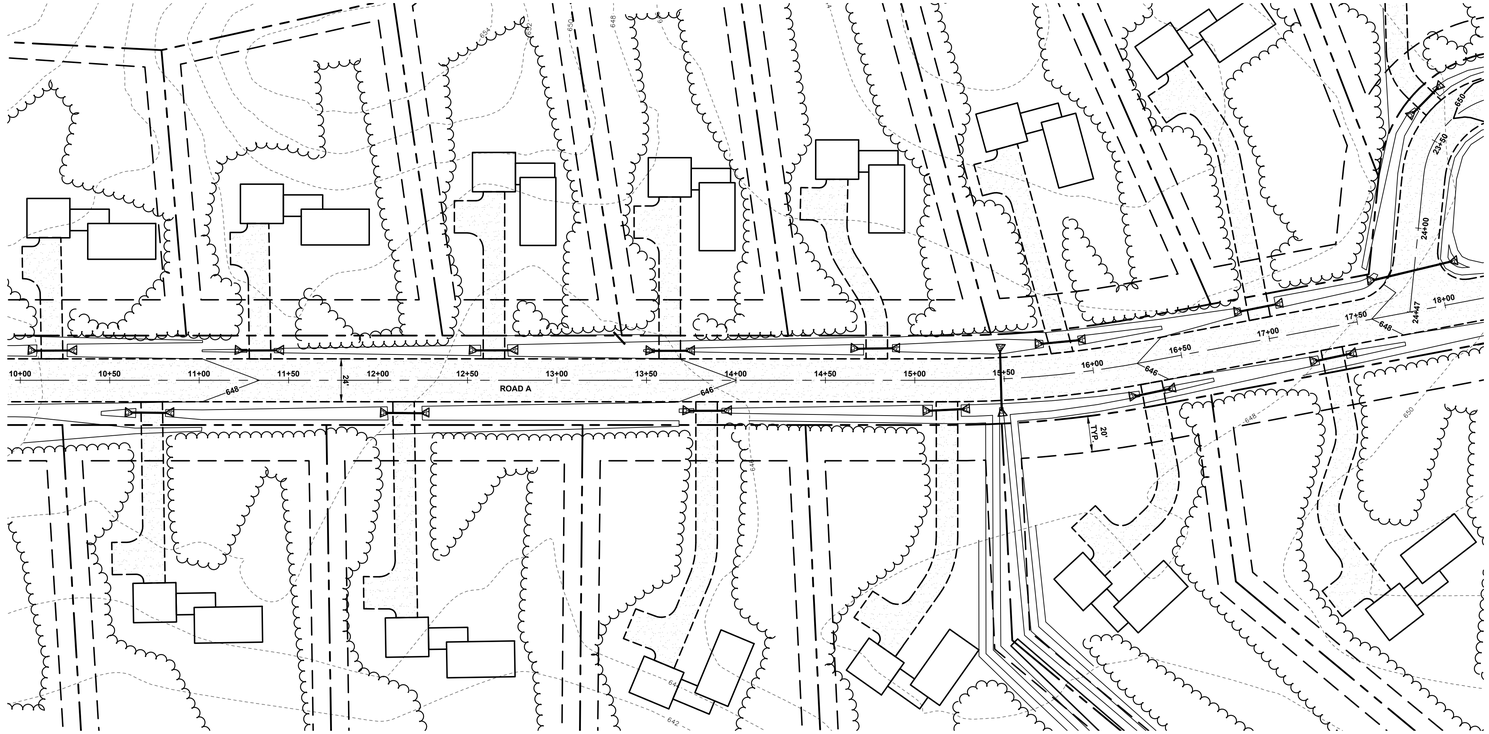
DATE	SCALE
2024.07.25	1"=40'

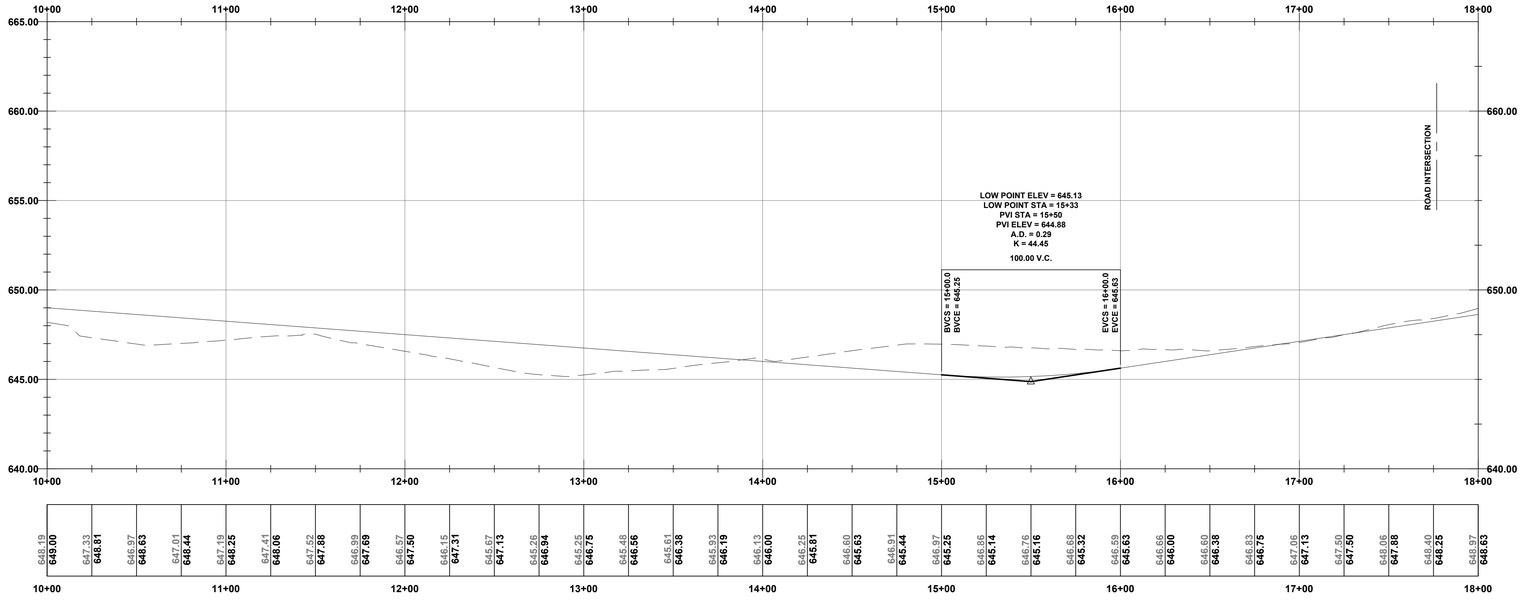
DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C201** REV.

FILE LOCATION: P:\ME\12596-HAMMOND_RIDGE_DEVELOPMENT_CORP_FOLSTEIN\004-MDEP SLODA PERMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-C-PP.DWG, 2025.01.10, 4:03 PM





GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD A PLAN AND PROFILE
STA: 10+00 TO 18+00

STATE OF MAINE
ALFRED L. HASKELL, III
12345
PROFESSIONAL ENGINEER
LICENSED
01/10/2025

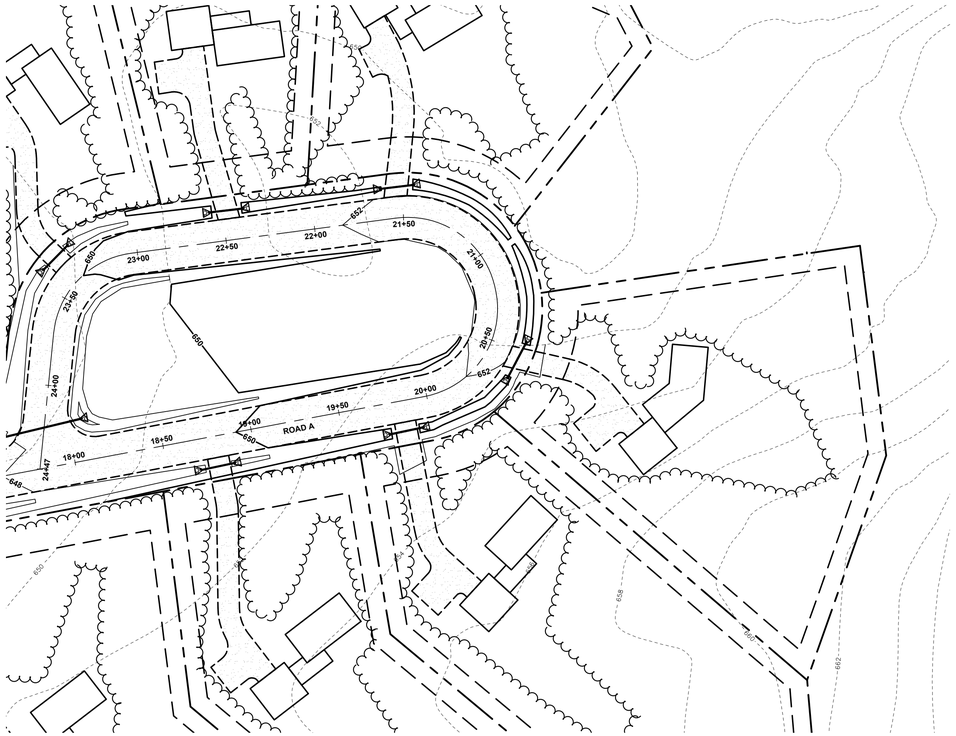
DATE	SCALE
2024.07.25	1"=40'

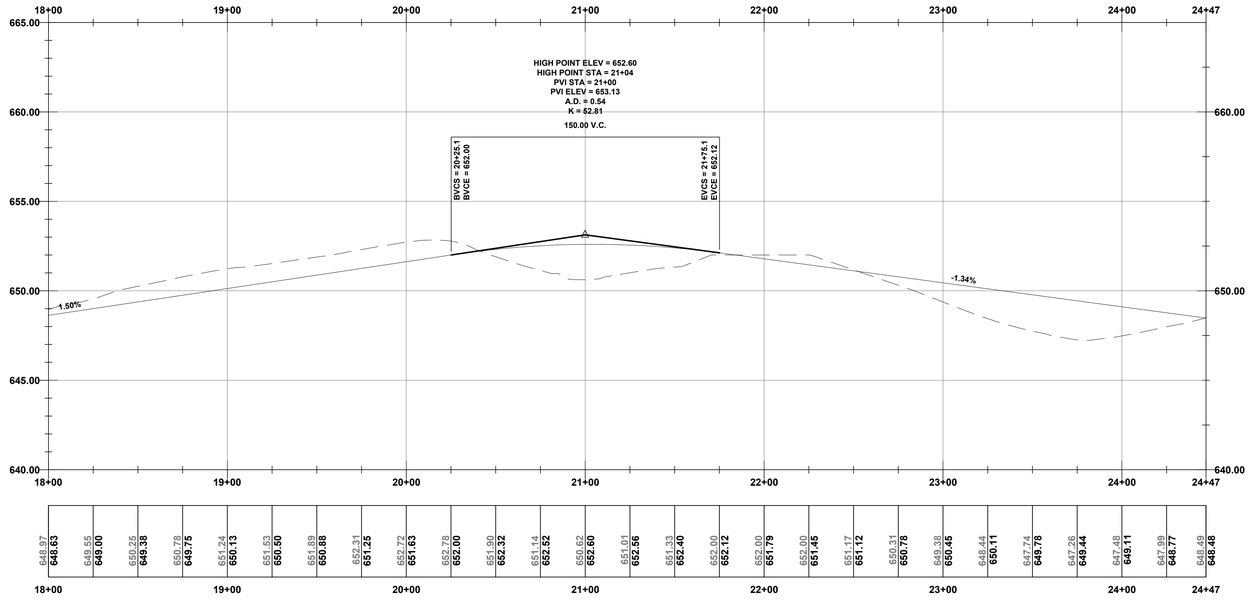
DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C202** REV.

FILE LOCATION: P:\ME\12596-HAMMOND_RIDGE_DEVELOPMENT_CORP_POLSTEN\004-MDEP SLODA PERMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-C-PP.DWG, 2025.01.10, 4:03 PM





GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD A PLAN AND PROFILE
STA: 18+00 TO 24+47

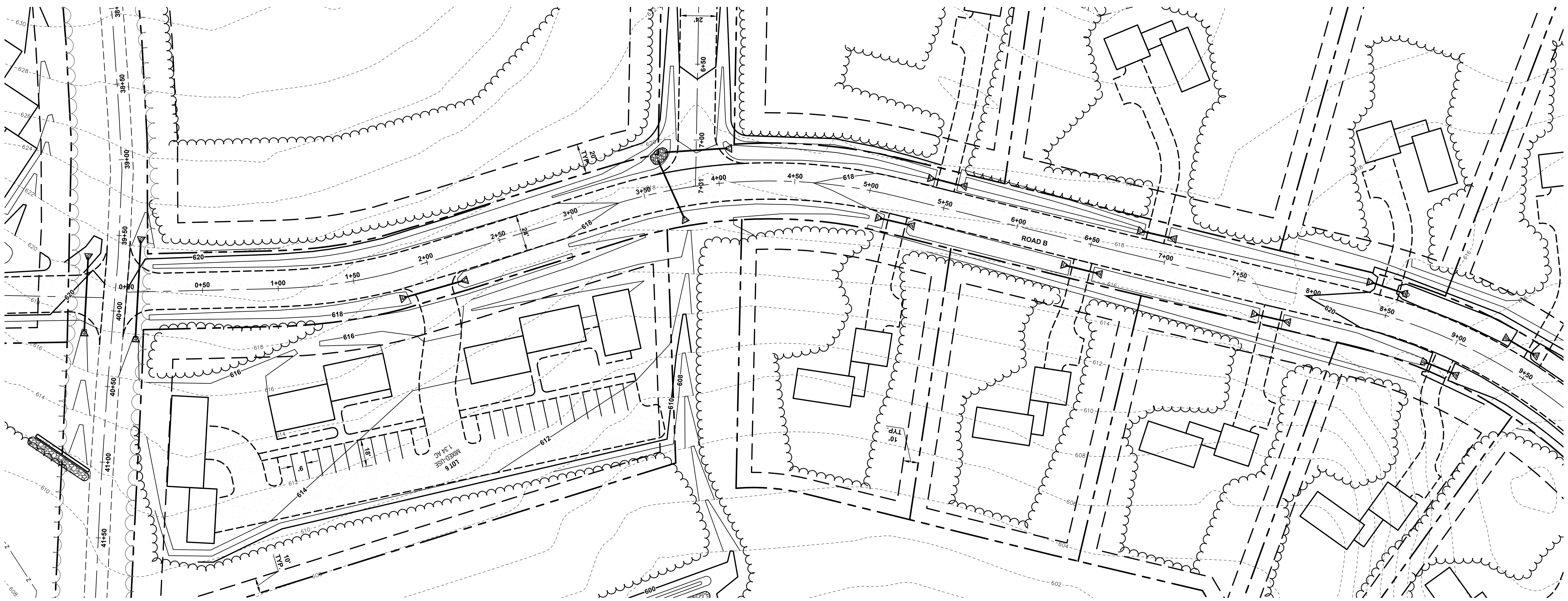
STATE OF MAINE
ALFRED LESLIE FOSTER III
12345
LICENSED
PROFESSIONAL ENGINEER
01/10/2025

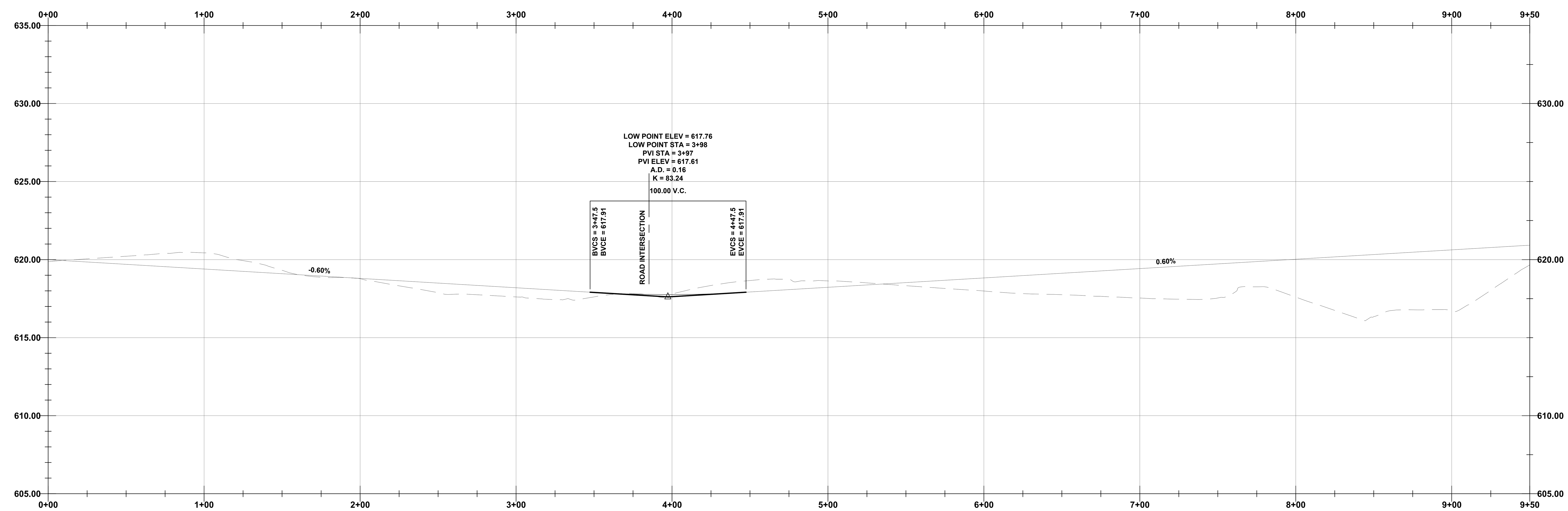
DATE	SCALE
2024.07.25	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C203** REV.





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620.05	619.85
620.22	619.70
620.41	619.55
620.43	619.40
619.93	619.25
619.31	619.10
618.86	618.95
618.77	618.80
618.32	618.65
617.88	618.50
617.75	618.35
617.61	618.20
617.43	618.05
617.61	617.90
617.83	617.79
617.78	617.76
618.34	617.80
618.66	617.92
618.75	618.07
618.63	618.22
618.51	618.37
618.33	618.52
618.15	618.67
617.99	618.82
617.82	618.97
617.75	619.12
617.64	619.27
617.54	619.42
617.46	619.57
617.54	619.72
618.26	619.87
617.60	620.02
616.74	620.17
616.34	620.32
616.78	620.47
616.71	620.62
618.03	620.77
619.65	620.92

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 9+50

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD B PLAN AND PROFILE
STA: 0+00 TO 9+50

STATE OF MAINE
ALFRED HASKELL III
13314
LICENSED
01/10/2025
PROFESSIONAL ENGINEER

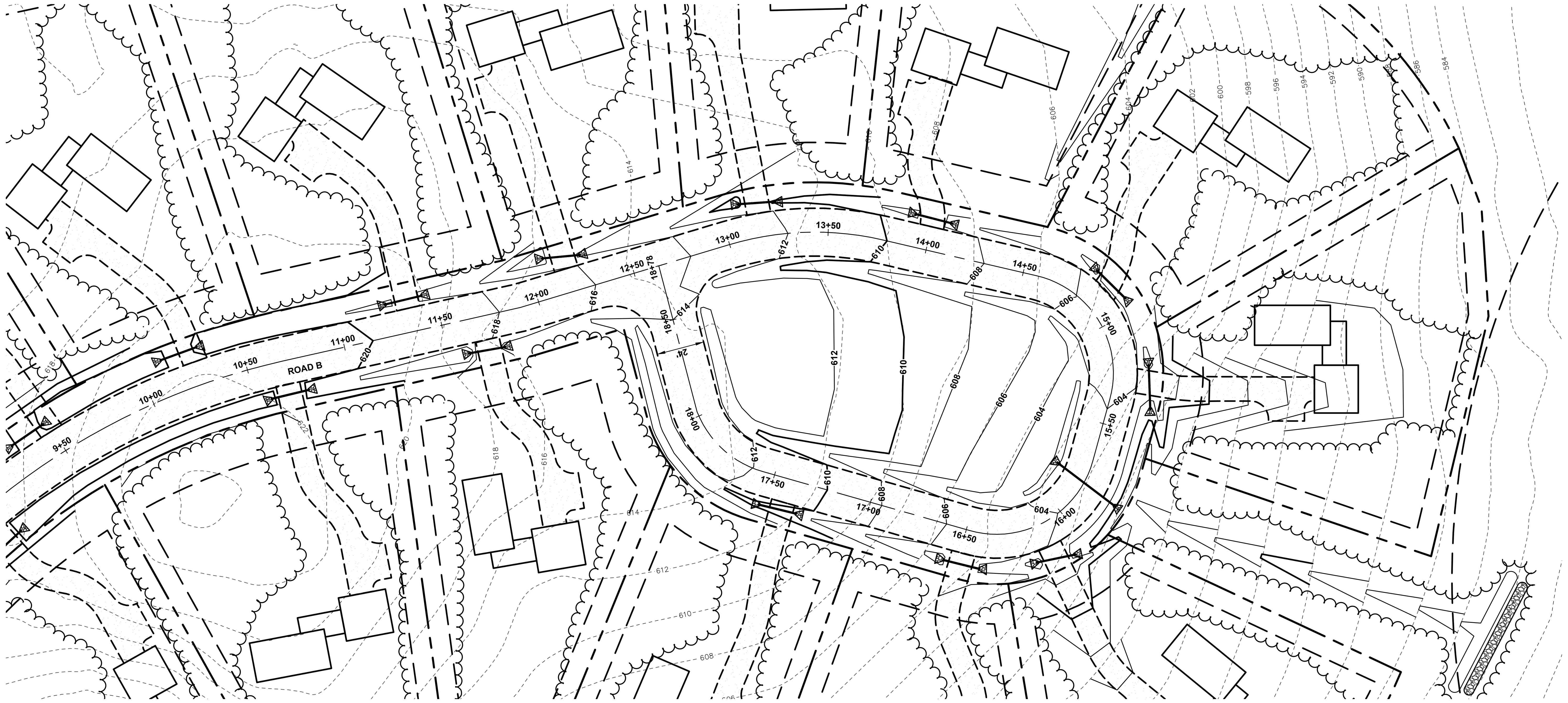
DATE	SCALE
2024.07.25	1"=40'

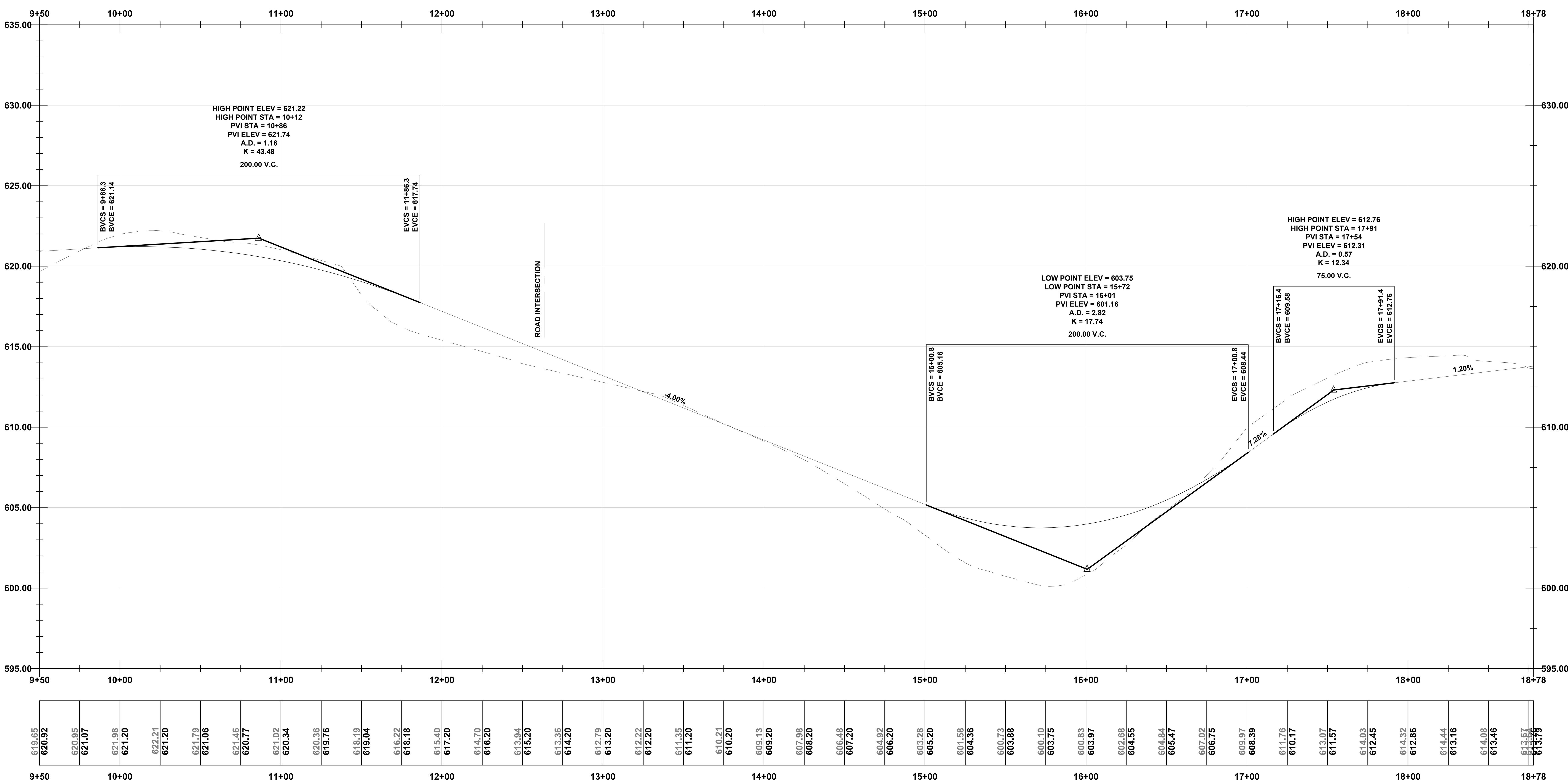
DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No.
12596.004

DRAWING No. **C204** REV.

FILE LOCATION: P:\ME\12596-HAMMOND_RIDGE_DEVELOPMENT_CORP_POLSTEIN\004-MDEP SLODA PEMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-C-PP.DWG, 2025.01.10, 4:04 PM





GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD B PLAN AND PROFILE
STA: 9+50 TO 18+78

STATE OF MAINE ★ ALFRED HASKELL, III 13314 LICENSED PROFESSIONAL ENGINEER ★ 01/10/2025

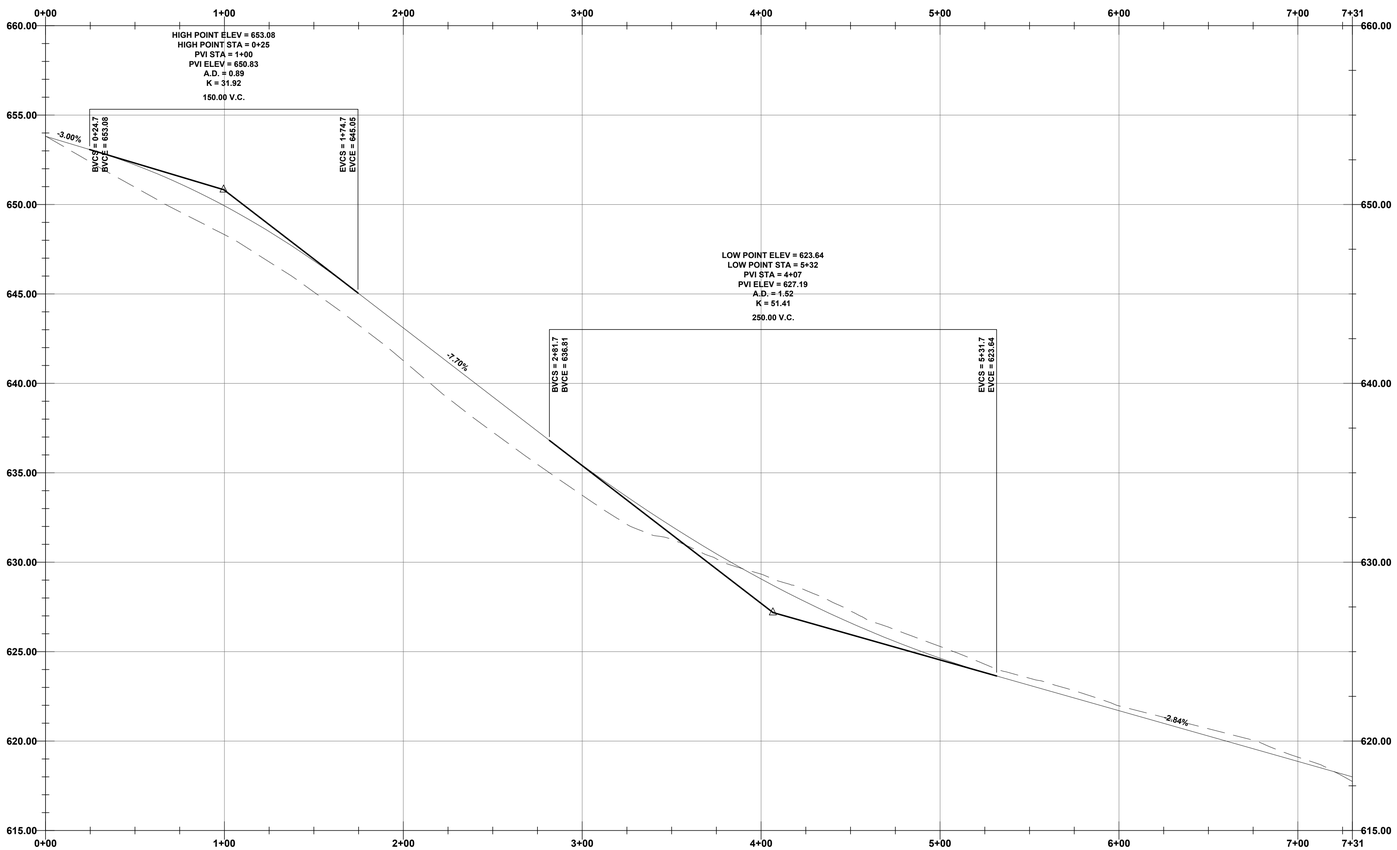
DATE	SCALE
2024.07.25	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

PROJECT No. 12596.004

DRAWING No. **C205** REV.

FILE LOCATION: P:\ME\12596-HAMMOND_RIDGE_DEVELOPMENT_CORP_POLSTEIN\004-MDEP SLODA PEMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-C-PP.DWG, 2025.01.10, 4:04 PM



GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

HALEY WARD
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One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD C PLAN AND PROFILE
STA: 0+00 TO 7+31

STATE OF MAINE
ALFRED
HASKELL JR.
12345
LICENSED
PROFESSIONAL ENGINEER
4/10/2025

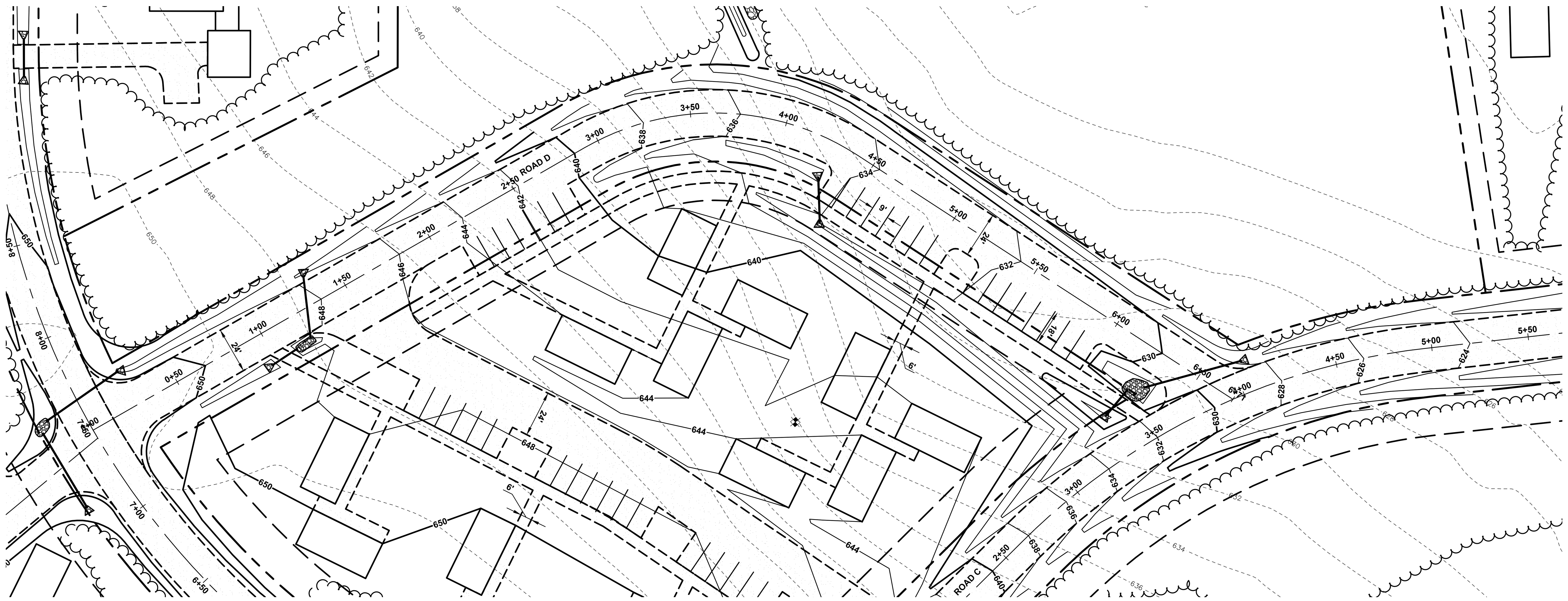
DATE	SCALE
2024.07.25	1"=40'

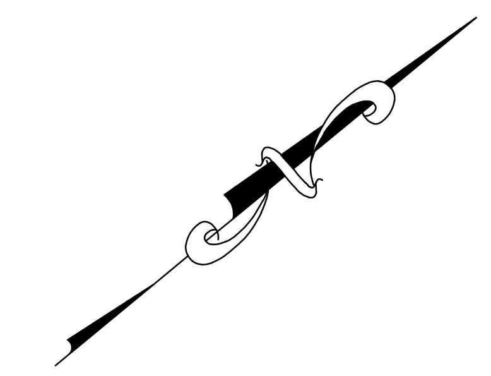
DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH

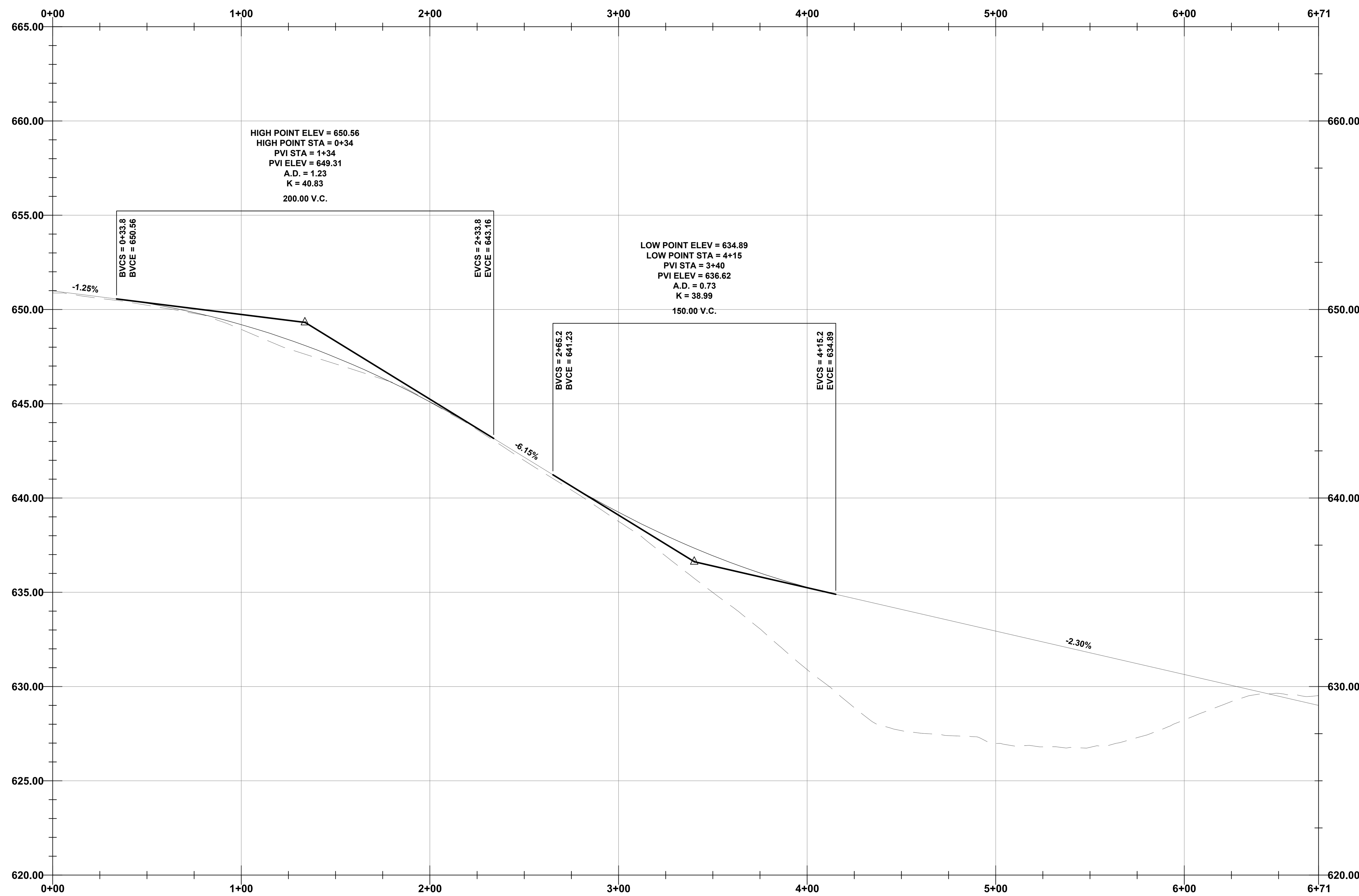
PROJECT No. 12596.004

DRAWING No. **C206** REV.

FILE LOCATION: P:\ME\12596\HAMMOND_RIDGE_DEVELOPMENT_CORP_POLITEIN\004-MDEP SLODA PERMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-C-PP DWG, 2025.01.10, 4:05 PM







650.89	650.99
650.59	650.67
650.23	650.33
649.79	649.84
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646.30	646.36
645.09	645.10
643.62	643.70
641.99	642.17
640.42	640.64
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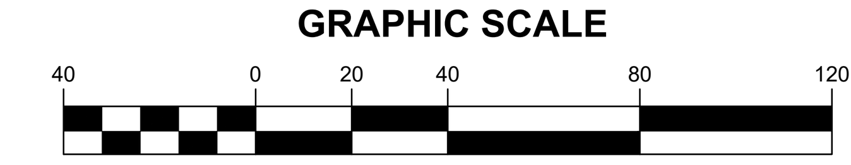
0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+71

GRAPHIC SCALE



(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

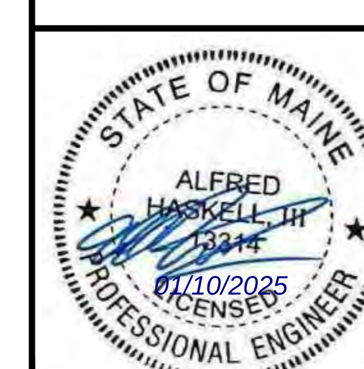
HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

ROAD PLAN AND PROFILE
STA: 0+00 TO 6+71



DATE	SCALE	
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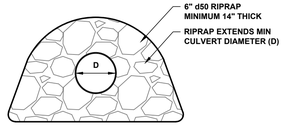
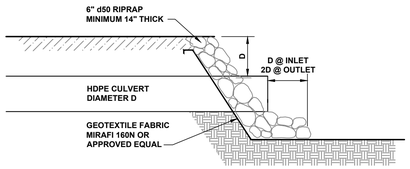
DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ALF	ACH
PROJECT No.		
12596.004		
DRAWING No.	REV.	
C207		



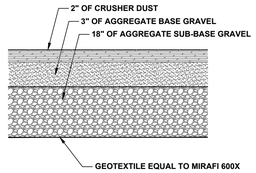
ELEVATION



PROFILE VIEW

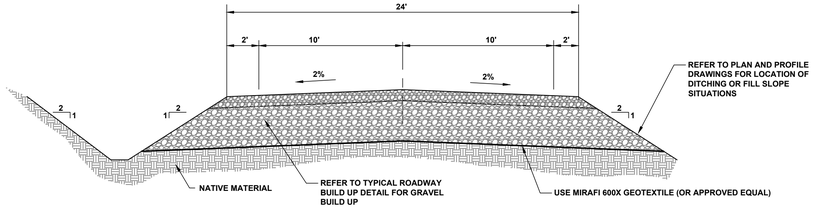
TYPICAL CULVERT INLET/OUTLET PROTECTION DETAIL

N.T.S.



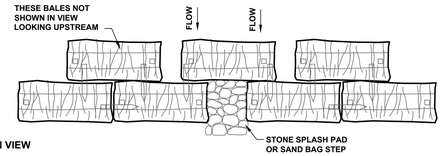
TYPICAL GRAVEL BUILDUP DETAIL

N.T.S.

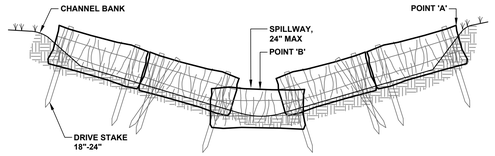


TYPICAL ROADWAY CROSS SECTION

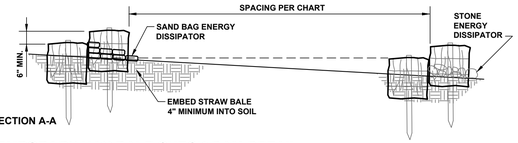
N.T.S.



PLAN VIEW



VIEW LOOKING UPSTREAM



SECTION A-A

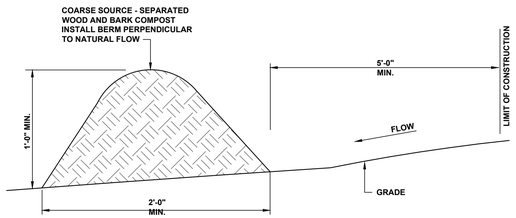
TEMPORARY HAY BALE CHECK DAM DETAIL

N.T.S.

NOTES:

1. EMBED BALES 4" INTO THE SOIL AND "KEY" BALES INTO THE CHANNEL BANKS.
2. POINT 'A' MUST BE HIGHER THAN POINT 'B' (SPILLWAY HEIGHT).
3. PLACE BALES PERPENDICULAR TO THE FLOW WITH ENDS TIGHTLY ABUTTING.
4. SPILLWAY HEIGHT SHALL NOT EXCEED 24".
5. INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.
6. DO NOT PLACE IN FLOWING STREAMS.

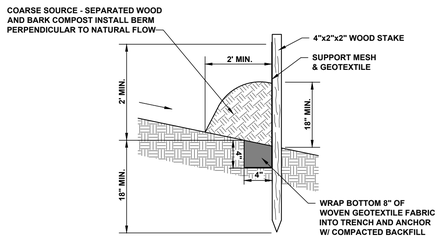
ROAD GRADE (%)	SPACING (FEET)
0-2	250
3-5	200-135
6-10	100-80
11-15	80-60
16-20	60-45
21+	40



NOTE:
THE EROSION CONTROL MIX MUST BE WELL-GRADED WITH AN ORGANIC COMPONENT THAT IS BETWEEN 50 AND 100% OF DRY WEIGHT, AND THAT IS COMPOSED OF FIBROUS AND ELONGATED FRAGMENTS. THE MINERAL PORTION OF THE MIX SHOULD BE NATURALLY INCLUDED IN THE PRODUCT WITH NO LARGER ROCKS (>4") OR LARGE AMOUNTS OF FINES (SILTS AND CLAYS). IN STUMP GRINDING, THE MINERAL SOIL ORIGINATES FROM THE ROOT BALL AND SHOULD NOT BE REMOVED BEFORE GRINDING. THE MIX SHOULD BE FREE OF REFUSE, MATERIAL TOXIC TO PLANT GROWTH OR UNSUITABLE MATERIAL (BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS).

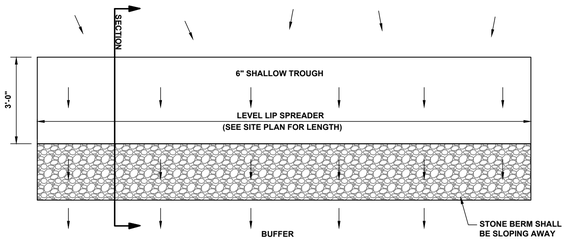
EROSION CONTROL MIX BERM DETAIL

N.T.S. (MAY BE USED AS AN ALTERNATE TO SILT FENCE)

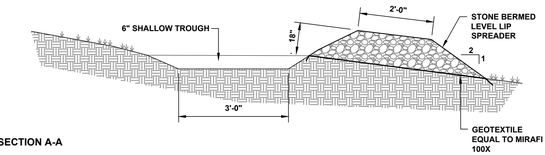


SILT FENCE & EROSION CONTROL MIX BERM DETAIL

N.T.S.



PLAN VIEW



SECTION A-A

TYPICAL STONE BERM LEVEL SPREADER DETAIL

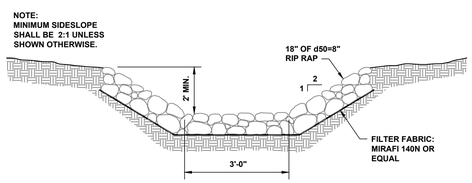
N.T.S.

NOTES

1. INSPECT AT LEAST ONCE ANNUALLY FOR ACCUMULATION OF SEDIMENT AND DEBRIS AND FOR SIGNS OF EROSION WITHIN APPROACH CHANNEL, SPREADER CHANNEL, OR DOWN-SLOPE OF SPREADER.
2. REMOVE DEBRIS WHENEVER OBSERVED DURING INSPECTION.
3. REMOVE SEDIMENT WHEN ACCUMULATION EXCEEDS 25% OF SPREADER CHANNEL DEPTH.
4. MOW AS REQUIRED BY LANDSCAPING DESIGN, AT A MINIMUM, MOW ANNUALLY TO CONTROL WOODY VEGETATION WITHIN THE SPREADER.
5. SNOW SHOULD NOT BE STORED WITHIN OR DOWN-SLOPE OF THE LEVEL SPREADER OR ITS APPROACH CHANNEL.
6. REPAIR ANY EROSION AND RE-GRADE OR REPLACE STONE BERM MATERIAL, AS WARRANTED BY INSPECTION.
7. RECONSTRUCT THE SPREADER IF DOWN-SLOPE CHANNELIZATION INDICATES THAT THE SPREADER IS NOT LEVEL OR THAT DISCHARGE HAS BECOME CONCENTRATED, AND CORRECTIONS CANNOT BE MADE THROUGH MINOR RE-GRADING.
8. IT IS CRITICAL TO INSTALL LEVEL SPREADERS AT ZERO PERCENT GRADE ALONG THE LENGTH OF THE DISCHARGE LIP. FLOW MUST DISCHARGE UNIFORMLY ALONG THE LENGTH OF THE SPREADER.
9. THE RECEIVING AREA MUST BE STABLE PRIOR TO CONSTRUCTION OF THE LEVEL SPREADER.

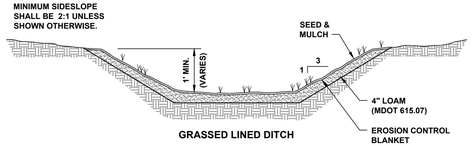
GRADATION OF STONE FOR BERM	
SIEVE	% BY WEIGHT PASSING SIEVE
12"	100%
6"	84% - 100%
3"	68% - 83%
1"	42% - 55%
NO. 4	8% - 12%

NOTE:
MINIMUM SIDESLOPE
SHALL BE 2:1 UNLESS
SHOWN OTHERWISE.



RIPRAP LINED DITCH

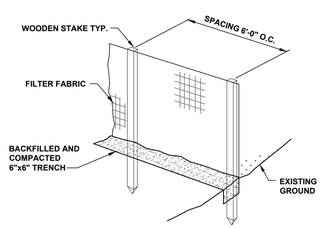
NOTE:
MINIMUM SIDESLOPE
SHALL BE 2:1 UNLESS
SHOWN OTHERWISE.



GRASSED LINED DITCH

TYPICAL DITCH DETAILS

N.T.S.



NOTES:

1. KEY FABRIC IN A 6"x6" TRENCH W/BACKFILL AND COMPACT.
2. SILT FENCE SHALL BE A 3' FENCE WITH A MINIMUM GRAB STRENGTH OF 120 LBS.

SILT FENCE DETAIL

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

SITE DETAILS

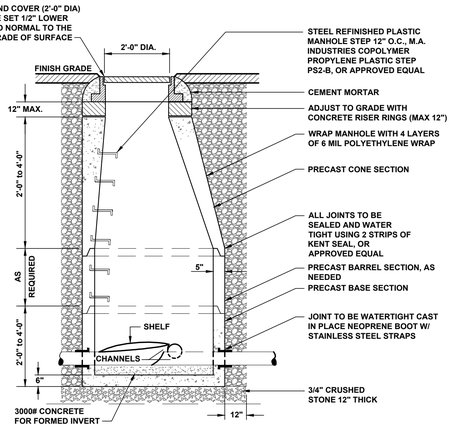
STATE OF MAINE
ALFRED HASKELL III
2934
06/10/2025
LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
2024.09.23	NTS

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	WAB	ACH

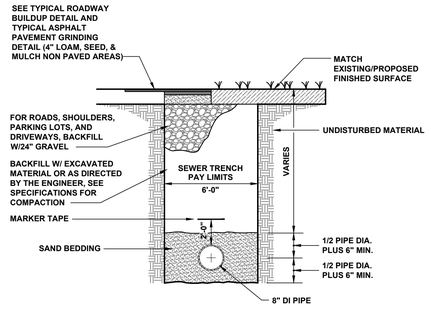
PROJECT No. 12596.004

DRAWING No. **C501** REV.



TYPICAL MANHOLE DETAIL

N.T.S.

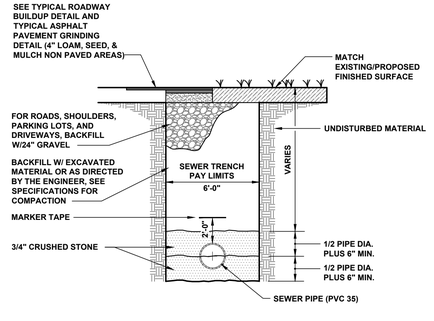


NOTE:

1. MATCH EXISTING SURFACE FINISH, EXCEPT WHERE NOTED. IN LAWN AREAS INSTALL 4" OF LOAM AND SEED AND MULCH.

TYPICAL FORCE MAIN TRENCH DETAIL

N.T.S.

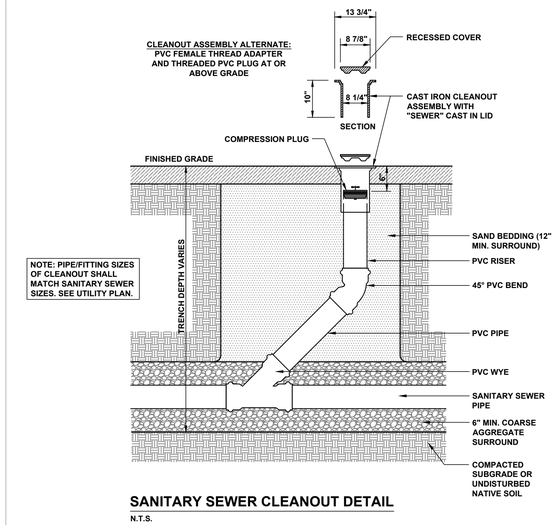


NOTE:

1. MATCH EXISTING SURFACE FINISH, EXCEPT WHERE NOTED. IN LAWN AREAS INSTALL 4" OF LOAM AND SEED AND MULCH.

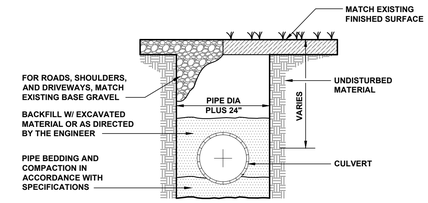
TYPICAL SEWER TRENCH DETAIL

N.T.S.



SANITARY SEWER CLEANOUT DETAIL

N.T.S.

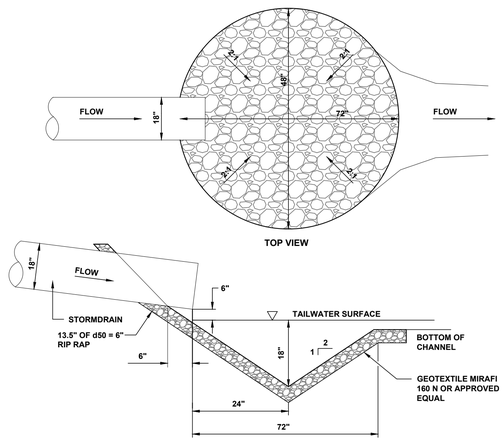


NOTE:

1. PAYMENT LIMITS SHALL BE 6' WIDE (3' EACH SIDE OF CULVERT)

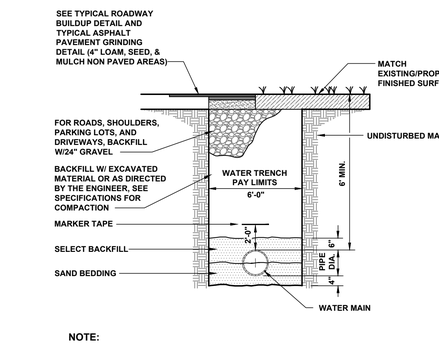
TYPICAL CULVERT TRENCH DETAIL

N.T.S.



TYPICAL PLUNGE POOL DETAIL

N.T.S.

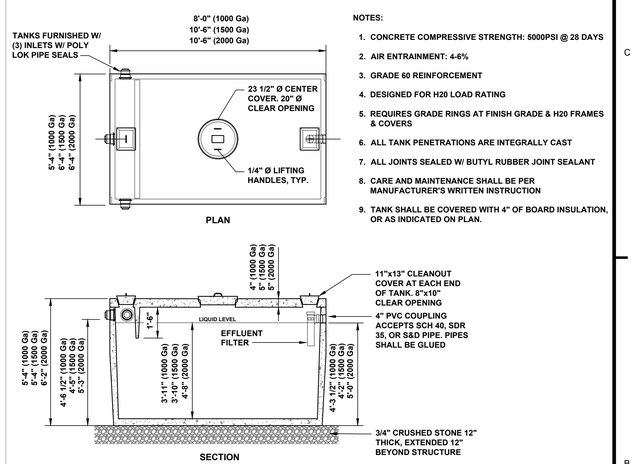


NOTE:

1. MATCH EXISTING SURFACE FINISH, EXCEPT WHERE NOTED. IN LAWN AREAS INSTALL 4" OF LOAM AND SEED AND MULCH.

TYPICAL WATER MAIN TRENCH DETAIL

N.T.S.

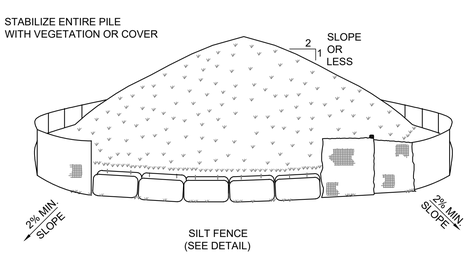


NOTES:

1. CONCRETE COMPRESSIVE STRENGTH: 5000PSI @ 28 DAYS
2. AIR ENTRAINMENT: 4-6%
3. GRADE 60 REINFORCEMENT
4. DESIGNED FOR H20 LOAD RATING
5. REQUIRES GRADE RINGS AT FINISH GRADE & H20 FRAMES & COVERS
6. ALL TANK PENETRATIONS ARE INTEGRALLY CAST
7. ALL JOINTS SEALED W/ BUTYL RUBBER JOINT SEALANT
8. CARE AND MAINTENANCE SHALL BE PER MANUFACTURER'S WRITTEN INSTRUCTION
9. TANK SHALL BE COVERED WITH 4" OF BOARD INSULATION, OR AS INDICATED ON PLAN.

TYPICAL SEPTIC TANK DETAILS

N.T.S.

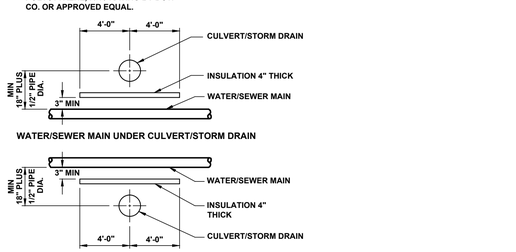


INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED W/ EITHER SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SILT FENCE DETAIL ON THIS SHEET
5. TEMPORARILY STABILIZE AS NOTED IN SPECIFICATIONS

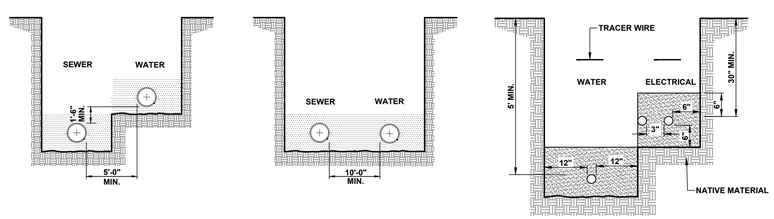
TEMPORARY STOCKPILE AREA

N.T.S.



TYPICAL PIPE CROSSING INSULATION DETAIL

N.T.S.



PARALLEL INSTALLATION OF WATER MAINS AND GRAVITY SEWER MAINS:

1. NORMAL CONDITIONS – WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY SANITARY SEWER, OR SEWER MANHOLE, WHENEVER POSSIBLE; THE DISTANCE SHALL BE MEASURED EDGE-TO-EDGE (PIPE WALL TO PIPE WALL).
2. UNUSUAL CONDITIONS – WHEN LOCAL CONDITIONS (SUCH AS LEDGE, BRIDGES, UTILITY CONGESTION, ETC.) PREVENT A HORIZONTAL SEPARATION OF 10 FEET, A WATER MAIN MAY BE LAID CLOSER TO A SANITARY SEWER PROVIDED THAT:

a. THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER IN A SEPARATE TRENCH OR UNDISTURBED EARTH SHELF AND A MINIMUM OF 5 FEET EDGE-TO-EDGE (PIPE WALL TO PIPE WALL) HORIZONTALLY IS PROVIDED.

b. WHERE THIS VERTICAL SEPARATION CANNOT BE OBTAINED, THE SEWER SHALL BE CONSTRUCTED OF MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS-OF-CONSTRUCTION AND SHALL BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING.

TYPICAL UTILITY SEPARATION DETAILS

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

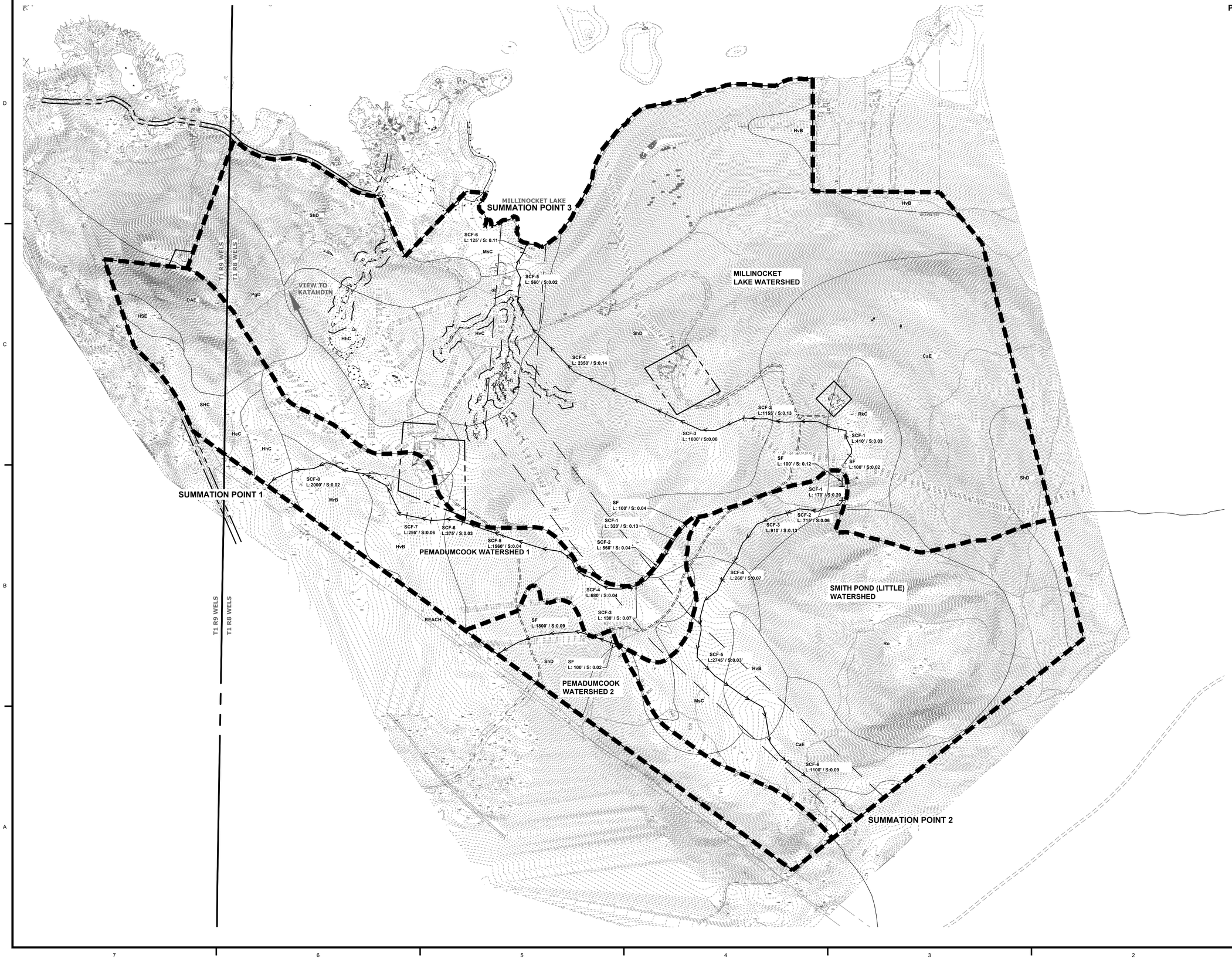
HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

SITE DETAILS

STATE OF MAINE
ALFRED HASKELL JR
12345
01/10/2025
LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
2024.09.23	NTS
DRAWN BY: WAB	DESIGNED BY: WAB	CHECKED BY: ACH
PROJECT No.	12596.004
DRAWING No.	REV.
C502	



REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

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Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

PRE DEVELOPMENT HYDROLOGY PLAN

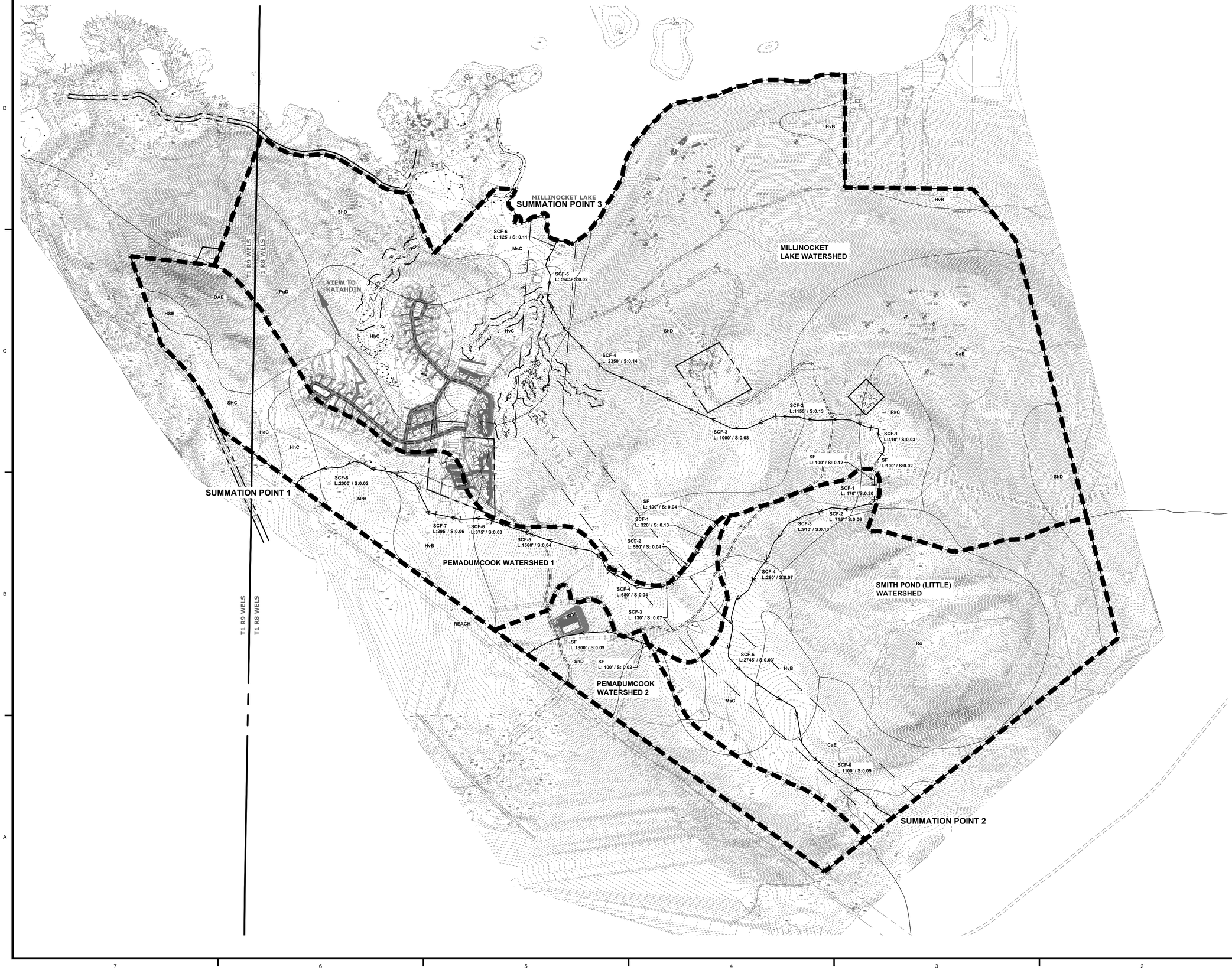
STATE OF MAINE
ALFRED HASKELL JR
22414
01/10/2025
LICENSED
PROFESSIONAL ENGINEER

DATE	SCALE
2024.09.03	1"=500'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ECM	ACH

PROJECT No. 12596.004

DRAWING No. **C701** REV.



POST LEGEND:

	PROPERTY LINE
	WATERSHED BOUNDARY LINE
1	WATERSHED DESIGNATION
	TIME OF CONCENTRATION FLOW PATH
50' SF	FLOW PATH DESCRIPTION
SF	SHEET FLOW
SC	SHALLOW CONCENTRATED FLOW
CF	CHANNEL FLOW
PF	PIPE FLOW
	STORMWATER FLOW DIRECTION

GRAPHIC SCALE

500 0 250 500 1000 1500

(IN FEET)
1 inch = 500 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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ENGINEERING | ENVIRONMENTAL | SURVEYING
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Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

POST DEVELOPMENT HYDROLOGY PLAN

STATE OF MAINE
ALFRED HASKELL III
12596
LICENSED
PROFESSIONAL ENGINEER
07/10/2025

DATE	SCALE
2024.09.03	1"=500'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ECM	ACH

PROJECT No. 12596.004

DRAWING No. **C702** REV.

MILLINOCKET LAKE

VIEW TO KATAHDIN

T1 R9 WELS

T1 R8 WELS

T1 R9 WELS

T1 R8 WELS

LEGEND:

- #1 - ROADSIDE BUFFER OR AREA ADJACENT TO SMALL IMPERVIOUS AREA / TREATMENT AREA
- BUFFER 1 / TREATMENT AREA
- BUFFER 2 / TREATMENT AREA
- BUFFER 3 / TREATMENT AREA
- BUFFER 4 / TREATMENT AREA
- BUFFER 5 / TREATMENT AREA
- BUFFER 6 / TREATMENT AREA
- BUFFER 7 / TREATMENT AREA
- BUFFER 8 / TREATMENT AREA
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- BUFFER 12 / TREATMENT AREA
- BUFFER 13 / TREATMENT AREA
- BUFFER 14 / TREATMENT AREA
- BUFFER 15 / TREATMENT AREA
- BUFFER 16 / TREATMENT AREA
- BUFFER 17 / TREATMENT AREA
- BUFFER 18 / TREATMENT AREA

GRAPHIC SCALE

500 0 250 500 1000 1500

(IN FEET)
1 inch = 500 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

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WWW.HALEYWARD.COM
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

OVERALL STORMWATER TREATMENT PLAN

STATE OF MAINE
ALFRED HASKELL III
GREENE
6/10/2025
PROFESSIONAL ENGINEER

DATE	SCALE
2024.09.03	1"=500'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ECM	ACH

PROJECT No. 12596.004

DRAWING No. **C703** REV.

FILE LOCATION: P:\ME\12596-HAMMOND_RIDGE_DEVELOPMENT_CORP_POLSTEIN\004-MDEP SLODA PERMITTING-ACH\02-CAD_FILES\CIVIL\12596.004-CHY DWG, 2025.01.10, 4:48 PM

LEGEND:

- #1 - ROADSIDE BUFFER OR AREA ADJACENT TO SMALL IMPERVIOUS AREA / TREATMENT AREA
- BUFFER 1 / TREATMENT AREA
- BUFFER 2 / TREATMENT AREA
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- BUFFER 17 / TREATMENT AREA
- BUFFER 18 / TREATMENT AREA
- BUFFER 19 / TREATMENT AREA
- BUFFER 20 / TREATMENT AREA

GRAPHIC SCALE

100 0 50 100 200 300

(IN FEET)
1 inch = 100 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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WWW.HALEYWARD.COM
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

STORMWATER TREATMENT PLAN

STATE OF MAINE
ALFRED C. HASKELL, JR.
12996
10/10/2025
LICENSED
PROFESSIONAL ENGINEER

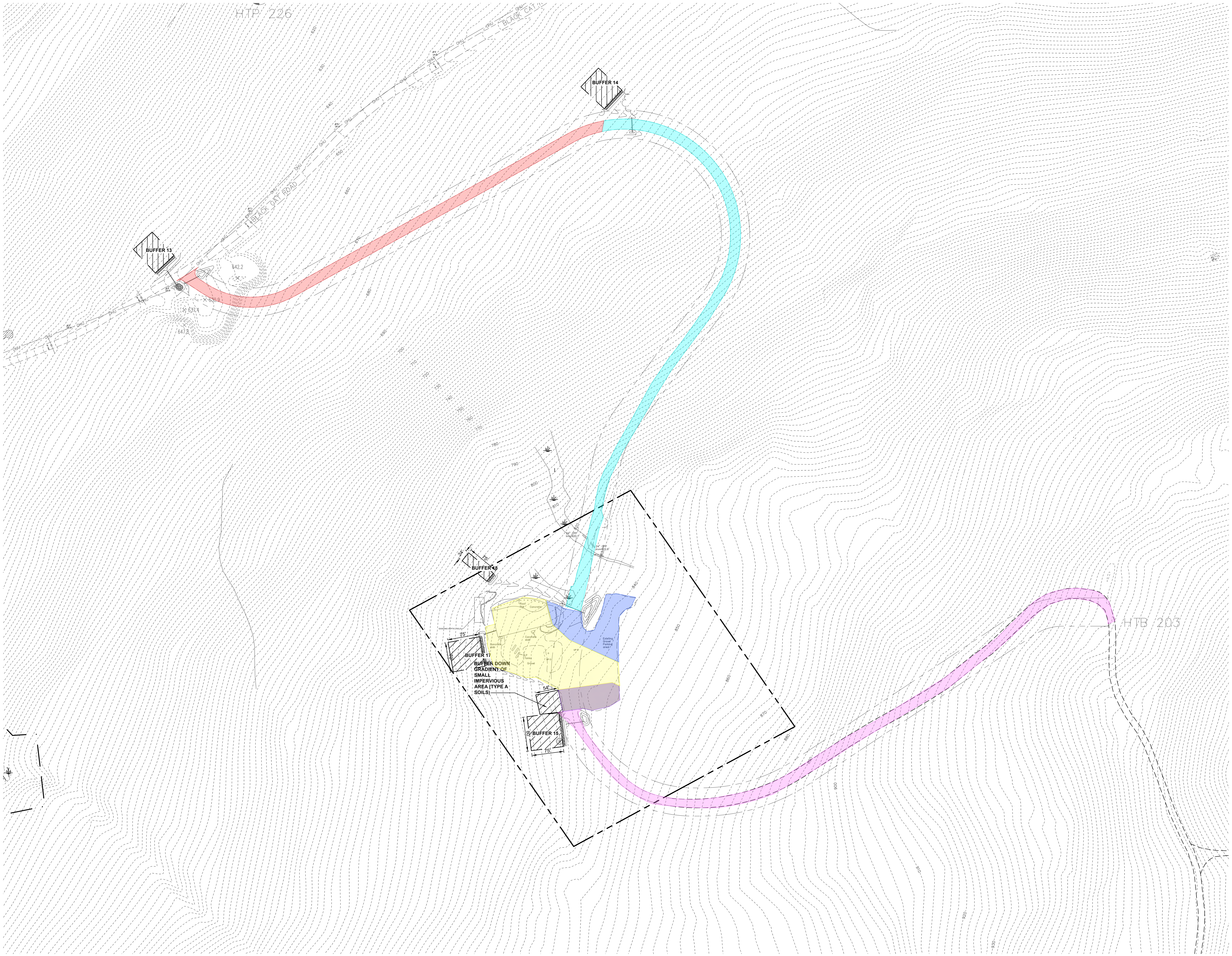
DATE	SCALE
2024.09.03	1"=100'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ECM	ACH

PROJECT No. 12596.004

DRAWING No. **C704** REV.

FILE LOCATION: P:\ME\12596\HAMMOND_RIDGE_DEVELOPMENT_CORP_POLISTEN\004-MDEP SLODA PERMITTING\ACAD\02-CAD_FILES\CIVIL\12596.004-CI-HY.DWG, 2025.01.10, 4:49 PM



LEGEND:

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- BUFFER 19 / TREATMENT AREA
- BUFFER 20 / TREATMENT AREA

GRAPHIC SCALE

100 0 50 100 200 300

(IN FEET)
1 inch = 100 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

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Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

STORMWATER TREATMENT PLAN

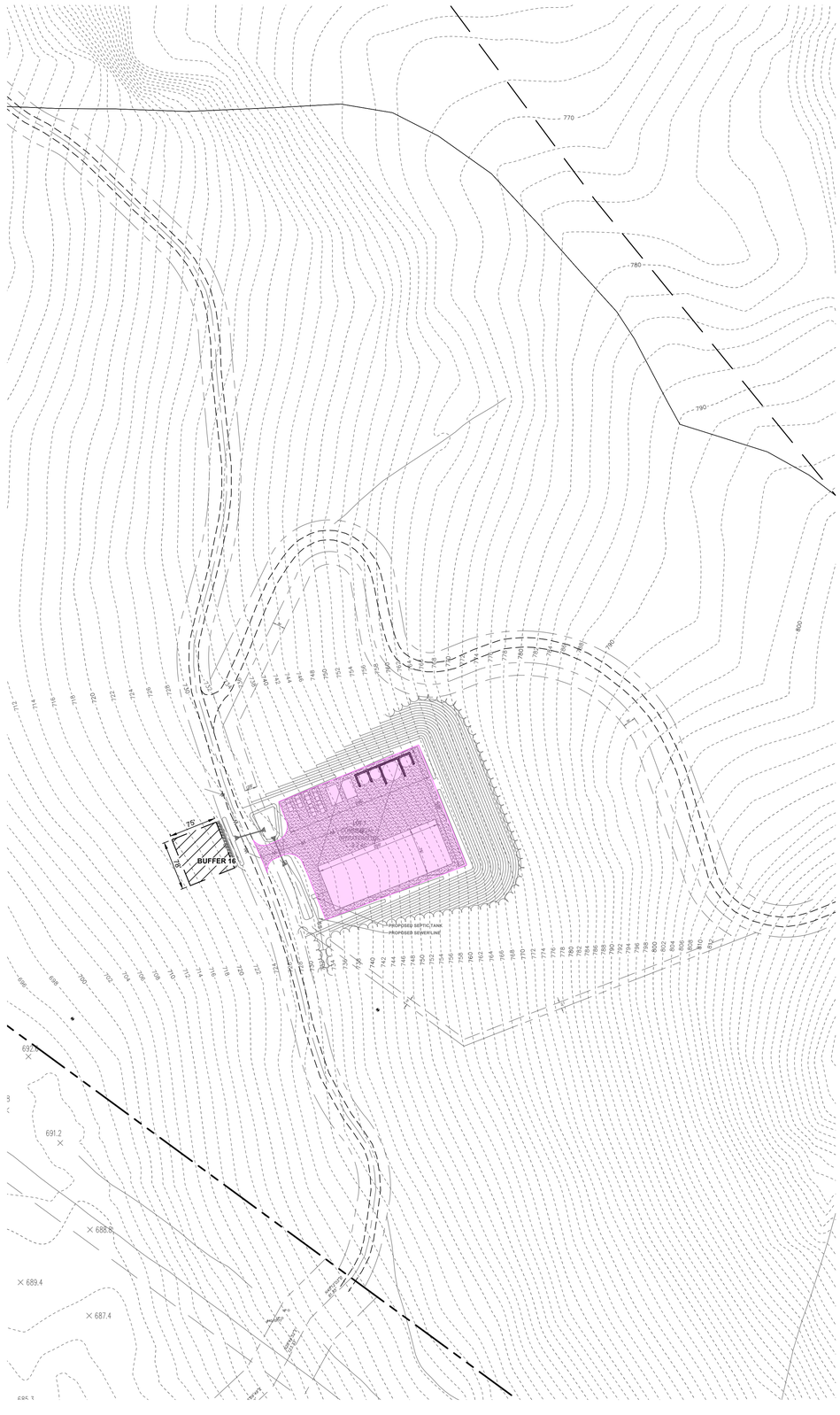
STATE OF MAINE
ALFRED HASKELL, III
13314
01/10/2025
LICENSED
PROFESSIONAL ENGINEER

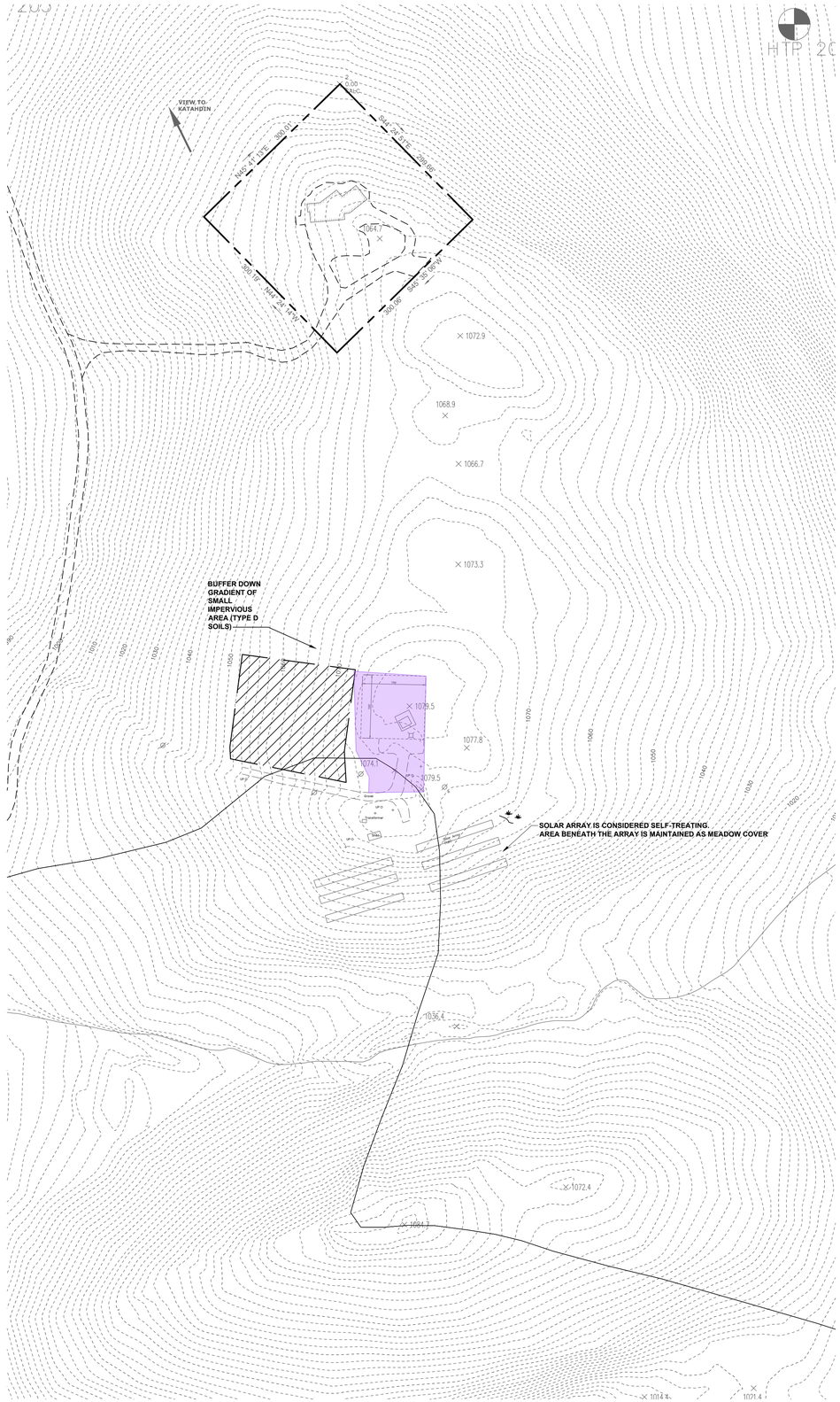
DATE	SCALE
2024.09.03	1"=100'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ECM	ACH

PROJECT No.
12596.004

DRAWING No. **C705** REV.





LEGEND:

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- BUFFER 18 / TREATMENT AREA
- BUFFER 19 / TREATMENT AREA
- BUFFER 20 / TREATMENT AREA

GRAPHIC SCALE

100 0 50 100 200 300

(IN FEET)
1 inch = 100 ft.

REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

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Bangor, Maine 04401
207.989.4824

PROJECT

HAMMOND RIDGE DEVELOPMENT
T1 R8 WELS, MAINE

TITLE

STORMWATER TREATMENT PLAN

STATE OF MAINE
ALFRED HASKELL III
12444
LICENSED
PROFESSIONAL ENGINEER
6/10/2025

DATE	SCALE
2024.09.03	1"=100'

DRAWN BY	DESIGNED BY	CHECKED BY
WAB	ECM	ACH

PROJECT No. 12596.004

DRAWING No. **C706** REV.