



May 18, 2026

Stephen Puleo, Planning Director
Town of Windham
8 School Road
Windham, ME 04062

**Re: Sketch Major Subdivision Application
Highland Cliff Estates Subdivision
Highland Cliff Estates, LLC – Applicant/Owner**

Dear Steve:

On behalf of Highland Cliff Estates, LLC we have prepared the enclosed sketch subdivision plan application with supporting materials for Staff and Planning Board review of a proposed 27-lot residential subdivision of single-family house lots. The property is being divided from 180 Highland Cliff Road, which is depicted on the Town of Windham tax map 3 as Lot 49-A. The property is located in the Farm zone and the project will be designed utilizing the standards for a Conservation Subdivision. The existing farmhouse and barn will be separated on a 4-acre parcel, and the remaining 46 acres will be developed with a 2,700 foot roadway providing access to 27 residential lots each containing approximately 0.68 acres.

The project is intended to be developed in two phases, with the first phase consisting of approximately 1,500 feet of road that will provide access to 12 house lots. The second phase will extend the road an additional 1,200 feet and will provide access to 15 additional house lots. The roadway is currently proposed with a 26-foot wide paved travel surface and is being designed to Minor Local Street standards to be potentially offered for public acceptance. We will be requesting Preliminary Subdivision Approval of the entire 27-lot development and will then request final approval of the two project phases separately as they are built out. The development of the first phase of the project will require a Stormwater Permit from the Maine Department of Environmental Protection. At this time we do not anticipate that the project will have any direct impact to wetlands and the site does not contain any vernal pools.

Soils on the site are generally suitable for the proposed development as indicated on the Medium Intensity Soil Maps for Cumberland County (see attached). Each new residential lot will require an on-site well and on-site wastewater disposal system. As part of our project application we will conduct test pits on each lot to demonstrate septic system suitability and perform a hydrogeologic assessment of the nitrate plumes that will be generated by the on-site wastewater disposal fields. Each of the homes in the development will include the installation of a sprinkler system, and all electrical service will be installed underground. The 2,700 feet of roadway includes three hammerhead turnaround areas that are generally evenly spaced over the roadway.

We have requested a waiver from the submission requirements for the submission of a High Intensity Soil Survey and for the submission of a Traffic Impact Analysis, and a waiver from the Subdivision Performance Standards for the minimum amount of open space required for a Conservation Subdivision. If the road is intended to be offered for public acceptance, we will also need to request a waiver from the requirement to build a cul-de-sac at the end of the roadway. Justification for each waiver request is included on the waiver request form. We do not anticipate the need to perform traffic studies, utility studies or market studies.

Upon your review of this information, please let us know if you have any questions or require any additional information.

Sincerely,

DM ROMA CONSULTING ENGINEERS

Dustin Roma

Dustin M. Roma, P.E.
President



SKETCH PLAN REVIEW – MAJOR\MINOR SUBDIVISION APPLICATION

FEES FOR SKETCH PLAN REVIEW	APPLICATION FEE: <input checked="" type="checkbox"/> \$200.00 REVIEW ESCROW: <input type="checkbox"/> \$300.00 - MINOR <input checked="" type="checkbox"/> \$400.00 - MAJOR	AMOUNT PAID: \$ <u>600.00</u> DATE: _____	<i>Office Use:</i> _____ <i>Office Stamp:</i> _____
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PROPERTY DESCRIPTION	Parcel ID	Map #	3	Lot(s) #	49-A	Zoning District(s)	FARM	Total Land Area SF	2,003,092 SF 45.98 AC
	Physical Address	180 Highland Cliff Road				Watershed:	Presumpscot River		

PROPERTY OWNER'S INFORMATION	Name	Highland Cliff Estates, LLC				Mailing Address	391 Roosevelt Trail Windham, ME 04062			
	Phone	(207) 415 - 1457								
	Fax or Cell									
	Email	mbchmaine@gmail.com								

APPLICANT'S INFORMATION (IF DIFFERENT FROM OWNER)	Name	Same as Owner				Name of Business				
	Phone					Mailing Address				
	Fax or Cell									
	Email									

APPLICANT'S AGENT INFORMATION	Name	Dustin Roma				Name of Business	DM Roma Consulting Engineers			
	Phone	(207) 591 - 5055				Mailing Address	PO Box 1116 Windham, ME 04062			
	Fax or Cell	(207) 310 - 0506								
	Email	dustin@dmroma.com								

PROJECT INFORMATION		<p>Existing Land Use (Use extra paper, if necessary):</p> <p style="padding-left: 40px;">Vacant Land being split off from existing single-family residential.</p>								
		<p>Provide a narrative description of the Proposed Project (Use extra paper, if necessary):</p> <p style="padding-left: 40px;">Develop a Conservation Subdivision in two phases for a total of 27 lots. The first phase will construct 1,500 feet of road to serve 12 new residential lots. Second phase will extend the road an additional 1,200 feet to serve 15 additional lots.</p>								
		<p>Provide a narrative description of construction constraints (wetlands, shoreland zone, flood plain, non- conformance, etc. Use extra paper, if necessary):</p> <p style="padding-left: 40px;">Deed restriction on placement of new homes/lots Wetlands are at the rear of the property Electrical utility line crosses rear of property</p>								



SKETCH PLAN MAJOR/MINOR SUBDIVISION APPLICATION REQUIREMENTS

Section 120-910 of the Land Use Ordinance

The submission shall contain, five (5) copies of following information, including full plan sets. Along with one (1) electronic version of the entire submission unless a waiver of a submission requirement is granted.

The Sketch Plan document/map:

- A) Plan size: 24" X 36"
B) Plan Scale: No greater 1":100'
C) Title block: Applicant's name and address
• Name of preparer of plans with professional information
• Parcel's tax map identification (map and lot) and street address, if available

- Complete application submission deadline: three (3) weeks prior to the desired Planning Board or Staff Review Committee meeting.
- Five copies of application and plans
- Application Payment and Review Escrow
• Pre-submission meeting with the Town staff is required.
• Contact information:
Windham Planning Department (207) 894-5960, ext. 2
Steve Puleo, Town Planner sipuleo@windhammaine.us
Amanda Lessard, Planning Director allessard@windhammaine.us

APPLICANT/PLANNER'S CHECKLIST FOR SKETCH PLAN REVIEW REQUIREMENTS

SUBMITTALS THAT THE TOWN PLANNER DEEMS INCOMPLETE IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.

The following checklist includes items generally required for development by the Windham's LAND USE ORDINANCE, Section 120-910. Due to projects specifics, are required to provide a complete and accurate set of plans, reports and supporting documentation.

IT IS THE RESPONSIBILITY OF THE APPLICANT TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.

NOTE TO APPLICANT: PRIOR TO THE SITE WALK, TEMPORARY MARKERS MUST BE ADEQUATELY PLACED THAT ENABLE THE PLANNING BOARD TO READILY LOCATE AND APPRAISE THE LAYOUT OF DEVELOPMENT (SEE RULES OF PLANNING BOARD FOR MORE SPECIFICS. PER SECTIONS 120-906C(3) and 120-907A(2)(b)(2)).

Table with columns: Submission Requirements, Applicant, Staff, Applicant, Staff. Rows include: a) Completed Sketch Plan Application form, b) Proposed Project Conditions (Condition of the site, Proposed use, Constraints/opportunities of site), c) Name, address, phone for record owner and applicant, d) Names and addresses of all consultants working on the project, e) Evidence of right, title, or interest in the property, f) Evidence of payment of Sketch Plan fees and escrow deposit, g) Any anticipated waiver requests, h) Copy of portion of the USGS topographic map of the area, i) An existing resources inventory and site analysis sketch plan for conservation subdivisions as described in § 120-911K(3), j) Copy of that portion of the Cumberland County Medium Intensity Soil Survey covering the proposed subdivision, showing the boundaries of the proposed subdivision Submit initialed form regarding additional fees, from applicant intro packet, Plan Requirements (1-7), PDF Electronic Submission.

The undersigned hereby makes application to the Town of Windham for approval of the proposed project and declares the foregoing to be true and accurate to the best of his/her knowledge.

Dustin Roma

5-18-26

Dustin Roma - Authorized Agent

APPLICANT OR AGENT'S SIGNATURE

DATE

PLEASE TYPE OR PRINT NAME

Highland Cliff Estates, LLC
391 Roosevelt Trail
Windham, Maine 04062

May 18, 2026

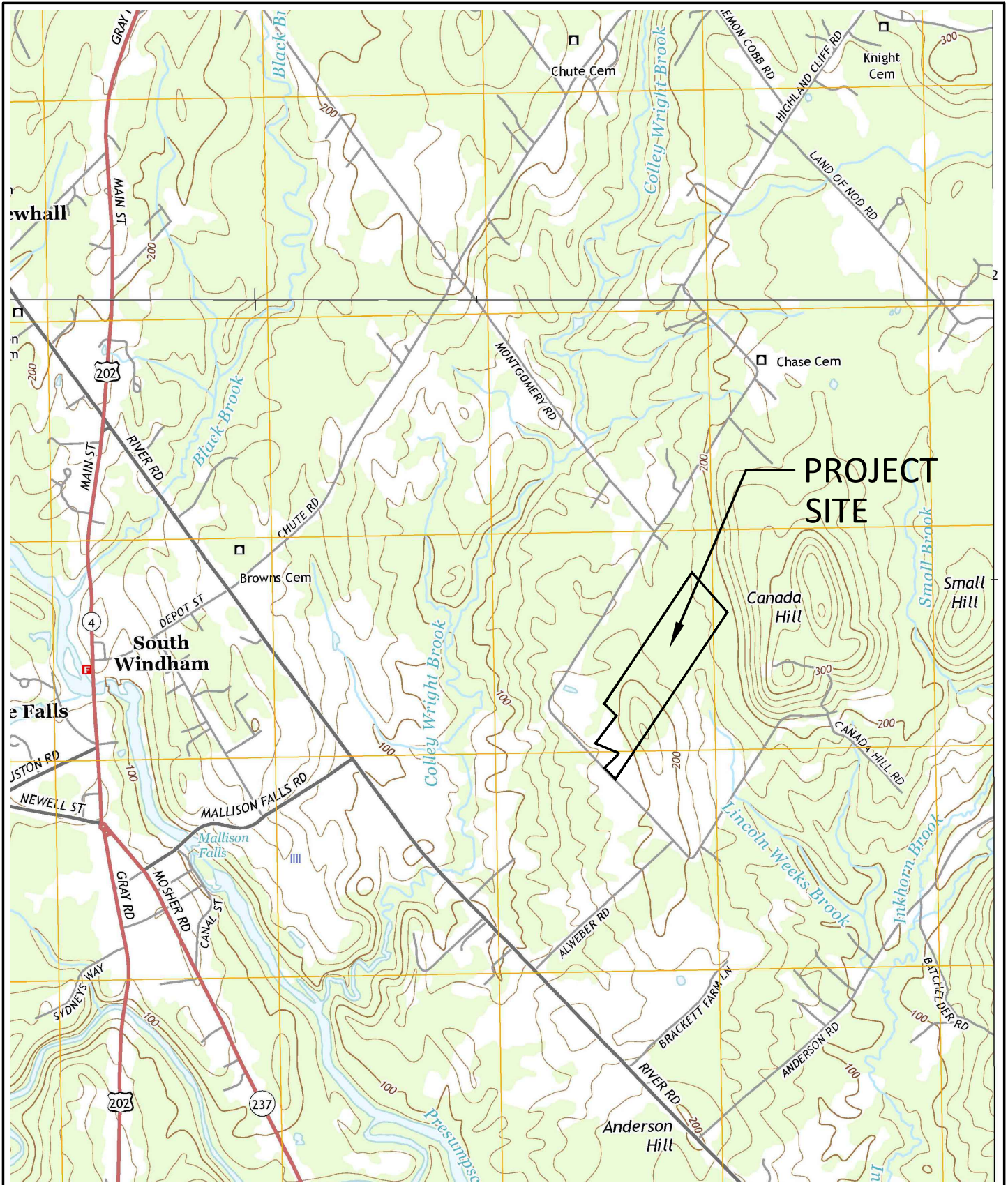
**Re: Agent Authorization
Residential Development on Highland Cliff Road
Windham, Maine**

I am an authorized member of Highland Cliff Estates, LLC, the owner of property located at 180 Highland Cliff Road in Windham, Maine and identified on the Town of Windham Tax Map 3, Lot 49-A. I have retained the services of Dustin Roma and DM Roma Consulting Engineers to act as our agent to apply for land use permits associated with the development of the property.

Sincerely,

Garrett McDonnell
Member, Highland Cliff Estates, LLC

A handwritten signature in black ink, appearing to read "G. McDonnell", written in a cursive style.



SITE LOCATION MAP

180 HIGHLAND CLIFF ROAD
WINDHAM, MAINE

FOR RECORD OWNER:
MCDONNELL BROTHERS CUSTOM BUILDERS, LLC.
391 ROOSEVELT TRAIL
WINDHAM, MAINE, 04062

SCALE: 1"=2000'
DATE: 12-15-2025
JOB NUMBER: 25073

DM ROMA

CONSULTING ENGINEERS

P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

DLN # 3502016

DEED OF SALE BY PERSONAL REPRESENTATIVE

(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS that I, **SANDRA J. AVERY**, of Gorham, Maine, duly appointed and acting Personal Representative of the **ESTATE OF SYLVIA M. JOHNSON**, deceased on September 5, 2025, (Docket #2025-1474) (testate) as shown by probate records of Cumberland County, Maine, an Abstract of which is recorded in the Cumberland County Registry of Deeds in Book 41773, Page 129, by the power conferred by law, and every other power, and having not given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale such notice not being required under the terms of the Last Will and Testament of Sylvia M. Johnson, pursuant to the authority contained in Title 18-C Maine Revised Statutes, and every other power, in her capacity as Personal Representative, as aforesaid, for consideration paid, **GRANT** unto **HIGHLAND CLIFF ESTATES LLC**, a Maine limited liability company with a mailing address of 391 Roosevelt Trail, Windham, ME 04062, the real property, together with the improvements thereon, situated in the Town of Windham, County of Cumberland and State of Maine more particularly described in Exhibit A attached hereto and made a part hereof.

Meaning and intending to convey, and hereby conveying, the same premises conveyed to Walter R. Johnson and Sylvia M. Johnson by Merton R. Johnson and Catherine E. Johnson by warranty deed dated September 30, 1987 and recorded in the Cumberland County Registry of Deeds in Book 7997, Page 158 and deed dated June 30, 1965 and recorded in the Cumberland County Registry of Deeds in Book 2905, Page 248. The said Walter R. Johnson died July 14, 2007 leaving the said Sylvia M. Johnson as the sole surviving joint tenant.

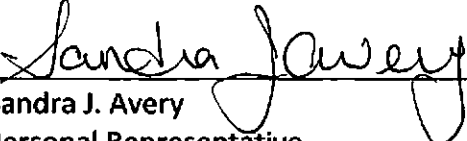
SIGNATURE ON FOLLOWING PAGE

IN WITNESS WHEREOF, Sandra J. Avery, in her capacity as Personal Representative of the Estate of Sylvia M. Johnson, has set her hand and seal in said capacity this 29th day of January, 2026.

WITNESS:



ESTATE OF SYLVIA M. JOHNSON

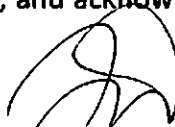
By: 

Sandra J. Avery
Personal Representative

STATE OF MAINE
COUNTY OF CUMBERLAND

January 29, 2026

Then personally appeared before me the above-named Sandra J. Avery as Personal Representative of the Estate of Sylvia M. Johnson, and acknowledged the foregoing instrument to be her free act and deed in said capacity.



Notary Public / Maine Attorney at law

Name:

Commission Expiration:

JOSHUA R. DOW, ESQ.
MAINE ATTORNEY-AT-LAW (Bar #8888)
Authorized to perform notarial acts
pursuant to 4 M.R.S.A. § 1910(1)(c)

EXHIBIT A
TO PERSONAL REPRESENTATIVES' DEED OF SALE

A certain lot or parcel of land situated in the Town of Windham, County of Cumberland, and State of Maine, bounded and described as follows:

A certain lot or parcel of land, containing fifty (50) acres, more or less, with all the buildings thereon, situated in the Town of Windham, County of Cumberland, and State of Maine, on the northeastwardly side of the town road leading northwestwardly past the former location of the School House in what was formerly School District No. 9, now called Highland Cliff Road, being the same premises which Clark Swett conveyed to Nathan Cloudman by deed dated August 15, 1825, recorded in the Registry of Deeds for said County of Cumberland, in Book 113, Page 271, and described as bounded northwestwardly by land formerly of Benjamin Bodge and Thomas Bodge; northeastwardly by land formerly of the widow Thurlow; southeastwardly by land formerly of John Trott and southwestwardly by the above named road; being all and the same premises which constituted the homestead and farm of the late Ann C. Moors, at the time of her decease, and being the same premises which were conveyed to Catherine MacLellan by Isabella J. Bickford by deed dated April 11, 1912, and recorded in said Registry of Deeds in Book 891, Page 301.

EXCLUDING, however, a certain lot or parcel of land, with the buildings thereon, on the northeasterly side of the Highland Cliff Road in the Town of Windham, County of Cumberland, and State of Maine, bounded and described as follows: Beginning at an iron post set in the ground on the northeasterly sideline of Highland Cliff Road at the westerly corner of the lot or parcel of land conveyed described in deed of Fred Hamblen McLennan et al dated December 4, 1963 and recorded in the Cumberland County Registry of Deeds in Book 2792, Page 60; thence North 49° East by land now or formerly of G. Hawkes a distance of seven Hundred (700) feet to an iron post set in the ground; thence South 17° 33' 30" East a distance of Two Hundred Sixty-three and Sixteen Hundredths (263.16) feet to an iron post set in the ground; thence in a southwesterly direction a distance of Seven Hundred (700) feet, more or less, to an iron post set in the ground on the northeasterly sideline of Highland Cliff Road, said iron post being located South 17° 33' 30" East a distance of Two Hundred Thirteen and Sixteen Hundredths (213.16) feet from the point of beginning; thence North 17° 33' 30" West by Highland Cliff Road a distance of Two Hundred Thirteen and Sixteen Hundredths (213.16) feet to the point of beginning.

The above described property is conveyed SUBJECT TO the following restrictions which shall be construed as covenants running with the land and enforceable by the Grantor herein, its successors, heirs and assigns.

1) The single family dwelling and barn situated on the property as of the date of this deed (the "Buildings") shall remain in place and shall not be removed by the Grantee, its successors and assigns. The foregoing shall not be deemed to prohibit any maintenance or alteration to comply with applicable ordinances, laws or regulations, or other maintenance or alteration which is consistent with customary maintenance, upgrades and other alterations, and which shall include additions to, and expansions of, the Buildings. Any final subdivision or lot split plan shall show a lot approximately four (4) acres in size appurtenant to the Buildings.

2) All buildable lots, including the to be created lot appurtenant to the Buildings described in Item 1 above, shall be for single family residential purposes and shall contain at least 30,000 square feet or more.

3) No more than two (2) single family residential lots (in addition to the lot containing the Buildings described in item 1 shall be permitted in the open field area, as shown on a to be recorded survey of the property.

4) Any buildings constructed outside of the open field area shall be a minimum of 800 feet from the sideline of Highland Cliff Rd.

The herein conveyed parcel is currently subject to Maine Tree Growth Tax classification, and is conveyed subject to such tax classification. Any penalty for withdrawal of all or any part of the above premises from said tax classification occurring after the date hereof shall be the responsibility of the Grantee.

TOWN OF WINDHAM MINOR\MAJORSUBDIVISION APPLICATION

Performance and Design Standards Waiver Request Form (Section 120-908 – Minor\Major Subdivision Review, Waivers)

For each waiver request from the Performance and Design Standards detailed in Section 120-911 of the Town of Windham Land Use Ordinance, please submit separate completed copy of this waiver request form for all waivers requested

Subdivision or

Project Name: Highland Cliff Estates Subdivision

Tax Map: 3

Lot(s): 49-A

**Waivers are requested from the following Performance and Design Standards
(Add Forms as necessary):**

Ordinance Section	Standard	Mark which waiver this form is for
120-911K(6)(b)	Minimum Open Space for Conservation Subdivision	<input checked="" type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

- a. Describe how a waiver from the standard indicated above will improve the ability of the project to take the property’s pre-development natural features into consideration. Natural features include, but are not limited to, topography, location of water bodies, location of unique or valuable natural resources, relation to abutting properties or land uses. Attach a separate sheet if necessary.

The project is proposing to dedicate 23.96 acres of open space on the 45.98-acre subdivision parcel, which represents 52.1% of the gross land area. We have designed all 27 of the proposed lots that are permitted by the parcel's net residential density calculations to be as close to the minimum 30,000 sf lot size as practical, and the roadway length has been designed to the minimum amount that is required to achieve the necessary road frontage for the lots while also avoiding disturbance around wetland areas and avoiding development on steep slopes. The property also has a deed restriction that does not allow more than 2 lots to be created within 800 feet of Highland Cliff Road, which helps to maintain the rural character of the development but requires more road to be built. It is not possible to provide the required 26.78 acres of open space while also considering the 3.3 acres of land that is dedicated to road right-of-way.

(Continued next page)

Ordinance Section: 120-911K(6)(b) (PLEASE PROVIDE A SEPERATE IMPACT CRITERIA FRO EACH ORDIANCE SECTION)

b. Will the waiver have an impact on any of the following criteria?

	Yes	No
Water or air pollution	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Light pollution or glare	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Soil erosion	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic congestion or safety	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pedestrian safety or access	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Supply of parking	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sewage disposal capacity	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solid waste disposal capacity	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Scenic or natural beauty, aesthetics, historic sites, or rare or irreplaceable natural areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Flooding or drainage issues on abutting properties	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The Town's ability to provide the subdivision with public safety services (if subdivision)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If granting the waiver will result in an impact on any of the criteria above, please provide more detail below.

TOWN OF WINDHAM MINOR\MAJORSUBDIVISION APPLICATION

Performance and Design Standards Waiver Request Form ([Section 120-908](#) – Minor\Major Subdivision Review, Waivers)

For each waiver request from the [Performance and Design Standards](#) detailed in [Section 120-911](#) of the Town of Windham Land Use Ordinance, please submit separate completed copy of this waiver request form for all waivers requested

Subdivision or

Project Name: Highland Cliff Estates Subdivision

Tax Map: 3

Lot(s): 49-A

**Waivers are requested from the following Performance and Design Standards
(Add Forms as necessary):**

Ordinance Section	Standard	Mark which waiver this form is for
120-910-C-3-A	Class A High Intensity Soil Survey	<input checked="" type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

- a. Describe how a waiver from the standard indicated above will improve the ability of the project to take the property's pre-development natural features into consideration. Natural features include, but are not limited to, topography, location of water bodies, location of unique or valuable natural resources, relation to abutting properties or land uses. Attach a separate sheet if necessary.

Test pits will be evaluated on each of the proposed lots and within the stormwater management areas by a Licensed Site Evaluator, for a total of at least 30 logged test pits. Wetlands have also been field-delineated by a wetland scientist and classified. The medium intensity soil survey shows that all of the soils within the area proposed for development are classified as Hydrologic Soil Group "C". It is unlikely that a High Intensity soil survey would provide any additional information that the Town would need to appropriately evaluate the soil conditions on the property.

(Continued next page)

Ordinance Section: 120-910-C-3-A (PLEASE PROVIDE A SEPERATE IMPACT CRITERIA FRO EACH ORDIANCE SECTION)

b. Will the waiver have an impact on any of the following criteria?

	Yes	No
Water or air pollution	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Light pollution or glare	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Soil erosion	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic congestion or safety	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pedestrian safety or access	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Supply of parking	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sewage disposal capacity	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solid waste disposal capacity	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Scenic or natural beauty, aesthetics, historic sites, or rare or irreplaceable natural areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Flooding or drainage issues on abutting properties	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The Town's ability to provide the subdivision with public safety services (if subdivision)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If granting the waiver will result in an impact on any of the criteria above, please provide more detail below.

TOWN OF WINDHAM MINOR\MAJORSUBDIVISION APPLICATION

Performance and Design Standards Waiver Request Form ([Section 120-908](#) – Minor\Major Subdivision Review, Waivers)

For each waiver request from the [Performance and Design Standards](#) detailed in [Section 120-911](#) of the Town of Windham Land Use Ordinance, please submit separate completed copy of this waiver request form for all waivers requested

Subdivision or

Project Name: Highland Cliff Estates Subdivision

Tax Map: 3

Lot(s): 49-A

**Waivers are requested from the following Performance and Design Standards
(Add Forms as necessary):**

Ordinance Section	Standard	Mark which waiver this form is for
120-910-C-3-E	Traffic Impact Analysis	<input checked="" type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

- a. Describe how a waiver from the standard indicated above will improve the ability of the project to take the property’s pre-development natural features into consideration. Natural features include, but are not limited to, topography, location of water bodies, location of unique or valuable natural resources, relation to abutting properties or land uses. Attach a separate sheet if necessary.

The project includes the creation of 27 single-family house lots that will be developed in two phases. The project is expected to generate approximately 255 total daily vehicle trips associated with the 27 homes based on formulas published by the Institute of Transportation Engineers, and the Town Subdivision Ordinance requires a Traffic Impact Analysis for projects that generate more than 140 vehicle trips per day. Vehicles that travel to or from the proposed development would travel from River Road to Alweber Road to Highland Cliff Road if entering from the South, or from various roads that connect to Highland Cliff Road if entering from the north. We did not identify any intersections or roadway segments that would require a traffic analysis as described in the ordinance.

(Continued next page)

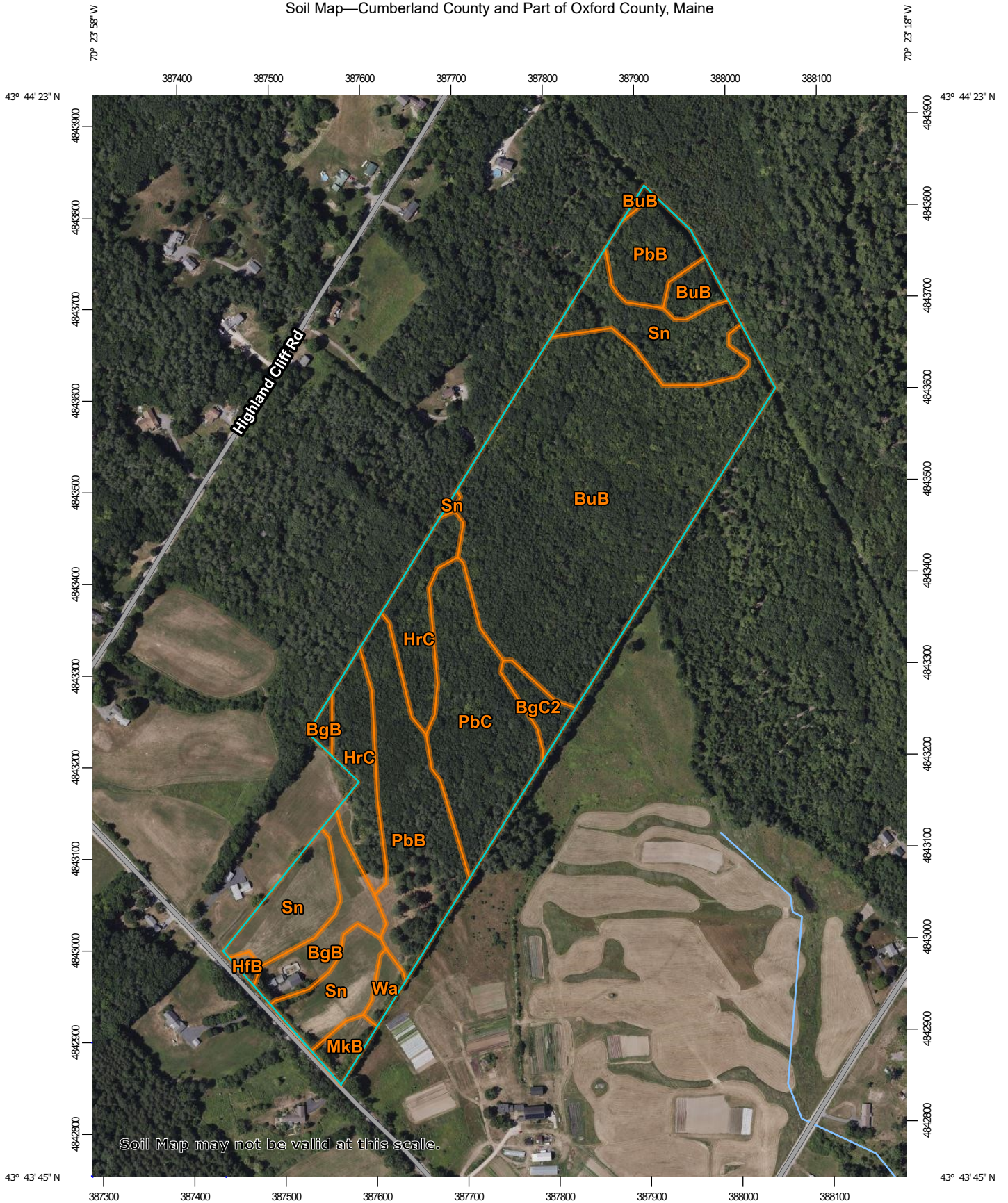
Ordinance Section: 120-910-C-3-E (PLEASE PROVIDE A SEPERATE IMPACT CRITERIA FRO EACH ORDIANCE SECTION)

b. Will the waiver have an impact on any of the following criteria?

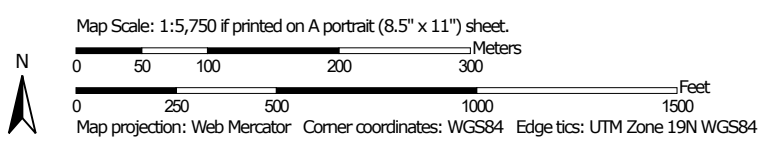
	Yes	No
Water or air pollution	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Light pollution or glare	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Soil erosion	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic congestion or safety	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pedestrian safety or access	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Scenic or natural beauty, aesthetics, historic sites, or rare or irreplaceable natural areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Flooding or drainage issues on abutting properties	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The Town's ability to provide the subdivision with public safety services (if subdivision)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If granting the waiver will result in an impact on any of the criteria above, please provide more detail below.

Soil Map—Cumberland County and Part of Oxford County, Maine




Soil Map may not be valid at this scale.





MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine

Survey Area Data: Version 22, Aug 29, 2025

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

Date(s) aerial images were photographed: Mar 1, 2022—Jul 1, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	2.3	4.6%
BgC2	Nicholville very fine sandy loam, 8 to 15 percent slopes	0.8	1.5%
BuB	Lamoine silt loam, 3 to 8 percent slopes	21.0	41.5%
HfB	Hartland very fine sandy loam, 3 to 8 percent slopes	0.2	0.3%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	4.4	8.8%
MkB	Merrimac fine sandy loam, 3 to 8 percent slopes	0.6	1.3%
PbB	Paxton fine sandy loam, 3 to 8 percent slopes	7.6	15.1%
PbC	Paxton fine sandy loam, 8 to 15 percent slopes	5.9	11.7%
Sn	Scantic silt loam, 0 to 3 percent slopes	7.3	14.4%
Wa	Walpole fine sandy loam	0.5	0.9%
Totals for Area of Interest		50.6	100.0%

Cumberland County and Part of Oxford County, Maine

BuB—Lamoine silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t0kc

Elevation: 10 to 490 feet

Mean annual precipitation: 33 to 60 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 90 to 160 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Lamoine and similar soils: 85 percent

Minor components: 11 percent

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

Description of Lamoine

Setting

Landform: River valleys, marine terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: silt loam

Bw - 7 to 13 inches: silt loam

Bg - 13 to 24 inches: silty clay loam

Cg - 24 to 65 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Depth to water table: About 6 to 17 inches

Frequency of flooding: None

Frequency of ponding: None

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

Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F144BY401ME - Clay Flat

Hydric soil rating: No

Minor Components

Scantic

Percent of map unit: 10 percent

Landform: River valleys, marine terraces

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: Yes

Biddeford

Percent of map unit: 1 percent

Landform: River valleys, marine terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F144BY002ME - Marine Terrace Depression

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Cumberland County and Part of Oxford County, Maine

Survey Area Data: Version 22, Aug 29, 2025

Cumberland County and Part of Oxford County, Maine

PbC—Paxton fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: bljg

Elevation: 0 to 1,020 feet

Mean annual precipitation: 48 to 50 inches

Mean annual air temperature: 45 to 46 degrees F

Frost-free period: 145 to 155 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Paxton and similar soils: 86 percent

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

Description of Paxton

Setting

Landform: Drumlinoid ridges

Landform position (two-dimensional): Shoulder, backslope

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

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Coarse-loamy lodgment till derived from mica schist

Typical profile

H1 - 0 to 8 inches: fine sandy loam

H2 - 8 to 20 inches: fine sandy loam

H3 - 20 to 65 inches: fine sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: 18 to 40 inches to densic material

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: About 30 to 42 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 22, Aug 29, 2025

Cumberland County and Part of Oxford County, Maine

HrC—Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2x1cy

Elevation: 0 to 520 feet

Mean annual precipitation: 36 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 90 to 160 days

Farmland classification: Farmland of local importance

Map Unit Composition

Lyman and similar soils: 45 percent

Tunbridge and similar soils: 40 percent

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

Description of Lyman

Setting

Landform: Ridges, hills

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

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

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 3 inches: loam

E - 3 to 5 inches: fine sandy loam

Bhs - 5 to 7 inches: loam

Bs1 - 7 to 11 inches: loam

Bs2 - 11 to 18 inches: channery loam

R - 18 to 79 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.5 percent

Depth to restrictive feature: 11 to 24 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: F144BY702ME - Shallow and Moderately-deep Till

Hydric soil rating: No

Description of Tunbridge

Setting

Landform: Ridges, hills

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

Landform position (three-dimensional): Side slope, crest

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material

Oa - 3 to 5 inches: highly decomposed plant material

E - 5 to 8 inches: fine sandy loam

Bhs - 8 to 11 inches: fine sandy loam

Bs - 11 to 26 inches: fine sandy loam

BC - 26 to 28 inches: fine sandy loam

R - 28 to 79 inches: bedrock

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 41 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Ecological site: F144BY702ME - Shallow and Moderately-deep Till

Hydric soil rating: No

Data Source Information

Soil Survey Area: Cumberland County and Part of Oxford County, Maine

Survey Area Data: Version 22, Aug 29, 2025



To: Dustin Roma
DM Roma Consulting Engineers
PO BOX 1116
Windham, ME 04062

Date: April 29, 2026

From: Alexander A. Finamore, LSE
Mainely Soils, LLC

Re: 180 Highland Cliff Road, Windham, ME – Wetland Delineation
Memorandum

At the request of DM Roma Consulting Engineers (the “Client”), Mainely Soils conducted on-site wetland and waterbody delineations on an approximately 52.5 acre parcel located at 180 Highland Cliff Road in Windham, Maine. These field investigations were performed to provide baseline environmental data to inform the proposed expansion of use of the site. The natural resources assessments described in this memorandum were completed in March of 2026. In addition to describing the identified resources this report describes the existing conditions within the study area, and the methodologies employed for the assessments.

PROJECT DESCRIPTION

The project site is located within a zone of residential development along the Highland Cliff Road corridor identified as the Farming District in the Town of Windham. The proposed development site is currently occupied by a farmhouse, barn, open fields, and forested land on the northern portion of the site. Surrounding land use of the site is farming and residential. Access to the site will be from Highland Cliff Road. In total, the wetland and waterbody delineation survey area encompassed approximately 52.5 acres, identified by the Town of Windham as Tax Map 3, Lot 49-A.

SITE DESCRIPTION

The Study Area occurs in the Southern Coastal biophysical region of Maine (McMahon, 1990). The Southern Coastal biophysical region is characterized by relatively flat terrain, with elevations generally ranging up to 100 feet above sea level. Bedrock is frequently exposed and covered by thin glacial deposits. Along the immediate coast, soils are generally deep sands (where beaches occur) or shallow sandy loams that are well to excessively drained. Extensive coarse-grained glaciomarine deposits occur in the central portion of the South Coastal Region and along its western margin. The survey area is located within the Presumpscot River watershed (Hydrologic Unit Classification (HUC) 8 identification 01060001), although surface water drainage within the site and vicinity is highly altered by existing developed land surfaces and stormwater management systems.

The Natural Resource Conservation Service soil survey mapping identifies the majority of the native soils at the site as being formed within glaciolacustrine or glaciomarine deposits on coastal lowlands and river valleys (Lamoine and Scantic Series) (Web Soil Survey, 2025). An upland ridge running north to south through the center of the site is shown to have being formed within lodgment till on hills, drumlins, till plains, and ground moraines (Paxton Series). The Lamoine series is a somewhat poorly drained soil, Scantic is poorly drained and Paxton is well drained.

Study Methodology

Mainely Soils conducted wetland delineation field work within the survey area on March 30th 2026. The boundary of wetlands were delineated in accordance with the Army Corps of Engineers 1987 Wetland Delineation Manual (1987 Manual) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (Regional Supplement, 2012). All wetland delineations were conducted using the Routine

Determination Methods, which requires that a wetland contain a dominance of hydrophytic vegetation, hydric soils, and evidence of hydrology in order to be considered a wetland. Wetland boundaries were located and demarcated using pink day-glo flagging, with each flag labeled with the corresponding alphabetic wetland identification code and a flag number (i.e. A-1). Wetland flag locations were recorded in the field using a Trimble® GPS unit capable of sub meter accuracy, post processed, and transferred and incorporated onto project mapping.

Additional field notes were also taken to record the classification of each wetland in accordance with the Classification of Wetlands and Deepwater Habitats of the United States, general site characteristics, unique qualities observed during the site assessment, and other considerations relevant to investigation findings and the future completion of a wetlands functions and values assessment in accordance with the Highway Methodology Workbook: Supplement. Representative photographs of each wetland were taken, field sketches were labeled of the wetland boundary on an aerial photograph-based map, and notes were recorded on the flagging sequence for each wetland.

Mainly Soils also surveyed the site for streams, in accordance with the State of Maine Natural Resources Protection Act stream criteria and definitions. One perennial stream was delineated within the Study Area.

Vernal pools are small (usually less than one acre), seasonal wetlands that lack perennial inlet or outlet streams and have no permanent fish populations (Calhoun and deMaynadier 2004). Vernal pools are valuable wetland wildlife habitat because of their potentially high biological productivity and use as breeding habitat by specialized animal communities. The characteristics of vernal pools including size, duration of flooding, substrate type and vegetative community are directly affected by a variety of factors such as landscape setting, surficial geology, soil type, and surrounding vegetation (Maine Audubon Society 1999).

No potential pools were identified onsite.

Study Results

Using the methodologies described above, a wetland delineation was performed on March 30th, 2026. A description of the identified resources follows. Supporting attachments include Representative Photographs (Attachment 1). Wetland Delineation Data Forms can be provided upon request.

Wetlands at the project site consisted of five distinct wetland features. Wetlands A and E were wet meadow wetlands located in maintained agricultural fields. Wetlands B, C and D were located within forested depressions in the northern portion of the site.

Wetlands A and E were located within maintained hayfields along Highland Cliff Road and were classified as seasonally saturated palustrine wet meadow wetlands dominated by non-persistent emergent vegetation (PEM2E). Dominant vegetation included reed canary grass (*Phalaris arundinacea*), fringed sedge (*Carex crinita*), woolgrass (*Scirpus cyperinus*), purple loosestrife (*Lythrum salicaria*), and soft rush (*Juncus effusus*). The soils within the wetland had a thick, dark loamy surface overlaying a depleted silt loam substratum. Evidence of wetland hydrology included small pockets of water, water stained leaves, and saturation to the soil surface at the time of field investigations on March 30th, 2026.

Wetlands B, C, and D were located within the forested portion of the site and were located in natural depressions within the surrounding landscape. Vegetation was dominated by red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), eastern hemlock (*Tsuga canadensis*), glossy buckthorn (*Frangula alnus*), highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), sensitive fern (*Onoclea sensibilis*), fringed sedge, and trillium (*Trillium erectum*). The soils within the wetland had a thin, dark loamy surface overlaying a depleted silt loam substratum. Evidence of wetland hydrology included water stained leaves, geomorphic position, and saturation to the soil surface at the time of field investigations on March 30th, 2026. Wetlands were characterised as seasonally saturated palustrine deciduous forested wetlands (PFO1E).

One perennial stream was located within Wetland D. It was approximately 3–4 feet wide, had 10–12 inch vertical banks, a sand/gravel substrate, and 2–3 inches of flowing water at the time of the delineation.

Summary

The information contained in this memorandum was collected in order to provide detailed, on-site information regarding wetland and waterbody resources. This information is intended to be used for project planning purposes and to support permitting needs. Five wetland areas were delineated on the site, and were identified as Wetlands A, B, C, D, and E. All wetlands generally exhibited a saturated hydroperiod, and provided groundwater discharge, floodflow alteration, and stormwater/water quality maintenance functions. One perennial stream was identified on the site. No potential vernal pools were identified.

Wetlands are regulated by the U.S. Army Corps of Engineers under the federal Clean Water Act, and by the Maine Department of Environmental Protection under the Maine Natural Resources Protection Act (NRPA). The State of Maine further differentiates wetlands under NRPA by regulating certain wetlands as “wetlands of special significance” (WOSS). Only those wetlands within 25 feet of the perennial streams constitute as a WOSS under NRPA, although all wetlands are still subject to NRPA jurisdiction as non-WOSS wetlands.

Wetlands within the survey area may be further regulated under municipal ordinances, such as Shoreland Zone, Site Plan Review, or other local ordinances. Impacts to wetlands resulting from proposed project development require that permits first be obtained from the MDEP and the USACE before proceeding with construction, and where applicable, municipal governing bodies. Consultation with these agencies early in the project design process is encouraged.

References:

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitat in the United States. U.S. Fish and Wildlife Service. FWS/OBD-79/31 103pp.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- McMahon, J.S. 1990. The Biophysical Regions of Maine: Patterns in the Landscape and Vegetation. University of Maine.
- U.S. Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. ERDC/EL TR-12-01. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- Web Soil Survey. 2026. U.S. Department of Agriculture – Natural Resources Conservation Service. <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

Attachments:

1. Representative Site Photographs

180 Highland Cliff Road, Windham, ME – Wetland Delineation
Memorandum
Page 4 of 4
April 29, 2026

Attachment 1
Representative Site Photographs

Natural Resource Photographs - March 30th, 2026
180 Highland Cliff Road, Windham, Maine



Photo 1: View looking southeasterly at Wetland A from flag 1



Photo 2: View looking southwesteryly at Wetland A from flag 8

Natural Resource Photographs - March 30th, 2026
180 Highland Cliff Road, Windham, Maine



Photo 3: View looking northeasterly at Wetland B from flag 1



Photo 4: View looking southeasterly at Wetland B from flag 11

Natural Resource Photographs - March 30th, 2026
180 Highland Cliff Road, Windham, Maine



Photo 5: View looking northerly at Wetland C from flag 1



Photo 6: View looking easterly at Wetland C from flag 4

Natural Resource Photographs - March 30th, 2026
180 Highland Cliff Road, Windham, Maine



Photo 7: View looking northwesterly at Wetland D from flag 1



Photo 8: View looking northwesterly at Wetland D from flag 16

Natural Resource Photographs - March 30th, 2026
180 Highland Cliff Road, Windham, Maine



Photo 9: View looking northeasterly at Wetland E from flag 1



Photo 10: View looking southwesterly at Wetland E

Natural Resource Photographs - March 30th, 2026
180 Highland Cliff Road, Windham, Maine



Photo 11: View looking downstream at Stream S1



Photo 12: View looking downstream at Stream S1



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY

177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

December 19, 2025

J.P. Connolly
DM Roma Consulting Engineers
P.O. Box 1116
Windham, ME 04062

Via email: jp@dmroma.com

Re: Rare and exemplary botanical features in proximity to: Project #25073, Proposed Residential Development, 180 Highland Cliff Road, Windham, Maine.

Dear J.P. Connolly:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received December 19, 2025 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Windham, 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 also no other 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.

Because of the current forest condition, landform, and topography of the surrounding landscape, MNAP cannot definitively say that Small Whorled Pogonia is unlikely here, and therefore we recommend survey for this species through the forested portion of the site by a qualified botanist between June 8th and September 30th. Please reference the attached USFWS survey protocol.

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.

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



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

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

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

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,

Abby Stepanauskas

Abby Stepanauskas | Ecologist | Maine Natural Areas Program
207-287-8048 | abby.stepanauskas@maine.gov

Small Whorled Pogonia (*Isotria medeoloides*) Survey Protocols for Maine

Introduction: Small whorled pogonia is a rare native orchid of eastern North America that is listed as Threatened under the federal Endangered Species Act, and as Endangered by the state of Maine. For additional guidance on conducting surveys, on the biology of the species, or for field assistance for completing a survey contact the Maine Natural Areas Program (MNAP, contact Eric Doucette, eric.doucette@maine.gov, 207-287-8041).

Species Description: Small whorled pogonia plants appear in the late spring (late May to early June) from a perennial underground rootstock. Stems usually grow singly, though sometimes in pairs, and are typically 3-8" (8-20 cm) tall. Under normal conditions plants produce a single whorl of 5 elliptical leaves 1-3" (2.5-8 cm) long at the top of the stem. Occasionally, a single small leaf will also grow under the whorl along the stem. Note that the plants are often the target of small herbivores and may lose one or more of their leaves. The stem itself is moderately stout, about 1/8" (2-3 mm) wide, and glaucous pale green. Half or more of the plants in any given population will grow vegetatively in any given year, bearing no flowers or fruit. On reproductive plants, 1 to 2 flowers appear soon after emergence. They are greenish yellow, about 1" (2.5 cm) long, and born on top of the whorl of leaves. Pollinated flowers will produce an upright, cylindrical fruit (a capsule) about 1" (2.5 cm) long by 1/4" wide (0.6 cm), which turns from pale green to light brown by the fall when it splits open to release thousands of dust-like seeds. Refer to pictures included on the last page of this document and search online for additional images that capture the variety of plant conditions.



Lookalikes: Other common whorled-leaved herbs that grow in small whorled pogonia habitat in Maine include starflower (*Lysimachia borealis*), bunchberry (*Chamaepericlymenum canadense*), and Indian cucumber root (*Medeola virginiana*). Of these three species, vegetative Indian cucumber root plants are most similar to small whorled pogonia but can be readily distinguished from it by their narrow, darkened, pubescent stems. Anyone unfamiliar with small whorled pogonia should brush up on the identification of these three lookalikes.

Population and Habitat Characteristics: Plants within a population are generally thinly scattered and widely spaced, though occasionally several will occur in a local group. In Maine, small whorled pogonia typically occurs in mid-successional, mixed wood, mesic forests with a sparse shrub layer and thick leaf litter. Herb cover may vary ranging from high cover of ferns and other herbs to very little cover. The plants often occur near intermittent streamlets or where a hardpan impedes water percolation into the soil. Some common associated understory plants include Indian cucumber root (*Medeola virginiana*), New York fern (*Parathelypteris novaboracensis*), cinnamon fern (*Osmundastrum cinnamomeum*), partridge-berry (*Mitchella repens*), and downy rattlesnake-plantain (*Goodyera pubescens*).

Survey Guidance: Due to the inconspicuous nature of the plants, relatively small population sizes, and the thin distribution of plants within supporting habitat, small whorled pogonia populations can be difficult to detect. A survey of a given area should be methodical and completed with concentration and

focus. Ideally surveys for this species should be conducted by botanically trained individuals who have previously seen the species and its preferred habitat.

Time of Year: Surveys should be conducted between June 8 and September 30, the period of the growing season when plants have emerged and have leaves. If there was an unusually cool spring, plant emergence may be delayed by one to two weeks. Plants may sometimes be found with leaves and capsules as late as early October, at which time leaves will be turning yellow and will otherwise show signs of wear. Plants may sometimes be found outside of this calendar window, but negative surveys outside of the calendar window cannot be considered conclusive.

Recommended Survey Methods: Start by assessing the habitat types at the site. Identify areas with conditions that may support the species. The species only grows under a forest canopy. The canopy may be closed or have gaps. The species does not grow in habitats that lack a forest canopy (open fields, shrub dominated areas, early successional cover), nor does it grow in wetlands, though it does sometimes grow in low-lying areas near the edges of wetlands or along small streams. Once potential habitat areas are identified, they should be surveyed methodically by dividing them up into visual units. Visual units can be delimited by local topography (ravines, slopes, benches), by landmarks (boulders, downed or otherwise conspicuous trees, old woods roads, stone walls), and/or by hanging survey ribbon or placing wire flags. The surveyor should slowly walk back and forth progressing through a given visual unit. A stick or pole is helpful for nudging ferns clumps or low hemlock branches aside. Squatting and peering under tall ferns is also a good way to spot plants. As small whorled pogonia plants are relatively small and blend in well with surrounding vegetation, it is very important to keep attention focused in the area immediately around yourself (0-10' radius). In areas with very thin ground cover such as what occurs under mature hemlocks, it is possible to spot plants as much as 25' feet away, but most plants are found within 10' of an observer. MNAP recommends surveying areas within 250' of any proposed development. Maintaining a track with a GPS unit is very useful for documenting survey effort and identifying survey gaps.

Small whorled pogonia plants may grow anywhere within a site where a population is located but it favors certain micro-habitats such as:

- vernal or ephemeral runoff courses (leaf piles)
- terraces or benches and base-of-slope areas.
- small canopy openings, fern patches

Documenting a Population: If one or more small whorled pogonia plants are found, tie brightly colored surveyor ribbon adjacent to each plant and collect GPS coordinates at the respective locations. Take close up digital images of the plants to be used for subsequent confirmation of the species by MNAP. Minimize impacts by limiting foot traffic and any other potential disturbances in and around areas where they are growing. Avoid touching plants with fingers as handling can attract herbivores. Once plants have been found, spend additional time searching the areas within a 20' radius of each plant, as there is a comparatively high probability of finding additional plants within this area. Upon completion of the survey, make sure there is an easy and obvious way to relocate any plants that were found.

If plants are found, please contact the Maine Natural Areas Program for recommendations regarding any proposed land uses (207-287-8044, maine.nap@maine.gov).

Small whorled pogonia (*Isotria medeoloides*) Images:



Ideal flowering specimen (early June)



Late season, vegetative plants



Hidden in ferns, a not uncommon location



Plants with capsules

Rare and Exemplary Botanical Features within 4 miles of

Project: #25073, Proposed Residential Development, 180 Highland Cliff Road, Windham, Maine.

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland), Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
Broad Beech Fern						
	SC	S2	G5	2016-09-04	28	Hardwood to mixed forest (forest, upland)
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
Clothed Sedge						
	E	S1	G4	2000-06-06	5	Dry barrens (partly forested, upland)
Columbian Watermeal						
	SC	S2	G5	2016-09-12	11	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland), Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						

Engelmann's Spikerush						
PE	SH	G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)	
Enriched Northern Hardwoods Forest						
	S3	GNR	2001-08-28	34		
Fern-leaved False Foxglove						
SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)	
Great Blue Lobelia						
PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)	
Hollow Joe-pye Weed						
SC	S2	G5	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)	
Horned Pondweed						
SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)	
Marsh Milkwort						
PE	SH	G4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)	
Missouri Rockcress						
T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)	

Mountain Honeysuckle						
E	S2	G5	2007-10-05	11	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)	
Pitch Pine Woodland						
	S3	G2	2005-12-08	28		
Screwstem						
T	S1	G5T3T5	2020-09-17	4		
Small Reed Grass						
SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)	
Southern Bog-clubmoss						
E	S1	G5	2011-08-31	1	Open wetland, not coastal nor rivershore (non-forested, wetland),Non-tidal rivershore (non-forested, seasonally wet)	
Spotted Pondweed						
T	S1	G5	2016-06-22	3	Open water (non-forested, wetland)	
Vasey's Pondweed						
SC	S2	G5	1901-08-04	7	Open water (non-forested, wetland)	

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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 critically imperiled (1) to secure (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 of 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#	Intraspecific Taxon (trinomial) – The status of intraspecific 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).

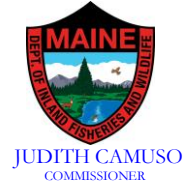
Rank	Definition
A	Excellent – Excellent estimated viability/ecological integrity.
B	Good – Good estimated viability/ecological integrity.
C	Fair – Fair estimated viability/ecological integrity.
D	Poor – Poor estimated viability/ecological integrity.
E	Extant – Verified extant, but viability/ecological 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>





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



January 8, 2026

Dustin Roma
DM Roma Consulting Engineers
P.O. Box 1116
Windham, ME 04062

RE: Information Request - 180 Highland Cliff Road, Subdivision, Windham Project ID 9742-11319

Dear Dustin:

Per your request received on **December 15, 2025**, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information sources for known locations of Endangered, Threatened, and Special Concern (Rare) species; designated Essential and Significant Wildlife Habitats; inland fisheries and aquatic habitats; and other protected natural resource concerns within the vicinity of the **180 Highland Cliff Road, Subdivision, Windham** project, pursuant to MDIFW's authority. It is understood the project proposes a 14-lot residential subdivision and will require tree clearing. Please note that as project details are lacking, our comments should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be affected by this project.

ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

Bat Species

Of the eight species of bats that occur in Maine, four species are afforded protection under the Maine Endangered Species Act (MESA, 12 M.R.S 12801 et. seq.): little brown bat (State Endangered), northern long-eared bat (State Endangered), eastern small-footed bat (State Threatened), and tri-colored bat (State Threatened). The four remaining bat species are designated as Species of Special Concern: big brown bat, red bat, hoary bat, and silver-haired 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 spring/fall migration, the summer breeding season, and/or for overwintering. Depending on the extent of project clearing, we may recommend no tree clearing from May 15 through August 15. Alternatively, we may recommend that acoustic surveys be conducted within the project area, conducted by qualified bat biologists experienced with acoustic survey methodology, following MDIFW's most recent survey protocol. The lack of acoustic detection of listed bats would allow for clearing during the bat maternity season per MDIFW current guidelines.

January 8, 2026

Letter to Dustin Roma, DM Roma Consulting Engineers

Comments RE: 180 Highland Cliff Road, Subdivision, Windham

SIGNIFICANT WILDLIFE HABITAT

Significant Vernal Pools

At this time MDIFW Significant Wildlife Habitat maps indicate no known presence of Significant Vernal Pools (SVPs) in the project search area. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. SVPs are not included on MDIFW maps until project areas have been surveyed using approved methods and the survey results confirmed. Therefore, their absence from resource maps is not necessarily indicative of an absence on the ground.

Our Department recommends that any potential Significant Vernal Pool depressions be avoided as well as the 250-foot surrounding the pool, which is the associated Critical Terrestrial Habitat. If not already completed, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Department for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

AQUATIC RESOURCES

Fish Habitat

We recommend that 100-foot undisturbed vegetated buffers be maintained along any streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams 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 fisheries and aquatic habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

January 8, 2026

Letter to Dustin Roma, DM Roma Consulting Engineers

Comments RE: 180 Highland Cliff Road, Subdivision, Windham

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

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,

A handwritten signature in black ink, appearing to read 'L. Hatmaker', with a long horizontal stroke extending to the right.

Laura Hatmaker

Natural Resource Biologist