

**Sketch Plan - Minor & Major Site Plan**

**Project Name:** Town of Windham Landfill Solar PV Array

**Tax Map:** 21 **Lot:** 19

**Estimated square footage of building(s):** \_\_\_\_\_

**If no buildings proposed, estimated square footage of total development:** 72,686 sq ft (24,878 sq ft panels only)

**Is the total disturbance proposed > 1 acre?**  Yes  No

**Contact Information**

1. Applicant

Name: Ben Smith / Town of Windham

Mailing Address: 8 School Road, Windham, ME 04062

Telephone: 207-712-1069 Fax: \_\_\_\_\_ E-mail: bwsmith@windhammaine.us

2. Record owner of property

\_\_\_\_\_ (Check here if same as applicant)

Name: Town of Windham

Mailing Address: 8 School Road, Windham, ME 04062

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

3. Contact Person/Agent (if completed and signed by applicant's agent, provide written documentation of authority to act on behalf of applicant)

Name: Josh Baston

Company Name: ReVision Energy

Mailing Address: 758 Westbrook St., South Portland, ME 04106

Telephone: 207-595-2445 Fax: \_\_\_\_\_ E-mail: joshb@revisionenergy.com

I certify all the information in this application form and accompanying materials is true and accurate to the best of my knowledge.

 Josh Baston 1/16/2020  
Signature Date

<b>Sketch Plan - Minor &amp; Major Site Plan: Submission Requirements</b>		<b>Applicant</b>	<b>Staff</b>
a.	Complete Sketch Plan Application form	X	
b.	Project Narrative	X	
	conditions of the site	X	
	proposed use	X	
	constraints/opportunities of site	X	
	identify if any of the following will be completed as part of the Final Plan	X	
	traffic study	NA	
	utility study	NA	
	market study	NA	
c.	Name, address, phone for record owner and applicant	X	
d.	Names and addresses of all consultants working on the project	X	
e.	Evidence of right, title, or interest in the property	X	
f.	Evidence of payment of Sketch Plan fees and escrow deposit	NA	
g.	Any anticipated waiver requests (Section 808)	X	
	Waivers from Submission Criteria in Section 811 of the Land Use Ordinance.		
	If yes, submit letter with the waivers being requested, along with reasons for each waiver request.		
	Waivers from Subdivision Performance Standards in Section 812 of the Land Use Ordinance.	X	
	If yes, submit letter with the waivers being requested, along with a completed "Performance and Design Standards Waiver Request" form.	X	
<b>h.</b>	<b>Plan Requirements</b>		
	Please note: the Sketch Plan does not need to be surveyed. However, if it is surveyed, please refer to the GIS requirements for Final Plan review. It may be in the applicant's interest to obtain the required GIS data while the surveyor is on site.		
1	Name of subdivision, north arrow, date and scale (not more than 100 ft: 1in)	X	
2	Boundary of the parcel	X	
3	Relationship of the site to the surrounding area	X	
4	Topography of the site at an appropriate contour interval (10' contours generally adequate)		
5	Approximate size and location of natural features of the site, including wetlands, streams, ponds, floodplains, groundwater aquifers, significant wildlife habitats and fisheries, or other important natural features. If none, so state.	X	
6	Existing buildings, structures, or other improvements on the site	X	
7	Existing restrictions or easements on the site. If none, so state.	X	
8	Approximate location and size of existing utilities or improvements servicing the site. If none, so state.	X	
9	Class D medium intensity soil survey		
10	Location and size of proposed building, structures, access drives, parking areas, and other development features.	X	
<b>Electronic Submission</b>			

## Town of Windham **Sketch Plan - Minor & Major Site Plan: Submission Requirements**

### Project Narrative

Revision Energy is proposing to build a 504 KW DC system at the closed and capped landfill on Enterprise Drive off of Route 302 in Quarry Ridge Business Park in North Windham. The project will consist of 1,344 solar panels arranged in 13 rows with 25 feet between each row. The total project area covers 72,686 square feet, or 1.7 acres. The array is projected to produce 682,000 MWh each year, of which the Town of Windham will be the offtaker.

### Conditions of the site

The Windham Landfill site covers roughly 20 acres total, of which 10 was used to store municipal solid waste. It began operation in the 1960s and ceased accepting waste in 1988. The landfill was closed over a period in 1992-3 and capped with 18 inches of impermeable soil and a PVC membrane. There are no buildings or structures on the site, although there are a series of vents for venting landfill gas spaced 50-100 feet apart. The array will not impact the functioning of these vents and a 10' setback will be maintained between the vents and the solar array per DEP best practices.

### Proposed use

The solar array will consist of 1,344 375W solar panels connected to 7 inverters. In total, the footprint of the rows of panels is 24,878 square feet, while the project area including the open space between the rows of panels is 72,686 square feet. The array will be ballasted on top of the landfill so there will be no penetrations into the cap of the landfill. The aluminum racking will be fastened to concrete ballast blocks which will be precast or more likely poured in place. Gravel will be placed between the top soil layer and each ballast block to aid levelling and increase the friction between blocks and the soil.

Inverters and conduit when possible will be attached to the racking system and ballast blocks. At the east end of each row, conduit will enter the ground and will travel underground to the main disconnect panel. Minimum cover depth per NEC 2014 300.5(A) for this location is 18" for non-metallic conduit or 6" for rigid metallic conduit. Additional top soil will be added above the conduit when necessary to achieve minimum cover depth, and the added soil will be graded to allow grass cutting machinery to easily travel over it. Array grounding will be accomplished by a method that does not penetrate the landfill barrier layer. No part of the equipment located on the capped area will penetrate the barrier soil layer.

As shown on the attached one-line drawing, 7 inverters will support groups of 192 modules each. The output of each inverter will connect to the main disconnect panel with a 100A circuit breaker. The main disconnect panel and the metering equipment will be located adjacent to the utility service as dictated by Central Maine Power.

A utility pad for a new transformer will be installed off of Enterprise Drive and will be connected to existing CMP medium voltage infrastructure. The land use ordinance performance standard 812.I requires that utility lines be placed underground. A waiver from this standard is requested for two potential reasons. First, the final utility design will need to be approved by CMP who will have some say in determining if lines will need to be underground or overhead to connect to the exiting electrical distribution. Second, since we are installing on a capped landfill Maine DEP will not allow any excavation into the landfill earth cover. This may require utility lines to be located above overhead instead of below ground.

A 6' chain link perimeter fence shall be installed around the perimeter of the landfill to keep out unauthorized personnel and vehicles. Exposed array conductors will be protected from access by unqualified personnel in accordance with National Electric Code requirements. Lockable electrical enclosures and equipment requiring tools to open will be used to restrict access to all equipment by unauthorized personnel.

This project will not meaningfully impact the existing drainage of the landfill cap which has been designed to shed rather than absorb rainwater. Maine DEP has defined that the footprint of solar panels on ground mounted solar arrays does not create additional impermeable surface on a land parcel as the panels do not inhibit the growth of vegetation underneath the array. 8736 sq. feet of impermeable surface will be created by the concrete ballast blocks however by design the entire landfill cap is an impermeable surface.

Solar arrays are generally low maintenance projects as the various components have no moving parts and are warranted from between 10 and 25 years. Production from the array will be monitored remotely via an on-site cellular enabled data acquisition system, additionally a physical inspection of the system will occur on an annual basis. Under the terms of the power purchase agreement, the town will be responsible for mowing the grass and maintaining the landfill as they always have and the investor will be responsible for all maintenance and servicing of the solar array.

This project will not require on-site sewage disposal or water supply. During a construction period of 8-10 weeks, there will be traffic of up to 12 vehicles per day associated with construction activities. Post construction traffic will be limited to a single vehicle completing annual inspections or responding to maintenance or troubleshooting as needed.

#### Constraints/opportunities of site

The proposed site is zoned commercial for municipal use and is surrounded by several heavy manufacturers, Grondin gravel pit/quarry, a self-storage facility, an indoor shooting range, and Genest Concrete. The siting of the project on the capped landfill takes advantage of an already

impermeable surface and provides a secondary use beyond the primary use of containing solid waste.

identify if any of the following will be completed as part of the Final Plan

traffic study- no

utility study- yes

market study- no

**TOWN OF WINDHAM  
SUBDIVISION & SITE PLAN APPLICATION**

**Performance and Design Standards Waiver Request Form**

(Section 808 – Site Plan Review, Waivers)  
(Section 908 – Subdivision Review, Waivers)

For each waiver request from the Performance and Design Standards detailed in Section 811 or Section 911 of the Town of Windham Land Use Ordinance, as applicable, please submit a separate completed copy of this waiver request form.

**Subdivision or Project Name:** *Landfill Solar Array*  
**Tax Map:** 21 **Lot:** 19

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

Ordinance Section	Standard	Mark which waiver this form is for
812.1	Utilities	

- 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.

A waiver from this standard is requested for two potential reasons. First, the final utility design will need to be approved by CMP who will have some say in determining if lines will need to be underground or overhead to connect to the exiting electrical distribution. Second, since we are installing on a capped landfill Maine DEP will not allow any excavation into the landfill earth cover. This may require utility lines to be located above overhead instead of below ground.

(continued next page)

Ordinance Section: 812.1

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

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

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



041339

88890 1101

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, THAT WINDHAM PROPERTIES, a  
Maine general partnership with a place of business at  
County of Cumberland, State of Maine, and  
WINDHAM EXCAVATING CO., a Maine corporation with a place of  
business in Portland, County of Cumberland, State of Maine in  
consideration of one dollar and other valuable consideration  
paid by TOWN OF WINDHAM, a body politic and corporate, whose  
mailing address is: 8 School Road, Windham, Maine 04061 the  
receipt whereof is hereby acknowledged, does hereby give,  
grant, bargain, sell and convey unto the said TOWN OF WINDHAM,  
its successors and assigns forever,

A certain lot or parcel of land with any buildings thereon,  
located on the easterly side of Route #302, but not  
adjacent thereto in the Town of Windham, County of  
Cumberland and State of Maine, and more particularly  
described as follows:

Beginning at an iron rod set on the westerly sideline of  
Central Maine Power Co. easement (Sec. N. 189), said rod  
marking the most northerly corner of a parcel of land  
conveyed by Scott Paper Co. to the Inhabitants of the Town  
of Windham recorded in the Cumberland County Registry of  
Deeds in Book 3411, Page 167; thence South 52° 27' 25" West  
along the northeast boundary of said parcel and also along  
the northeast boundary of the present Windham Town Dump a  
distance of 1130.5 feet to an iron rod set in the ground;  
thence turning North 29° East along a ridge line and land  
now or formerly of Windham Excavating Co. and land now or  
formerly of Windham Properties a distance of 1,248 feet  
more or less to an iron pipe; thence turning South 35° 30'  
East continuing along land now or formerly of Windham  
Properties, 494 feet, more or less to an iron rod and point  
of beginning. Said parcel contains 6.41 acres, more or  
less. Bearings are magnetic November, 1988.

Being a portion of the premises conveyed to Windham  
Properties by deed of George M. Hutchins, et al dated April  
8, 1983 and recorded in said Registry of Deeds in Book



8K8890-0002

6146, Page 180; and being a portion of the premises conveyed to Windham Excavating Co. by deed of Thomas F. Connor, et al dated April 2, 1986 and recorded in said Registry of Deeds in Book 7121, Page 36.

The purpose of this deed is to convey to the Town of Windham the premises contained in a lease between Lawrence H. Hutchinson, et al and the Town of Windham dated April 29, 1977 and recorded in Cumberland County Registry of Deeds in Book 4017, Page 44.

TO HAVE AND TO HOLD, the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said TOWN OF WINDHAM, its successors and assigns, to its and their use and behoof forever.

AND they do COVENANT with the said Grantee, its successors and assigns, that they are lawfully seized in fee of the premises, that they are free of all encumbrances, that they have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that they and their successors shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, the said WINDHAM PROPERTIES and WINDHAM EXCAVATING CO. have hereunto set their hands and seals this day of the month of \_\_\_\_\_, 1989.

SIGNED, SEALED and DELIVERED  
in presence of:

*[Signature]*

*[Signature]*

WINDHAM PROPERTIES

By: *Philip H. Gaudin*

Its General Partner

WINDHAM EXCAVATING CO.

By: *Robert A. Taylor*

Its President

SK 89061003

STATE OF MAINE  
CUMBERLAND, SS

August 24, 1989

Then personally appeared the above named *Philip H. Gordon*  
in his capacity as General Partner of Windham Properties, and  
acknowledged the foregoing instrument to be his free act and  
deed and the free act and deed of Windham Properties.

Before me,

*[Signature]*  
Notary Public

*My Commission expires 6/30/93*

SEAL

STATE OF MAINE  
CUMBERLAND, SS.

August 23, 1989

Then personally appeared the above named *Richard P. Dyke*  
in his capacity as *President* of Windham Excavating Co., and  
acknowledged the foregoing instrument to be his free act and  
deed and the free act and deed of Windham Excavating Co.

Before me,

*[Signature]*  
Notary Public

NOTARY PUBLIC  
BY COMMISSION EXPIRES

SEAL

RECEIVED  
RECORDS DEPARTMENT

1989 AUG 31 AM 9:16

CUMBERLAND COUNTY

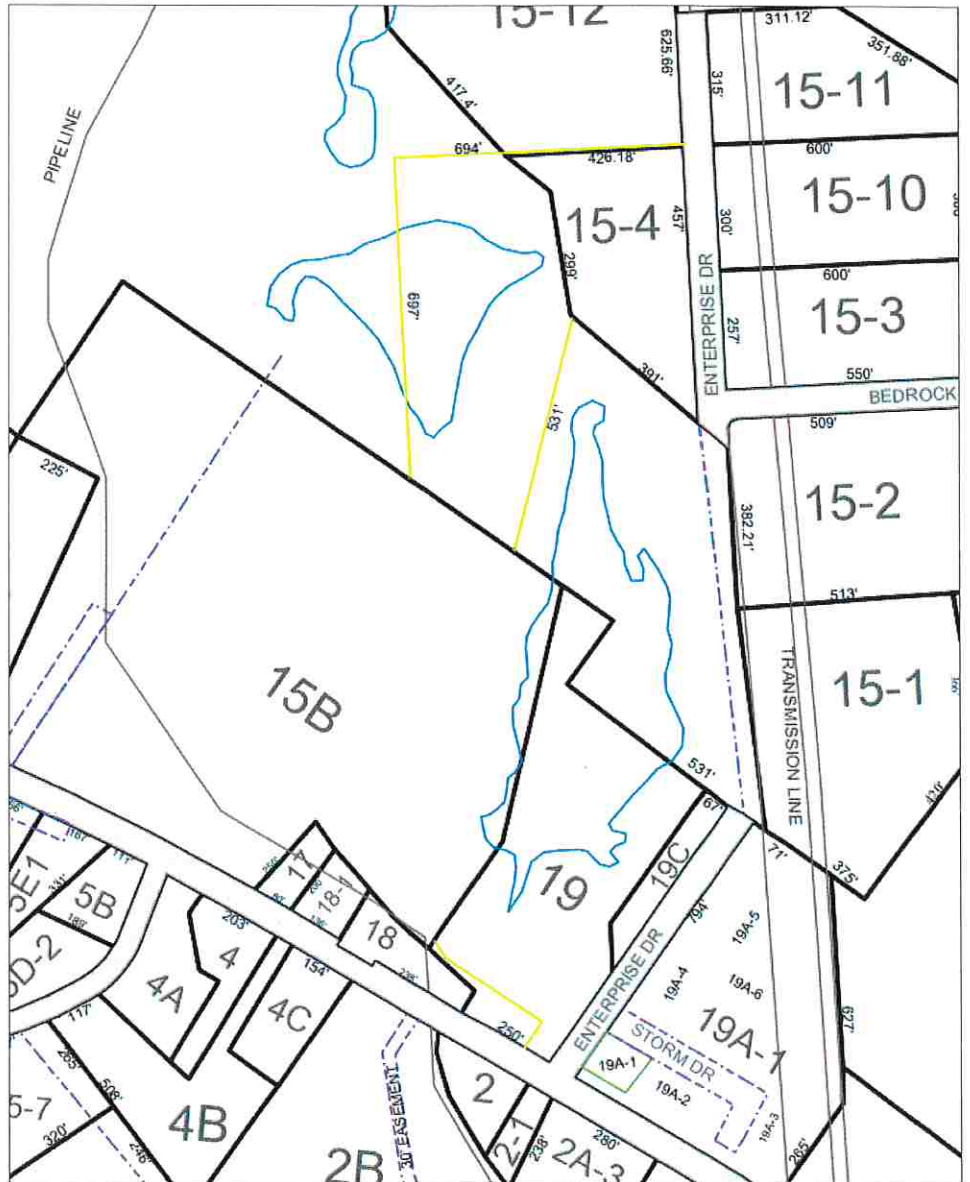
*[Signature]*

989 ROOSEVELT TR  
Map 21/ Lot 18  
989 ROOSEVELT TRAIL LLC  
61 CATO LANE  
NANTUCKET, MA 02554

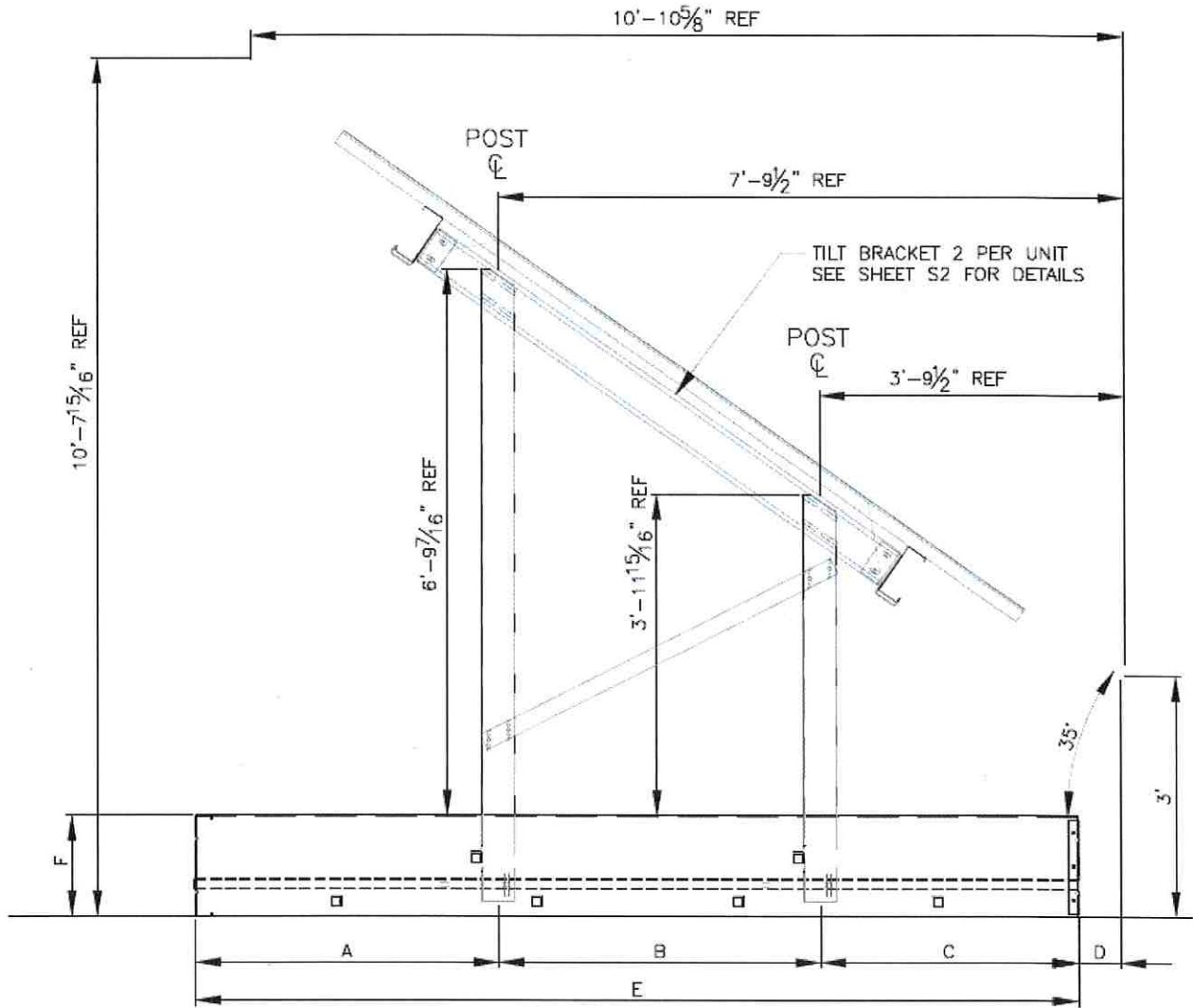
999 ROOSEVELT TR  
Map 21/ Lot 15/ B  
WINDHAM EXCAVATING COMPANY  
C/O DYKE ASSOCIATES  
PO BOX 1385  
WINDHAM, ME 04062

ENTERPRISE DR  
Map 21/ Lot 19/ C  
SAPPI NORTH AMERICA INC  
PO BOX 5000  
WESTBROOK, ME 04098

BEDROCK TERR  
Map 21/ Lot 15  
RJGF LLC  
C/O ROBERT GRONDIN  
PO BOX 869  
RAYMOND, ME 04071



BALLAST DIMENSIONS						
DIM A	DIM B	DIM C	DIM D	DIM E	DIM F	DIM G
3'-9 $\frac{1}{16}$ " REF	4'-0"	3'-2 $\frac{1}{16}$ " REF	0'-6 $\frac{1}{4}$ " REF	11'-0"	1'-3"	4'-0"



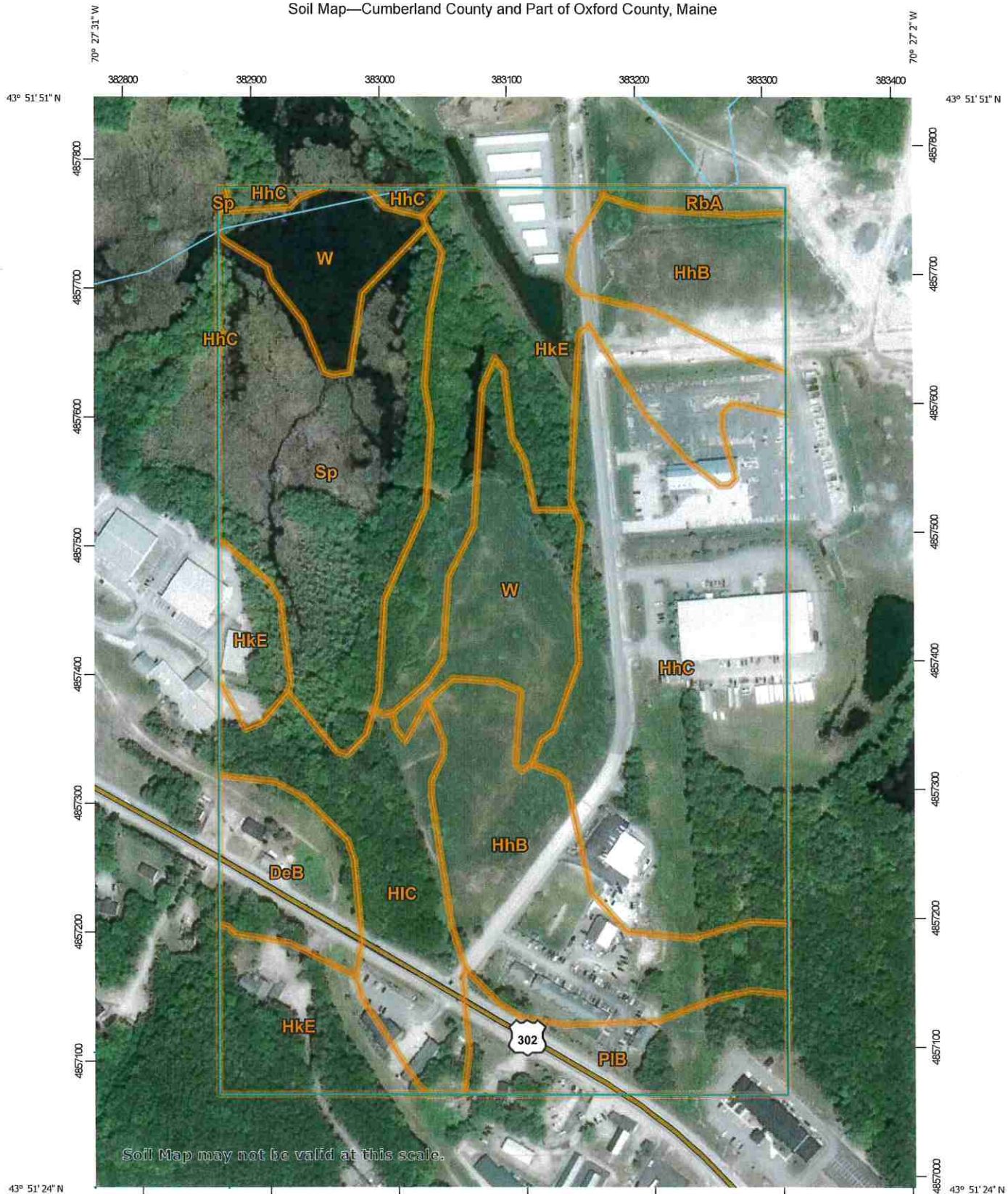
Side Profile Racking Dimensions



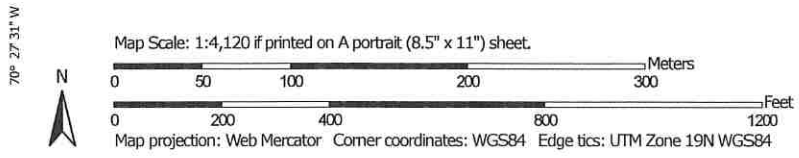




Soil Map—Cumberland County and Part of Oxford County, Maine



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
- Water Features**
  - Streams and Canals
- Transportation**
  - Rails
  - Interstate Highways
  - US Routes
  - Major Roads
  - Local Roads
- Background**
  - Aerial Photography
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

## MAP 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 16, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

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
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	3.1	4.0%
HhB	Hermon sandy loam, 0 to 8 percent slopes, very stony	12.1	15.6%
HhC	Hermon sandy loam, 8 to 15 percent slopes, very stony	17.0	22.0%
HkE	Hermon sandy loam, 20 to 60 percent slopes, extremely stony	15.6	20.2%
HIC	Hinckley loamy sand, 8 to 15 percent slopes	6.4	8.2%
PIB	Peru fine sandy loam, 0 to 8 percent slopes, very stony	4.1	5.4%
RbA	Ridgebury fine sandy loam, 0 to 3 percent slopes	0.6	0.8%
Sp	Sebago mucky peat	11.0	14.2%
W	Water	7.5	9.6%
<b>Totals for Area of Interest</b>		<b>77.5</b>	<b>100.0%</b>