



December 30, 2019

Renee Carter, Code Enforcement Officer  
Town of Naples  
P.O. Box 1757  
Naples, ME 04055  
(207) 693-6364 ext. 105

**RE: Preliminary Major Site Plan Application  
Proposed Solar Array – River Road**

ISM Solar Development, LLC (Applicant), CBJ Properties, Inc. (Property Owner)

Dear Ms. Carter and Planning Board,

On behalf of ISM Solar Development, LLC & CBJ Properties, Inc., please find the enclosed Preliminary Major Site Plan Application submission for a proposed solar array project to be constructed on a +/- 47.0 AC portion of the 79.60 AC property owned by CBJ Properties, Inc. The property is identified as Lot 41 on the Town of Naples Assessor's Map R-12. The +/- 47.0 AC solar array development area is to be located within a new Overlay Zoning District currently being created by the Town of Naples. The area of the proposed solar array is currently a commercial sand and gravel mining operation operated by CBJ, Inc. which has a Mining Facility License from Maine DEP. The property has 2 existing gravel driveways onto River Road and the proposed solar array project plans to utilize the southern existing gravel driveway as the entrance.

Site Plan Options

At this time, this application has two proposed site plan options to be discussed at the January 7<sup>th</sup> Planning Board meeting for a Sketch Plan Review. Site Plan Option 1 has the proposed solar array in the eastern portion of the property mostly within the area of mining activity and proposes solar array development within the 250' Shoreland Zone which has been previously mined. Maine DEP and the applicant prefer this option since the majority of the proposed solar array development is within an area previously disturbed. Site Plan Option 2 has the proposed solar array outside of the 250' Shoreland Zone which results in a considerably larger area of required tree clearing and a less efficient solar array configuration to avoid impacts to existing wetlands west of the area of mining activity. The applicant will discuss the pros and cons of the Site Plan Options with the Planning Board during the January 7<sup>th</sup> Sketch Plan Review and seek direction from the Board on which plan is the preferred option.

500 Southborough Dr.

Suite 105B

South Portland, Maine 04106

**Engineers | Scientists | Planners | Designers**

P 207.889.3150

F 207.253.5596



### Development Description

The Project is located within the Town of Naples in Cumberland County and will occupy approximately 47.0 acres of land that a majority is currently mined for gravel. The Project will be located on one parcel of land owned by a private landowner. The site ranges in elevation from approximately 325 feet above mean sea level (amsl) in the gravel pit to approximately 375 feet amsl in the western, forested portion of the Project. The site is bound to the north, west and south by woodland and to the east by River Road.

A berm was created along the road and will mostly obscure the Project from view. The proposed Project entrance will be at the southeast corner of the site by River Road. The proposed Project will include a perimeter fence surrounding the solar array and panels will be underlain with herbaceous vegetation. The site will consist of approximately 1,550 solar panel racks. The final number of racks installed will be based on site conditions as determined during construction. The racking system will be mounted on posts. The landscape surrounding the Project will continue to be comprised of forested lands, the berm, and the road.

Pending approvals, the Project is anticipated to start clearing in Spring 2020, followed by site civil work shortly thereafter. Installation of the solar panels and underground and above ground conductors will then be conducted after the site has been grubbed and moderately graded. ISM Solar intends to install temporary erosion control measures, build the access roads, install stormwater management features, build the facility pads and perimeter fence, pour concrete for the equipment pads and then install the racking systems and solar panels. Construction is anticipated to be completed by December 2020.

Specifically, construction of the Project will begin with establishing base lines and the site perimeter. The site will then be cleared and grubbed followed closely by installation of temporary erosion and sediment control measures such as silt fence and erosion control mix (ECM). The design of the erosion and sedimentation measures will be based on the Maine Erosion & Sediment Control Handbook for Construction: Best Management Practices (BMPs). A perimeter fence will then be installed followed by installation of the solar panels. At this point individual foundation excavations will be made, and concrete pads installed for the placement of electrical transformers and inverters. Posts will then be installed for attachment of the racks and solar panels.

The Project will not disturb any wetlands and has been sited to specifically avoid wetland impacts. As such, Army Corps and Natural Resource Protection Act permits are not required. As the Site is currently licensed to operate as a gravel pit, the Maine Department of Environmental Protection has been encouraging solar developers to site their projects in gravel pits. Based on a meeting with the Maine DEP, the permitting is anticipated to be streamlined given the site's current use. Due to the size of the project, i.e., > 20 acres, a Site Law permit will be required. An application for a Site Law permit can be extensive for a greenfield site, but in this situation, given the site's current land use, the pit can be expanded to all the areas that will be encompassed by the Project and is therefore not subject to greater impacts that what is currently licensed by the Maine DEP.



### Waivers

There are no waivers being requested at the time of this preliminary major site plan application pending the codification of the new zoning overlay being created by the Town of Naples.

### Access

The overall property has two existing gravel driveways onto River Road. The proposed solar array development plans to utilize the existing southern driveway to access the facility.

### Utilities

The proposed solar array project will require an electrical connection to the existing powerlines along River Road. No other public or private utilities are necessary.

### Signs

No signs are proposed for the project

### Soils

The area of the proposed solar array project is primarily:

- 1) AGC (Adams-Croghan) soil type which is typically 0-15% slopes, sandy and somewhat excessively draining
- 2) GP (Gravel Pit) soil type which is extremely gravelly sand

Secondary soil types within the area of the proposed solar array project are:

- 1) AdB (Adams Loamy Sand) which is typically 3-8% slopes, wooded, sandy and somewhat excessively draining
- 2) CHC (Colton-Adams) which is typically 0-15% slopes, gravelly sand and somewhat excessively draining

### Stormwater Management and Erosion Control

The project plans will include temporary and permanent erosion control and stormwater management measures. These plans will be provided at the time the applicant submits the final application for major site plan review. The design of the erosion and sedimentation measures will be based on the Maine Erosion & Sediment Control Handbook for Construction: Best Management Practices (BMPs). Due to the size of the project, i.e., > 20acres, a Site Law permit from Maine DEP will be required, but since the property has a current mining license with the DEP the approval process is anticipated to be more streamlined.

Proposed Solar Array  
Ref: 55309.00  
December 30, 2019  
Page 4



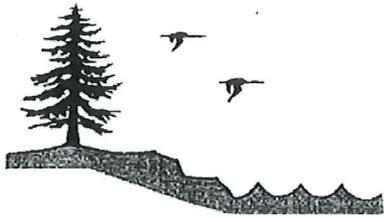
If you should have any questions, comments or require any additional information, please do not hesitate to contact us. We look forward to working with Town staff and the Planning Board on this project.

Sincerely,

VHB

A handwritten signature in blue ink, appearing to read "David T. Woodward".

David T Woodward, CLARB, PLA  
Senior Project Manager  
[dwoodward@vhb.com](mailto:dwoodward@vhb.com)



# TOWN OF NAPLES PLANNING BOARD APPLICATION

P.O. Box 1757, Naples, Maine 04055  
Phone: (207) 693-6364 / Fax: (207) 693-3667  
[www.townofnaples.org](http://www.townofnaples.org)

## Major Site Plan Review Application

Date: December 27, 2019

Owner/Applicant Name: ISM Solar Development, LLC (Applicant) Attn: Greg Lucini

Mailing Address: 940 Waterman Avenue, East Providence, Rhode Island 02914

Telephone: (401) 435-7900 Email: glucini@ismgroup.com

Property Owner: CBJ Properties, Inc.

Property Location: 30 River Road Map & Lot: R-12 Lot 41

Any easements, covenants, or deed restrictions related to the property? N/A

Zoning District: Overlay Waivers requested: None

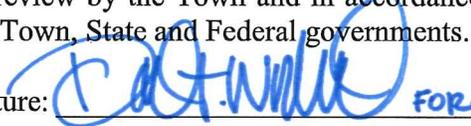
A list must be submitted for waivers

Name, address, & phone # of applicants engineer, land surveyor or planner: \_\_\_\_\_

VHB c/o David T Woodward, 500 Southborough Drive, Suite 105B, South Portland, ME 04106

(207) 536-2577 dwoodward@vhb.com

The undersigned, being the applicant, owner or legally authorized representatives, states that all information contained in this application is true and correct to the best of his/her knowledge and hereby does submit the information for review by the Town and in accordance with applicable ordinances, statues, and regulation of the Town, State and Federal governments.

Date: December 27, 2019 Signature:  FOR

Greg Lucini

### Fee Schedule:

Advertising: \$50.00 Aquatic Structure (non commercial): \$50.00

Fee per abutter: \$7.00 Review Escrow: TBD

Under 1,000 sq. ft. gross floor area: \$300.00

1,000 – 10,000 sq. ft. gross floor area: \$400.00

Over 10,000 sq. ft. gross floor area: \$400.00

\*\*Plus \$25.00 for each 1,000 sq. ft. over 10,000

Development without building: \$400.00

Modification of approved plan: \$100.00

Commercial Initial permit: \$100.00

Commercial Annual Renewal: \$50.00

Applicants Total: \$ \_\_\_\_\_

**Please include 9 copies of all supporting documents, including a letter of intent, when submitting your application to the Town Secretary. Completed applications should be received 21 days before the meeting date.**

**TOWN OF NAPLES**  
**Planning Board Checklist of Submitted Materials**  
**For**  
**SITE PLAN REVIEW**

<b>Preliminary Application</b>		Submitted by Applicant	Not Applicable	Applicant Request to be waived	Rev'd. By PB	Waived by PB
Required						
	Letter of Intent	X				
	Application form	X				
	Fees	X				
	List of any waivers requested		X			
	8 copies of plans	X				
<b>Final Application</b>						
	Site Plan (drawn at a scale sufficient to review items in section 6 of the ordinance but not more than 100 feet to the inch and showing:					
	Owners name, address and signature					
	Perimeter survey of parcel made and certified by a registered land surveyor					
	Total area of any land within 500 feet of the proposed project which is owned by the applicant					
	Zoning classifications of the property and location of zoning district boundaries if the property is located in two or more zoning districts					
	Soil types and location of soil boundaries as certified by a registered engineer or certified soil scientist					
	Location of all building setbacks as required by town ordinances					
	Location, size and character of all signs in exterior lighting					
	Lots area of the parcel, street frontage and minimum lot size and frontage					
	Location of all existing and proposed buildings, driveways, sidewalks, parking spaces, loading areas, open spaces, large trees, open drainage courses, signs, exterior lighting, service areas, easements and landscaping					
	Location of all buildings within 50 feet of the parcel and the location of intersecting roads are driveways within 200 feet of the parcel					
	Existing and proposed topography of the site at 2 foot print to war intervals if major changes to the existing topography are being proposed					
	All surface water features within 500 feet of the project boundaries including perennial streams and wetlands					
	Location and dimensions of on-site pedestrian and vehicle or vehicle dealer					

	access ways, parking areas, loading and unloading facilities, design of entrances and exits of vehicles to and from the site on to public streets, curve and sidewalks					
	Location of all Wells and septic systems within 150 feet of the property boundary					
	Existing land cover and vegetation conditions					
	Drainage plan to describe the location and size of road culprits, road drainage, ditches, phosphorus and run off control measures and other similar features					
	On-site soil and investigation report by a DHS licensed site evaluator					
	Statement from the Fire Chief that the property is accessible by present fire apparatus and detailing any additional on-site fire protection facilities required					
<b>Soil and erosion control plan app approved by the Cumberland County soil and water conservation District show when</b>						
	Existing and proposed method of handling storm water runoff					
	Direction and flow of the run off through the use of air rose					
	Location, location and size of all catch basins, dry wells, drainage ditches, Swales, retention basins and storm sewers					
	Engineering calculation used to determine drainage requirements based upon a 25 year storm frequency, if the project will significantly alter the existing patterns due to such factors such as the amount of new impervious surfaces being proposed					
	Phosphorus and analysis; required if the proposed project is within the Shoreland zone or the non-vegetative areas exceed 40,000 ft. <sup>2</sup> . If required, the analysis of prosperous loading shall utilize the methods contained in the latest revised edition of the manual underlying phosphorus control and Lake watersheds and underline, published by the main DTP, and shall require third-party review					
	A utility plan showing provisions for the water supply and wasteland disposal, including the size and location of all piping, holding tanks, leach field, etc.					
	Building plan showing all of the floors and elevations					
	Evidence of applicants right and or title to the property, and copies of any proposed or existing easements, convey ends and deed restrictions					
	Description and he sign a proposed temporary and permanent signs, including location, size and lighting					
	Copies of all required state approvals and permits					

Any of the requirements may be waived by the planning board if it is deemed that because of the special circumstances of the site as long as the burden is upon the applicant and would not adversely affect a building landowners and the general health, safety and welfare of the town. Please note any request for waivers will be requested as part of the application process, and any waivers that are granted must be listed on the final plan.

## **DECISION**

Based upon the applicant's presentation and the application materials and supporting documents submitted by the applicant, the Planning Board approved/denies the application for Major Site Plan approval.

Approval with conditions:

The application is approved, subject to the meeting the following conditions:

A. Standard conditions of approval:

1. This approval is limited to development only as described and shown on the plans and documents presented.
2. The project must comply at all times with all applicable federal, state and local approval to which it is subject.
3. Copies of all required State permits and/or letters of approval (DOT, Fire Marshall, DEP, etc.) shall be submitted to the Naples Code Enforcement Officer prior to completion of project.
4. Any required stormwater and phosphorus controls shown on the site plan must be inspected by a licensed engineer or other certified individual and a signed statement that the controls were installed as presented in the plans is to be provided to the Naples CEO prior to the building being placed in service.
5. For amendment to previously approved site plan, all previously conditions of approval, if any, shall remain in force unless explicitly changed by the Planning Board.

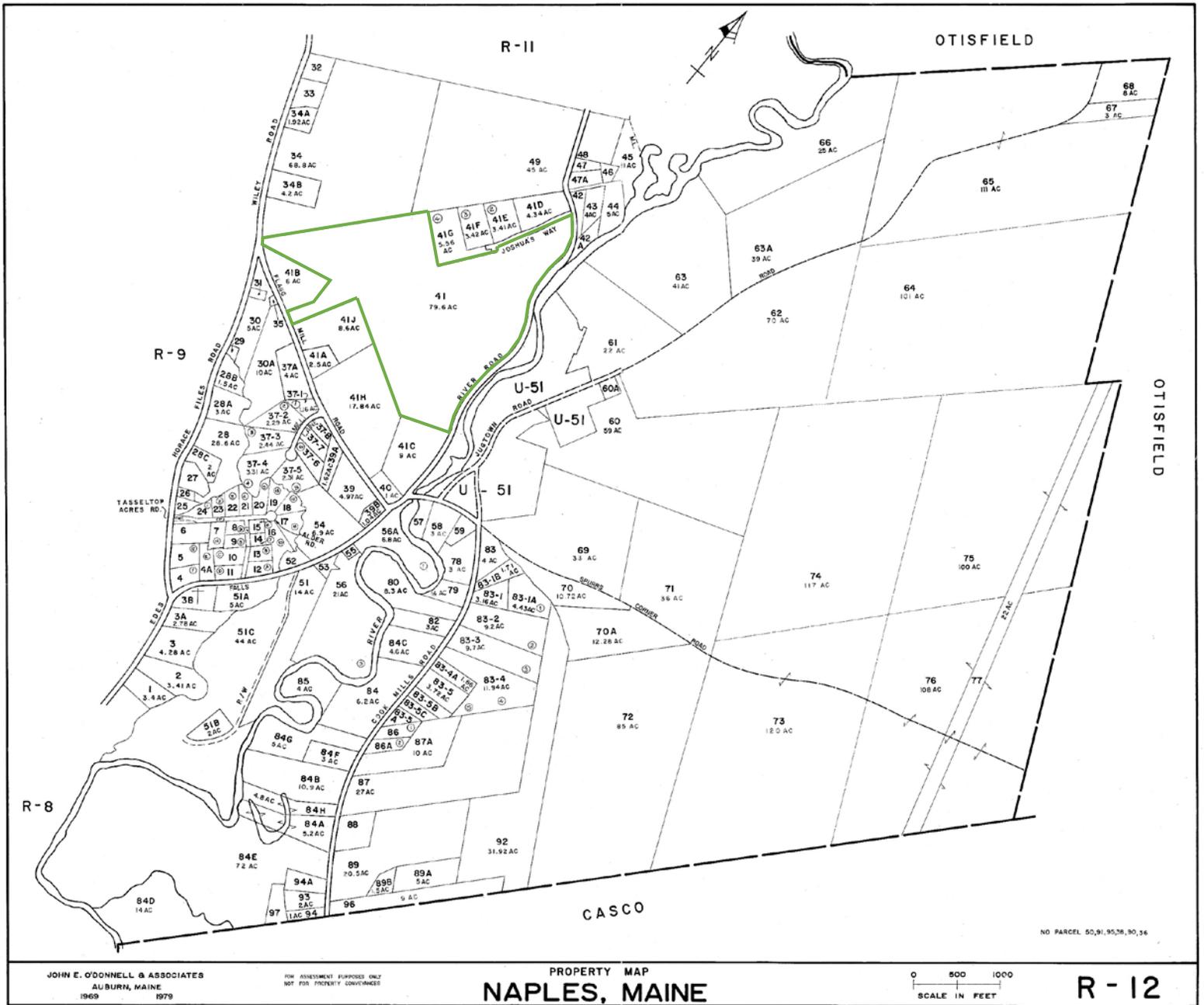
B. Project- Specific Conditions of Approval:

---

Naples Planning Board Chairman

Date:

Specific conditions of approval for this project are enumerated in Appendix I.



Property Location Map

*Warranty Deed*

*Know All Men By These Presents:*

That: William F. Whitman, both individually and as the sole shareholder of William F. Whitman, Inc., of 121 Bolsters Mills Road, Harrison, County of Cumberland and State of Maine 04040

*For Consideration Paid Grants Unto:*

CBJ Properties, Inc., a Maine corporation with a place of business at Naples, County of Cumberland and State of Maine 04055

*With Warranty Covenants the land in Naples, County of Cumberland and State of Maine, to wit:*

A certain lot or parcel of land, with the buildings thereon, being a part of the former Fickett Lot at Edes Falls, Naples, and bounded and described as follows:

Beginning on the northerly side of the town road leading from Edes Falls to Route 35 at a large stone post, said post being at the easterly side of the driveway to the old homestead; THENCE northerly along a stone wall 218 feet; THENCE westerly along a stone wall 160 feet to an iron stake; THENCE southerly along a spotted line 218 feet to a stone post on the town road; THENCE easterly along the town road 160 feet to the point of beginning.

Also another certain lot or parcel of land situated in Naples, County of Cumberland and State of Maine, bounded and described as follows:

Commence at the northeasterly corner of land of Alton E. Bell, Sr., and Hazel R. Bell conveyed to them by Frederick W. Shane et ux by deed dated November 15<sup>th</sup>, 1974 and recorded in the Cumberland County Registry of Deeds Book 3622, Page 162, at a stone wall corner and stake set in the ground; THENCE northerly by a stone wall 100 feet to an iron stake set in the ground; THENCE westerly and parallel with said Bells' northerly bound 160 feet to an iron stake set in the ground; THENCE southerly 100 feet to an iron stake set in the ground at the northwesterly corner of said Bell's other land and thence easterly by said Bell's northerly bound 160 feet to the point of beginning.

Being the same premises conveyed to William F. Whitman, Inc., by Warranty Deed of Oxford Bank and Trust, dated April 8<sup>th</sup>, 1980 and recorded in the Cumberland County Registry of Deeds in Book 4586, Page 216.

MAINE REAL ESTATE TAX PAID

Warranty Deed - Whitman to CBJ Properties, Inc.

The said William F. Whitman, Inc. is a defunct Massachusetts corporation, of which William F. Whitman, Inc. was the sole stockholder. Reference is made to an Affidavit of William F. Whitman to be recorded herewith.

Witness my hand and seal this 15<sup>th</sup> day of July, 2003

~~Witness~~

~~William F. Whitman~~  
William F. Whitman, individually

~~Witness~~

~~William F. Whitman~~  
William F. Whitman, sole  
shareholder of William F. Whitman,  
Inc.

State of Maine  
Oxford, ss.

July 15 2003

Then personally appeared the above named William F. Whitman and acknowledged the foregoing instrument to be his free act and deed,

Before me

~~Notary Public~~ - Attorney at Law

Type or print name: Robert Neault Esq

RECORDED IN THE BOOK  
JUL 23 2003 01:49:12P  
CUMBERLAND COUNTY  
JOHN B. O'BRIEN

Received  
Recorded Register of Deeds  
Jul 23, 2003 01:49:12P  
Cumberland County  
John B. O'Brien

## **Abutters List**

Map R12 , Lot 034  
CHUTE, ELIZABETH & WENTWORTH, SYLVIA  
380 WILEY ROAD  
NAPLES, ME 04055

Map R12 , Lot 034 , Sub B  
ADAMS, STEVEN  
189 SOUTH HIGH STREET  
BRIDGTON, ME 04009

Map R12 , Lot 049  
JOHNSON, CAROL & JOHNSON, MARK  
10 PARKER POND PINES  
CASCO, ME 04015

Map R12 , Lot 041 , Sub A  
KAPANTAIS, ERIC  
25 CEDAR STREET #16  
AMESBURY, MA 01913

Map R12 , Lot 041 , Sub B  
JOYCE, THOMAS JR & JOYCE, JANIE  
109 FLAGG MILL RD.  
NAPLES, ME 04055

Map R12 , Lot 041 , Sub C  
P & K SAND & GRAVEL INC  
234 CASCO RD.  
NAPLES, ME 04055

Map R12 , Lot 041 , Sub D  
PLUMMER, MATTHEW & PLUMMER, ERIN P  
19 JOSHUA'S WAY  
NAPLES, ME 04055

Map R12 , Lot 041 , Sub E  
PLUMMER, ERIN & PLUMMER, MATTHEW  
19 JOSHUA'S WAY  
NAPLES, ME 0405

Map R12 , Lot 041 , Sub F  
PLUMMER, CODY  
235 EDES FALLS RD  
NAPLES, ME 04055

Map R12 , Lot 041 , Sub G  
PLUMMER, DANIEL  
PO BOX 864  
NAPLES, ME 04055

Map R12 , Lot 041 , Sub H  
KAPANTAIS, ERIC  
25 CEDAR STREET #16  
AMESBURY, MA 01913

Map R12 , Lot 041 , Sub J  
KAPANTAIS, ERIC  
625 CEDAR STREET #16  
AMESBURY, MA 01913

Map R12 , Lot 040  
NEUBERT, KEITH A  
9 FLAGG MILL ROAD  
NAPLES, ME 04055

Map R12 , Lot 047  
HUNT, RICHARD  
161 RIVER RD  
NAPLES, ME 04055

Map R12 , Lot 047 , Sub A  
MIKOLUK, DAVID A  
73 NASHUA ST  
WOBURN, MA 01801

Map R12 , Lot 044  
MERRIMAN, PATRICK A  
25 BURGESS ROAD  
NAPLES, ME 04055

Map R12 , Lot 043  
COFFIN, DONALD E & COFFIN, CYNTHIA J  
9 BURGESS RD  
NAPLES, ME 04055

Map R12 , Lot 042  
COFFIN, DONALD E & COFFIN, CYNTHIA J  
9 BURGESS RD  
NAPLES, ME 04055

Map R12 , Lot 042 , Sub A  
SCRIBNER, DAVID  
1051 OLD MACK ROAD  
CLARKSVILLE, TN 37040

Map R12 , Lot 030  
PIERCE, DANIEL H  
125 HORACE FILES RD  
NAPLES, ME 04055

Map R12 , Lot 030 , Sub A  
GIORGIO, HAYLEY & WILLIAMS, MACAKENZIE  
860 BOSTON NECK RD.  
NARRAGANSETT, RI 02882

Map R12 , Lot 031  
CANFIELD, BONNIE M & CANFIELD, JAMES  
141 HORACE FILES RD  
NAPLES, ME 04055

Map R12 , Lot 035  
GOLTSOVA, IRINA G  
23 RUNNING HILL ROAD  
SCARBOROUGH, ME 04074

Map R12 , Lot 037 , Sub 001  
NICKELS, LAUREN & NICKELS, TIMOTHY  
PO BOX 1575  
NAPLES, ME 04055

Map R12 , Lot 037 , Sub 008  
BROWN, CHAD  
4 MILL ROAD  
NAPLES, ME 04055

Map R12 , Lot 037 , Sub A  
FOGG, BECKY & LAROCHE, LLOYD  
64 FLAGG MILL RD  
NAPLES, ME 04055

Map R12 , Lot 039  
HOME SWEET HOME APARTMENTS LLC  
51 GOULD RD  
ANDOVER, MA 01810

Map R12 , Lot 039 , Sub A  
WOODRICH, KIRK & WOODRICH, GLENN  
40 FLAGG MILL ROAD  
NAPLES, ME 04055

Map R12 , Lot 039 , Sub B  
HINCKLEY, WAYNE  
51 GOULD ROAD  
ANDOVER, MA 01810

Map R12 , Lot 061  
CAVAGNARO, JOHN & CAVAGNARO, TERESA  
9 GREENPORT ST.  
STATEN ISLAND, NY 10304

Map R09 , Lot 017  
ADAMS, NICHOLAS  
490 HARRISON RD  
NAPLES, ME 04055

Map R09 , Lot 017 , Sub A  
MONTGOMERY, SHERI  
357 WILEY RD  
NAPLES, ME 04055

Map R09 , Lot 017 , Sub B  
ADAMS, ARTHUR  
PO BOX 340  
NAPLES, ME 04055

Map R09 , Lot 012 , Sub A , Type 003  
JOHNSON, SHARON  
152 HORACE FILES ROAD  
NAPLES, ME 04055

Map R09 , Lot 012 , Sub A , Type 002  
JOHNSON, CRAIG R  
146 HORACE FILES ROAD  
NAPLES, ME 04055

Map U51 , Lot 001  
SMITH, DAVID T  
87 RIVER ROAD  
NAPLES, ME 04055

Map U51 , Lot 002  
GREENBERG, MICHAEL D  
402 PARADISE ROAD UNIT 2T  
SWAMPSCOTT, MA 01907

Map U51 , Lot 003  
PINGREE-FELTS, CHRISTOPHER  
65 RIVER ROAD  
NAPLES, ME 04055

Map U51 , Lot 004  
CBJ PROPERTIES, INC.  
217 EDES FALLS RD  
NAPLES, ME 04055

Map U51 , Lot 005  
TOWN OF NAPLES  
PO BOX 1757  
NAPLES, ME 04055

# Soil Map

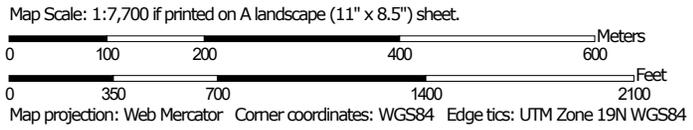
---

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

# Custom Soil Resource Report Soil Map



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 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: Apr 29, 2012—Oct 22, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdB	Adams loamy sand, 3 to 8 percent slopes, wooded	9.4	10.3%
AGC	Adams-Croghan association, 0 to 15 percent slopes	14.9	16.3%
BeC	Becket fine sandy loam, 8 to 15 percent slopes	0.3	0.3%
CHC	Colton-Adams complex, 0 to 15 percent slopes	16.4	17.9%
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	0.8	0.9%
Gp	Gravel pits	33.5	36.8%
HgC	Hermon sandy loam, 8 to 15 percent slopes	0.4	0.4%
HhB	Hermon sandy loam, 0 to 8 percent slopes, very stony	0.3	0.4%
SnB	Skerry fine sandy loam, 0 to 8 percent slopes, very stony	12.9	14.1%
SRC	Skerry-Becket association, 0 to 15 percent slopes, very stony	0.3	0.4%
WmB	Windsor loamy sand, 0 to 8 percent slopes	2.1	2.3%
<b>Totals for Area of Interest</b>		<b>91.3</b>	<b>100.0%</b>

## Map Unit Descriptions

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

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

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

## Custom Soil Resource Report

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

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

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

## Custom Soil Resource Report

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