

Three Corners Solar Project

MDEP Site Location of Development Act Permit Application

SECTION 11: SOILS

11.0 SOILS

Stantec conducted soil surveys within the Project area to document and classify soils within the proposed Project areas, identify potential limitations of the soil, and recommend corrective measures with respect to the documented soils and the proposed development at the site. Specifically, the following surveys were conducted in the following locations:

- Class B (High Intensity Level) survey and mapping within the proposed O&M building and collection substation area
- Class C (Medium High Intensity Level) survey and mapping in proposed solar array areas and Collector lines
- Class L (Linear Level) survey and mapping within the Genlead corridor and associated access routes

The soil survey report is provided as Exhibit 11-1. Soil survey results indicate that, in some areas, this site could require engineered designs to address the limiting factors (e.g., soil with shallow bedrock and surface and subsurface stoniness and boulders) for the proposed Project. However, with proper planning, engineering, and construction techniques, the soils present are suitable for the proposed Project and are not significantly dissimilar than limitations at other successfully developed solar projects constructed in Maine.

Three Corners Solar Project

MDEP Site Location of Development Act Permit Application

SECTION 11: SOILS

Exhibit 11-1

Three Corners Solar Soils Survey Report



3 Corners Solar Project

Soil Survey Report:

Class B: Substation and Operations and Maintenance Building

Class C: Panel Array

Class L: Transmission Line and Proposed Access

December 23, 2021

Prepared for:

3 Corners Solar, LLC
30 Danforth Street, Suite 201
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Sign-off Sheet

The accompanying soil profile descriptions and soil survey maps, and this soil narrative report entitled “3 Corners Solar Project Soil Survey Report”, dated December 23, 2021, were completed in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, February 1995, as amended, and prepared by Rodney D. Kelshaw LSS #552.

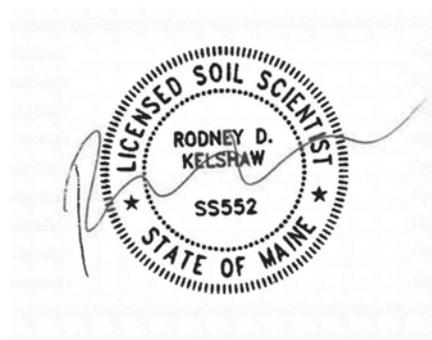


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SOIL SURVEY REPORT

December 23, 2021

1.0 INTRODUCTION

At the request of 3 Corners Solar, LLC, Stantec Consulting Services Inc. (Stantec) completed a soil survey for the proposed 3 Corners Solar Project (Project) in Benton, Clinton, and Unity Township, Maine. The Project consists of the panel array located in Benton, Clinton, and Unity Township; and the associated transmission line, substation, and operations and maintenance (O&M) building in Benton, Maine.

This soil survey report is designed to provide information on the ability or limitation of the soil to support the proposed planned use(s) at this site. The soil survey methods and this report were developed to meet the typical requirements of the Maine Department of Environmental Protection Site Location of Development Act.¹ This soil survey was developed through a compilation of on-site soil and wetland investigation data and supported by publicly available information from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys for Kennebec County.²

2.0 PROJECT SITE DESCRIPTION

The Project is located in the towns of Benton, Clinton, and the unorganized Unity Township in Kennebec County, Maine (Figure 1). The proposed solar array spans into each of these municipalities and is situated north of Unity Road (Route 139), southeast of the Sebasticook River, and east of Fifteenmile Stream. The proposed substation and O&M building are situated in Benton along Bessey Lane, north of Unity Road and south of an existing transmission line. The proposed transmission line corridor is wholly located in Benton and begins at the Albion Road Substation and generally extends to the east approximately 2.1 miles before turning north and extending for approximately 3.1 miles to its terminus at the existing transmission line north of Unity Road. The proposed transmission line corridor crosses Richards Road, East Benton Road, Bog Road, Unity Road, and Bessey Lane. Fifteenmile Stream flows from west to east across the central portion of the proposed transmission line corridor.

The Project site is within a rural setting that is primarily forested, except for a few agricultural fields, and paved and unpaved roads. Bessey Lane, an unpaved gravel road used for forest management and camp access extends north through the proposed panel array. Several of the proposed transmission line access roads are existing gravel roads or improved roads used to gain access to back land for camps, timber management, and agriculture. There are also several large open water and emergent marsh wetland complexes within the Project site. The topography undulates throughout the Project site, consisting of numerous knolls and valleys, with elevations ranging from approximately 130 feet at the

¹ State of Maine, Bureau of Land and Water Quality, Department of Environmental Protection Site Location of Development 38 M.R.S.A. §§ 481-490, Revised October 2015

² Source: NRCS Web Soil Survey URL: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>; Version: 19, and reviewed September 11, 2020.



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Fifteen Mile Stream proposed transmission line crossing to approximately 320 feet in the northeastern section of the proposed panel array.

The site is located in the Level IV Ecoregion 82e “Central Maine Embayment³”. This section of Maine has a unique history of geologic and soil forming processes that resulted in an interspersed of soil parent materials and phases of soil development. According to the NRCS Kennebec County soil survey:

Marine, lacustrine, sand, and gravel terraces occur throughout the county at lower elevations, especially along the Kennebec River. Glacial till ridges also occur throughout the county but are mainly concentrated in the western and eastern areas. Many of the soils that formed in marine and lacustrine sediments are used for forage crop production and often need additional drainage and measures to control erosion. Many of the glacial till soils have a firm underlying material that limits internal drainage; surface or tile drains help remove excess water.

Forested upland areas are dominated by red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), eastern hemlock (*Tsuga canadensis*), eastern white pine (*Pinus strobus*), balsam fir (*Abies balsamea*), red maple (*Acer rubrum*), eastern arborvitae (*Thuja occidentalis*), red spruce (*Picea rubens*), green ash (*Fraxinus pennsylvanica*), and yellow birch (*Betula alleghaniensis*). Some areas of recent timber harvests have resulted in early successional and regenerating forest communities consisting of saplings and seedlings of the previously listed tree species as well as quaking aspen (*Populus tremuloides*), speckled alder (*Alnus incana*), and red raspberry (*Rubus idaeus*). The herbaceous layer includes bracken fern (*Pteridium aquilinum*), hay scented fern (*Dennstaedtia punctilobula*), lowbush blueberry (*Vaccinium angustifolium*), and Canadian bunchberry (*Cornus canadensis*). Dominant vegetation in wetlands is highly variable and primarily dependent on hydrology. This range in vegetation includes open water emergent species, emergent marsh/wet meadow, scrub shrub, and forested wetlands. Additional tree species in the wetlands includes American elm (*Ulmus americana*), black ash (*Fraxinus nigra*), and balsam poplar (*Populus balsamifera*).

3.0 PURPOSE

The purpose of the soil survey is to provide project engineers with site-specific soil information to aid in the project design and to meet regulatory requirements. This report describes the identified soil properties that could be limitations to the project design. Examples of potential limitations include soil drainage, depth to bedrock, surface boulders, and physical or chemical properties that could limit specific uses. Hydrologic Soil Group ratings and soil drainage classes, which are derived from information obtained from the on-site investigation, are required to develop stormwater control plans.

A soil survey is tailored to the specific project; as such, the report may not be suitable for planning of other project types because the soil limitations and properties that are suitable for one proposed

³ Griffith, G.E., J.M. Omernik, S.A. Bryce, J. Royte, W.D. Hoar, J. Homer, D. Keirstead, K.J. Metzler, and G. Hellyer. 2009, Ecoregions of New England (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,325,000).



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development may not be suitable for another. Potential limitations for development identified in this report are intended for this specific Project and should not be used for other purposes.

4.0 METHODS

4.1 STANDARDS

This report and associated maps were completed in accordance with the standards adopted by the Maine Association of Professional Soil Scientists (MAPSS) in the “*Guidelines for Maine Certified Soil Scientists for Soils Identification and Mapping*” (revised 2009)⁴ and follows the standards detailed in the USDA NRCS “*Soil Survey Manual*”⁵. Soils are described using the standard soil terminology developed by the USDA NRCS and the MAPSS Key to Soil Drainage Classes, as well as a list of regional indicators for identification of hydric soils *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regional Supplement*⁶ and the *Field Indicators for Identifying Hydric Soils in New England, Version 4*⁷.

A State of Maine Licensed Soil Scientist (LSS) conducted the on-site soil survey in phases from September through November 2020. Three soil survey classes were completed in different areas based on the proposed Project design.

- Class B (High Intensity) soil survey for the proposed substation.
- Class C (Medium-High Intensity) for the proposed solar array areas and new access road locations.
- Class L soil survey (Linear) for the proposed electrical collection and transmission lines.

A wetland delineation was completed within the entire area surveyed for soils. However, there are portions of the Project site where the wetland delineation was conducted that the soil survey was not, such as large wetland areas where there is no proposed development. The wetland delineations were performed prior to and/or in conjunction with the on-site soil survey.

4.2 ON-SITE INVESTIGATIONS

4.2.1 Proposed Transmission Line, Substation and O&M Building

Stantec conducted a wetland and watercourse delineation of approximately 5.3 miles of proposed transmission line corridor that varied in width extending from the proposed Bessey Lane collection substation to the existing Albion Road substation point of interconnect. This included delineation of

⁴ Maine Association of Professional Soil Scientists. 2009. *Guidelines for Maine Certified Soil Scientists for Soils Identification and Mapping*.

⁵ Soil Science Division Staff. 2017. *Soil Survey Manual*, ed. C. Ditzler, K.Scheffe, and H.C. Monger, USDA Handbook 18. Government Printing Office, Washington, D.C.

⁶ U.S. Army Corps of Engineers. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

⁷ New England Hydric Soils Technical Committee. 2019 Version 4, *Field Indicators for Identifying Hydric Soils in New England*. New England Interstate Water Pollution Control Commission, Lowell, MA.



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approximately 2 miles of existing access roads, 75 feet from edge of gravel on either side. The total delineation area was approximately 414 acres. The Wetland and Watercourse Delineation Report, dated October 13, 2020, summarizes the methods and results of the wetland and watercourse delineation.⁸

Soil properties were observed during the wetland delineation with enough specificity to make accurate wetland boundary determinations and thus delineate the hydric soil boundaries. This process included multiple auger borings along the wetland boundaries in both the wetland and uplands where soil texture, parent material, and drainage class were observed. Soil survey location data was collected with a mapping grade Global Positioning System (GPS). Features located with the GPS included test pits, hand auger borings, U.S. Army Corps of Engineers wetland paired data plots and observed bedrock outcrops. However, not all test pit and auger boring locations were GPS located.

4.2.2 Proposed Panel Array

Boyle Associates performed the wetland delineation for the proposed solar array area prior to initiation of the soil survey fieldwork. To increase efficiency and accuracy of the soil survey, Boyle Associates shapefile data for wetland boundaries and watercourse locations was provided to Stantec, which were used to aid in the determination of hydric soil boundaries, surface water flow and soil series/map units. The LSS observed the delineated wetland and watercourse feature boundaries on-site and dug additional test pits and auger borings in several wetlands to obtain additional detailed soil information.

4.2.3 Data Collection

An iPad equipped with a mapping grade GPS was loaded with base layers that included an aerial photograph, topography, NRCS soil boundaries, Project site boundaries, proposed project infrastructure, soil survey and wetland delineation investigation limits, and on-site identified wetlands and watercourses. This information was used in the field for both site orientation and data collection.

Fieldwork consisted of documenting soil morphology and characteristics with hand dug test pits, hand auger borings, and existing ditch cuts and borrow areas. Investigations extended to a depth of bedrock, refusal, or limit of the hand auger or hand probe. Other factors used to determine soil characteristics included changes in vegetation, slope, aspect, and observations of surface stones. Test pits, map unit boundaries, observed bedrock, some boring locations, and other pertinent site features were located in the field using the mapping grade GPS enabled iPad. Test pit locations were chosen where representative soil descriptions could be collected to determine the soil series or phase. To develop the soil survey maps included in this report, additional auger borings and observed changes in topography were used to determine the soil series and map unit boundaries. In areas where the slope observed on-site did not appear to be consistent with publicly available contour information the map unit slopes assigned are consistent with the on-site slope observations.

⁸ Stantec Consulting Services Inc. 2021. Wetland and Watercourse Delineation Report: Proposed Transmission Line and Construction Access Routes: Benton, Maine. Prepared for 3 Corners Solar, LLC.



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Identified soil types are depicted on the proposed Project site plans at a scale of 1-inch equals 100 feet for the Class B survey area (Figure 2), 1-inch equals 200 feet for the Class L survey areas (Figures 3-1 to 3-8), and at a scale of 1-inch equals 500 feet for the Class C survey area (Figures 4-1 to 4-16).

5.0 Soil Map and Map Unit Description

5.1 SOIL MAP REQUIREMENTS

Class B (High Intensity) standards were developed to provide information for proposed projects with intensive uses where hydric soil boundaries or the location of suitable areas for moderate to heavy soil disturbance require site specific soil information. Less intensive uses only need a medium high intensity soil survey (Class C). The Class L (for Linear Projects) standards were developed by MAPSS to provide minimum soil information necessary to allow for the design and construction of long but narrow projects with little or no adjacent development. These standards were the basis of this soil survey and are detailed in Appendix D: MAPSS Standards for Soil Surveys. The accompanying soil figures/maps meet the requirements of Class B, C, and L soil surveys, as outlined by the MAPSS Guidelines. The soil survey map units are designed according to the standards of the National Cooperative Soil Survey. The soils are classified at the series level according to the current Keys to Soil Taxonomy. Soil map units depicted on maps and described in this report are phases of soil series.

5.2 SOIL MAP UNITS

Soil map unit boundaries are depicted on the accompanying soil survey maps. Each map unit may be composed of the named soil and smaller areas of other soil series or phases (inclusions). Most inclusions have properties or patterns that are similar to those of the dominant soil in the map unit and generally do not affect use and management.

A soil survey map unit consists of a portion of the landscape composed of the identified soil and associated landscape properties, such as similar topography, aspect, configuration, stoniness, vegetation, depth to seasonal groundwater table, depth to bedrock, depth to impermeable layer, soil texture and color (soil horizons) and miscellaneous land area. The area enclosed by a map unit boundary has a minimum of 75% of the soil(s) that provide the name of that map unit or similar soil (i.e., soils that differ so little from the named soil(s) in the map unit that there are no important differences in interpretations). No inclusion is greater in size than the named soil(s). The total amount of dissimilar soils (soils that differ sufficiently from the named soil(s) to affect major interpretations) do not exceed 25% of the map unit.

6.0 SOIL SURVEY FINDINGS

Soil test pit data is included on the Soil Conditions Summary Table (Form E) as Appendix A and the Test Pit/Auger Boring Logs (Form F) as Appendix B. Appendix C are the Soil Map Unit Descriptions,



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Appendix D are the MAPSS Soil Survey standards, and Appendix E is a Glossary of terms. The attached Map Unit Descriptions describe soil physical properties and how they may affect Project design, construction, and operations.

6.1 CLASS B SOIL SURVEY: PROPOSED SUBSTATION

The Class B soil survey area encompasses approximately 5.7 acres and was conducted for the proposed substation and O&M building area (Figure 2). It is located north of Unity Road, between Unity Road and the existing electricity utility line. The site is a mix of natural, mixed-wood forest, and an area cleared of trees and replanted with coniferous saplings.

The site is encompassed within four map units: Brayton very stony fine sandy loam: 0-3% slopes (slope group A), Colonel/Peru Complex: 3-8% slopes (slope group B), Peru/Colonel Complex: 3-8% slopes (slope group B), and Tunbridge/Lyman Complex: 8-15% slopes (slope group C). The Class B Soil Survey Map (Figure 2) is included as a report attachment. See the attached Map Unit Descriptions in conjunction with the attached figures to see where these soils occur to determine site specific potential limitations.

6.1.1 Brayton Stony Fine Sandy Loam (BrA)

The Brayton series is shallow to a dense substratum yet very deep to bedrock. It formed in loamy lodgement till and is situated in depressions and on toeslopes. They are poorly drained (hydric) soils and are mapped as wetland. The dense, shallow substratum produces a condition with a water table at or near the soil surface which could create limiting factors such as rutting, drainage issues, and frost action.

6.1.2 Colonel/Peru Complex (CpB)

The Colonel and Peru series are shallow to a dense substratum yet very deep to bedrock. They formed in loamy lodgement till and are situated on till plains, ridges and sideslopes. Peru soils are moderately well drained and Colonel soils are somewhat poorly drained. The dense, shallow substratum typically produces a condition with a water table close to the soil surface which could create limiting factors such as rutting, drainage issues, and frost action. The pit and mound land surface creates microtopography that is so interspersed the somewhat poorly drained Colonel cannot be separated from the moderately well drained Peru. In this map unit there are more pits than mounds, resulting in more somewhat poorly drained soil than the PcB map unit.

6.1.3 Peru/Colonel Complex (PcB)

The Peru and Colonel series are shallow to a dense substratum yet very deep to bedrock. They formed in loamy lodgement till and are situated on till plains, ridges and sideslopes. Peru soils are moderately well drained and Colonel soils are somewhat poorly drained. Since this map unit is located adjacent to the Tunbridge/Lyman complex it is assumed there is some overlap and there could be areas with soil that has bedrock closer to the soil surface. The dense, shallow substratum typically produces a condition with a water table close to the soil surface which could create limiting factors such as rutting, drainage issues, and frost action. The pit and mound land surface creates microtopography that is so interspersed the



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somewhat poorly drained Colonel cannot be separated from the moderately well drained Peru. In this map unit there are more mounds than pits resulting in better drained soil than the CpB map unit.

6.1.4 Tunbridge/Lyman Complex (TIC)

The Tunbridge series consists of well drained, moderately deep soils. The Lyman series consists somewhat excessively drained, shallow soils. They formed in loamy, supraglacial till and are situated on glaciated uplands on ridgetops and sideslopes. A bedrock outcrop was observed within the existing electrical distribution line to the north of the site and bedrock was observed to be within 40 inches of the soil surface. The mapped soils do not appear to have physical or chemical properties that would have a significant negative effect for the proposed Project planned for this area. Depth to bedrock appears to be the most limiting factor, which can be overcome by blasting or other engineering techniques.

6.2 CLASS C SOIL SURVEY: PROPOSED SOLAR PANEL ARRAY

The Class C soil survey encompassed approximately 1096-acres and was conducted for the proposed solar panel array area (Figures 3-1 to 3-8). These figures depict the Class C soil survey boundary overlaid onto an aerial photograph. The wetland data depicted on these plans is the on-site wetland delineation for this proposed Project. On-site soils identified were formed through multiple, active geologic process. The evidence suggests that glaciers advanced and receded multiple times and resulted in a combination of dense glacial till and supraglacial melt out till where debris carried by the glacier melted out in place and draped across the landscape. When the sea level encroached landward from its current location and was within the Project boundary it deposited marine and lacustrine sediments in low-lying plains and valleys. Some of these areas also contain swamps and bogs with deep organic surface soil. This also resulted in areas where soil parent materials are mixed and do not fit into a named soil series. An example of this is along some valley toeslopes where silty clay marine sediments are draped over very stony sandy loam, dense glacial till. It also resulted in some areas where a thin mantle of very stony sandy loam surface is draped across marine sediment silt loam parent material. See the attached Map Unit Descriptions in conjunction with the attached figures to see where these soils occur and determine site specific potential limitations.

6.3 CLASS L SOIL SURVEY: PROPOSED TRANSMISSION LINE

The Class L soil survey encompassed approximately 415-acres and was conducted for the proposed transmission line (Figures 4-1 to 4-16). The wetland data depicted on these plans is the on-site wetland delineation for this proposed Project. On-site soils identified were formed through multiple, active geologic process and described earlier in this report. See the attached Map Unit Descriptions in conjunction with the attached figures to see where these soils occur and determine site specific potential limitations.



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7.0 CONCLUSIONS AND SURVEY LIMITATIONS

Results of this soil survey conclude that in some areas this site could require engineered designs to address the limiting factors for the proposed solar power generating facility. However, with proper planning, engineering, and construction techniques, the soils present are suitable for the proposed Project and are not significantly dissimilar than limitations at other successfully developed solar power projects constructed in Maine. The most limiting factors at this site are high water tables and lateral surface flow in some non-wetland areas, areas with soil shallow bedrock, and surface and subsurface stoniness and boulders. The soil drainage in poorly and somewhat poorly drained soil can also be a concern for construction and long-term Project use, such as rutting, freeze/thaw cycles, and other issues associated with a high-water table.

Increasing the impervious area can increase stormwater surface flow quantity and velocity. Engineering techniques to control stormwater flow and runoff during construction will be important to minimize the potential for impacts to downslope resources. Long-term engineering controls that can be utilized include vegetated buffers and structures that do not constrict surface and subsurface flow.

The scope of this investigation was conducted in accordance with the Class B, C, and L soil survey standards and guidelines established by MAPSS. The conclusions and recommendations presented in this soil report are based on data obtained from on-site investigation and supplemental USDA NRCS soil maps and information. This soil report and associated soil figures were prepared for exclusive use by 3 Corners Solar, LLC, for specific application to their proposed construction of the 3 Corners Solar Project.



December 23, 2021

FIGURES



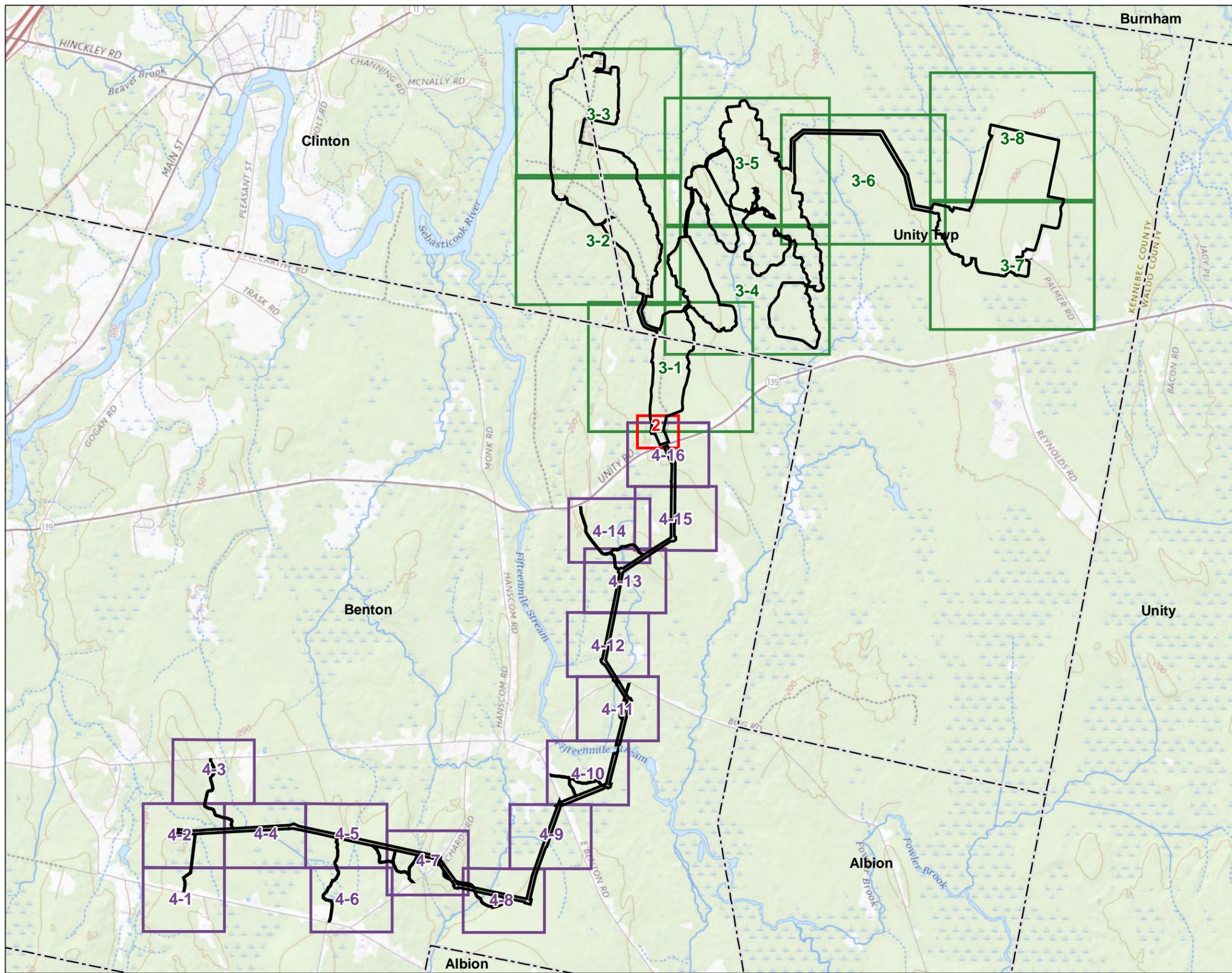
SOIL SURVEY REPORT

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Figure 1. Site Location Map



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Legend

- Limit of Disturbance
- Class B Soil Survey Map Extents
- Class C Soil Survey Map Extents
- Class L Soil Survey Map Extents
- Town Boundary



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 (At original document size of 11x17)
 1:36,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 19N
2. Background: The USGS National Map



Project Location
Benton, Maine

Prepared by GC on 2021-12-22
TR Review by RDK on 2021-12-23
IR Review by EB on 2021-12-23

Client/Project
Three Corners Solar Project

195601453

Figure No.

1

Title

Project Location Map

SOIL SURVEY REPORT

December 23, 2021

Figure 2. Class B Soil Survey Map

Class B Soil Survey Figure Map Unit Boundary Legend		
Map Unit Symbol	Map Unit Name	HSG
BrA	Brayton vstfsl, 0-3% slopes	D
CpB	Colonel/Peru Complex, 3-8% slopes	C/D
PcB	Peru/Colonel Complex, 3-8% slopes	C/D
TIC	Tunbridge/Lyman Complex, 8-15% slopes	C/D



Legend

- 2' Contours
- Test Pit
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- ▭ Soil Survey Area
- ⊠ Collection Substation
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



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 (At original document size of 11x17)
 1:1,200

Notes

1. Coordinate System: NAD 1983 UTM Zone 19N
2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec in July 2020.
3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-22
 TR Review by RDK on 2021-12-23
 IR Review by EB on 2021-12-23

Client/Project
 Three Corners Solar Project

195601453

Figure No.

2

Title

**Collection Substation and O&M Building
 Class B Soil Survey Map**



SOIL SURVEY REPORT

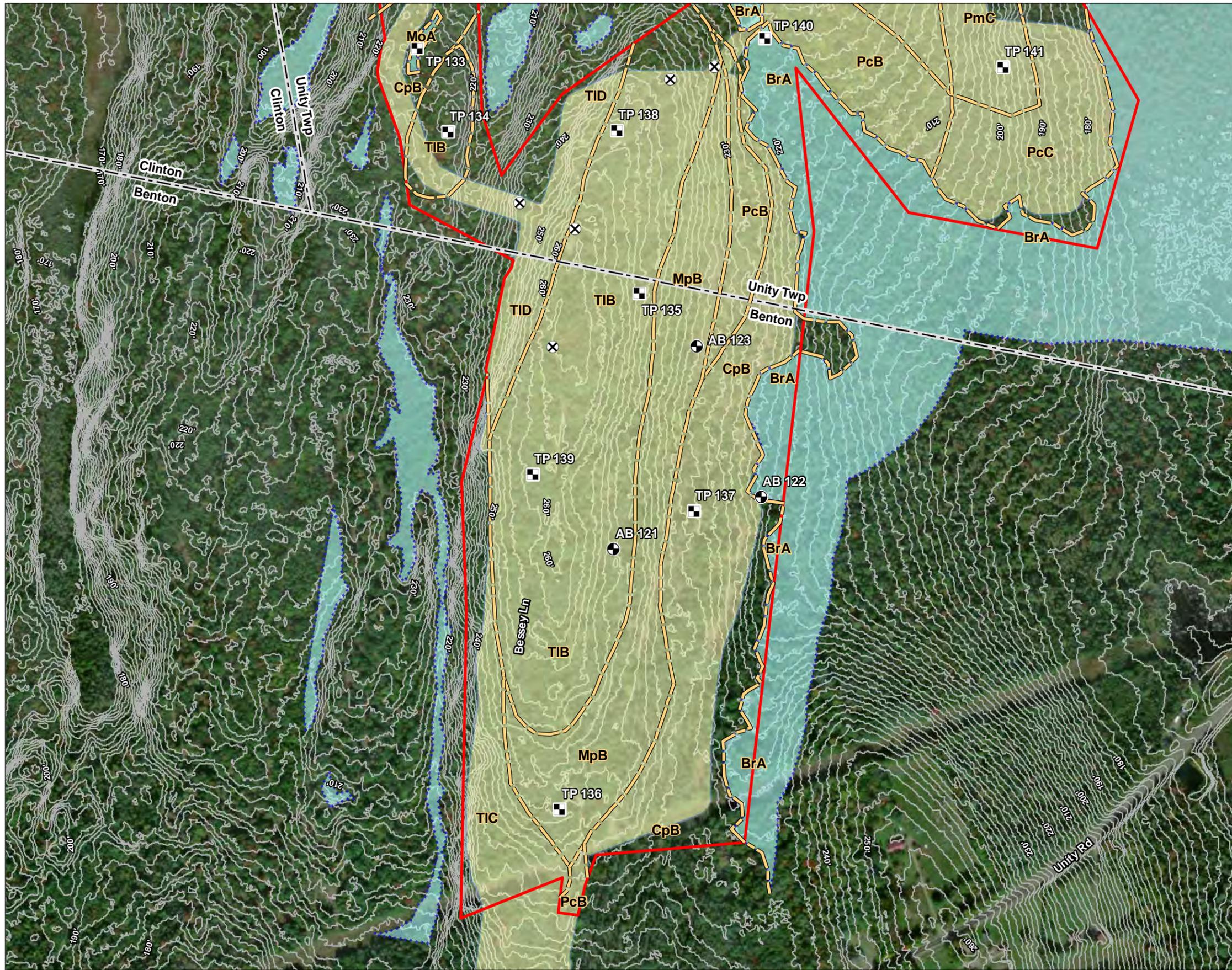
December 23, 2021

Figures 3-1 to 3-8. Class C Soil Survey Maps

Class C Soil Survey Figure Map Unit Boundary Legend		
Map Unit Symbol	Map Unit Name	HSG
BmA	Burnham/Monarda Complex, 0-3% slopes	D
BrA	Brayton vstfsl, 0-3% slopes	D
BsA	Biddeford/Scantic Complex, 0-3% slopes	D
CoB	Colonel stsl, 3-8% slopes	D
CpA	Colonel/Peru Complex, 0-3% slopes	C/D
CpB	Colonel/Peru Complex, 3-8% slopes	C/D
CpC	Colonel/Peru Complex, 8-15% slopes	C/D
CsB	Colton ls, 3-8% slopes	A
LyC	Lyman fsl, 8-15% slopes	D
MoA	Monarda sil, 0-3% slopes	D
MoC	Monarda sil, 8-15% slopes	D
MpA	Marlow/Peru Complex, 0-3% slopes	C/D
MpB	Marlow/Peru Complex, 3-8% slopes	C/D
PcB	Peru/Colonel Complex, 3-8% slopes	C/D
PcC	Peru/Colonel Complex, 8-15% slopes	C/D
PeA	Peacham mucky peat, 0-3% slopes	D
PmB	Peru/Marlow Complex, 3-8% slopes	C/D
PmC	Peru/Marlow Complex, 8-15% slopes	C/D
ScA	Scantic sil, 0-3% slopes	D
TcB	Telos/Chesuncook Complex, 3-8% slopes	C/D
TIA	Tunbridge/Lyman Complex, 0-3% slopes	C/D
TIB	Tunbridge/Lyman Complex, 3-8% slopes	C/D
TIC	Tunbridge/Lyman Complex, 8-15% slopes	C/D
TID	Tunbridge/Lyman Complex, 15-35% slopes	C/D



V:\195601453\03_data\gis_cad\gis\mxd\Site\Report\01453_03_Array_ClassC_2021.mxd Revised: 2022-01-03 By: garpenter



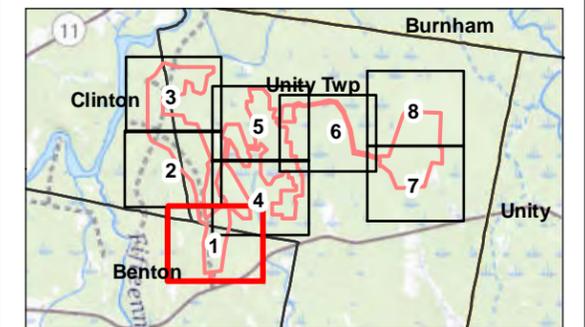
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- Delineated Stream
- ⋯ Delineated Wetland
- ▭ Class C Soil Survey
- ▭ Town Boundary
- ▭ Proposed Project
- PbA Map Unit Symbol



0 500 Feet
 (At original document size of 11x17)
 1:4,800

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Clinton, Unity Twp, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

Client/Project
 3 Corners Solar Project

195601453

Figure No.

3-1

Title

**Array Area
 Class C Soil Survey Map**

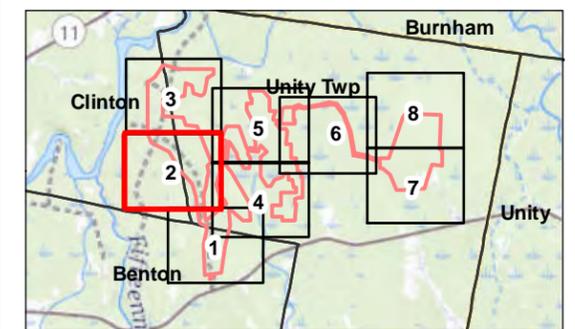
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- Delineated Stream
- ⋯ Delineated Wetland
- ▭ Class C Soil Survey
- ▭ Town Boundary
- ▭ Proposed Project
- PbA** Map Unit Symbol



0 500 Feet
 (At original document size of 11x17)
 1:4,800

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
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Client/Project
 3 Corners Solar Project

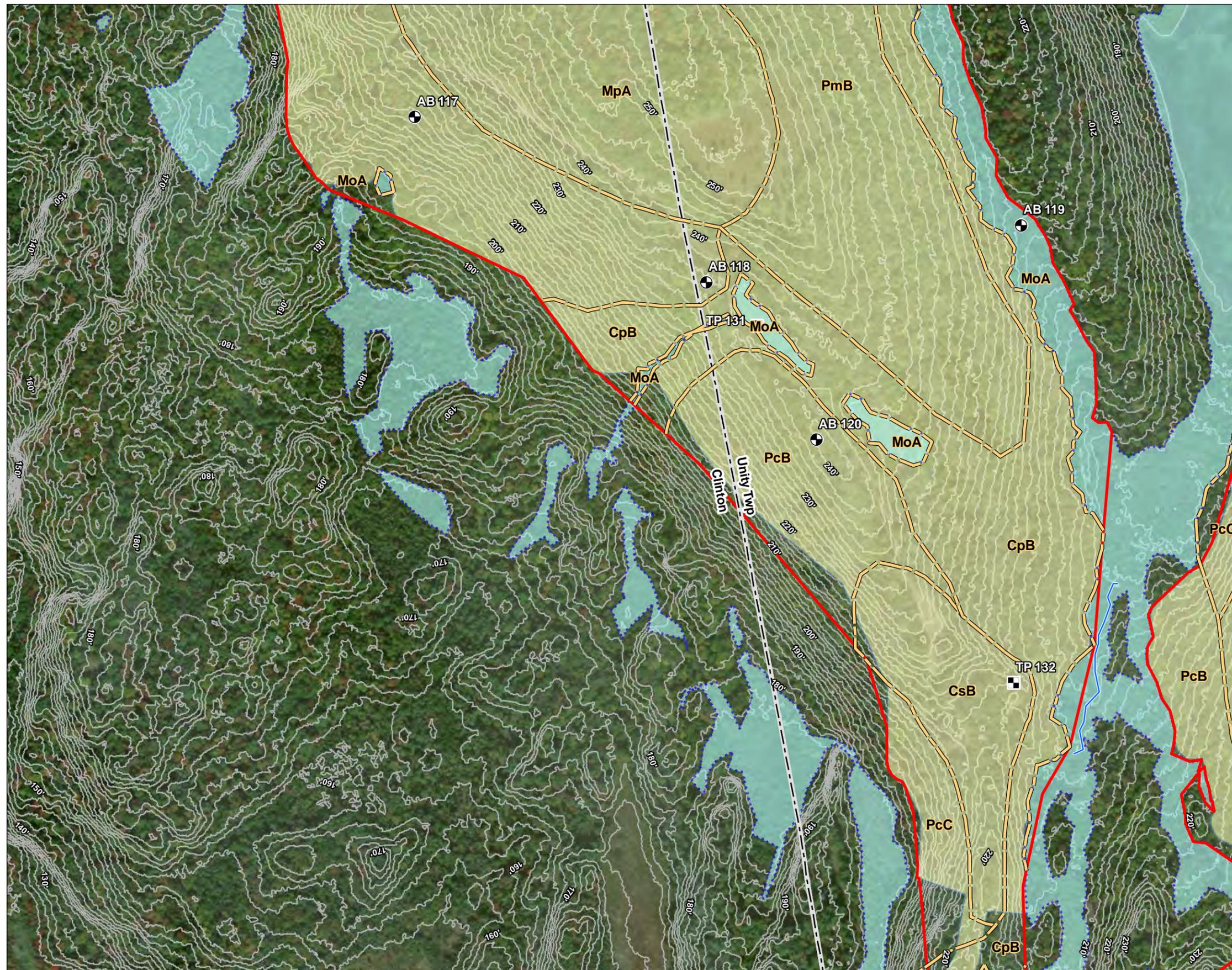
195601453

Figure No.

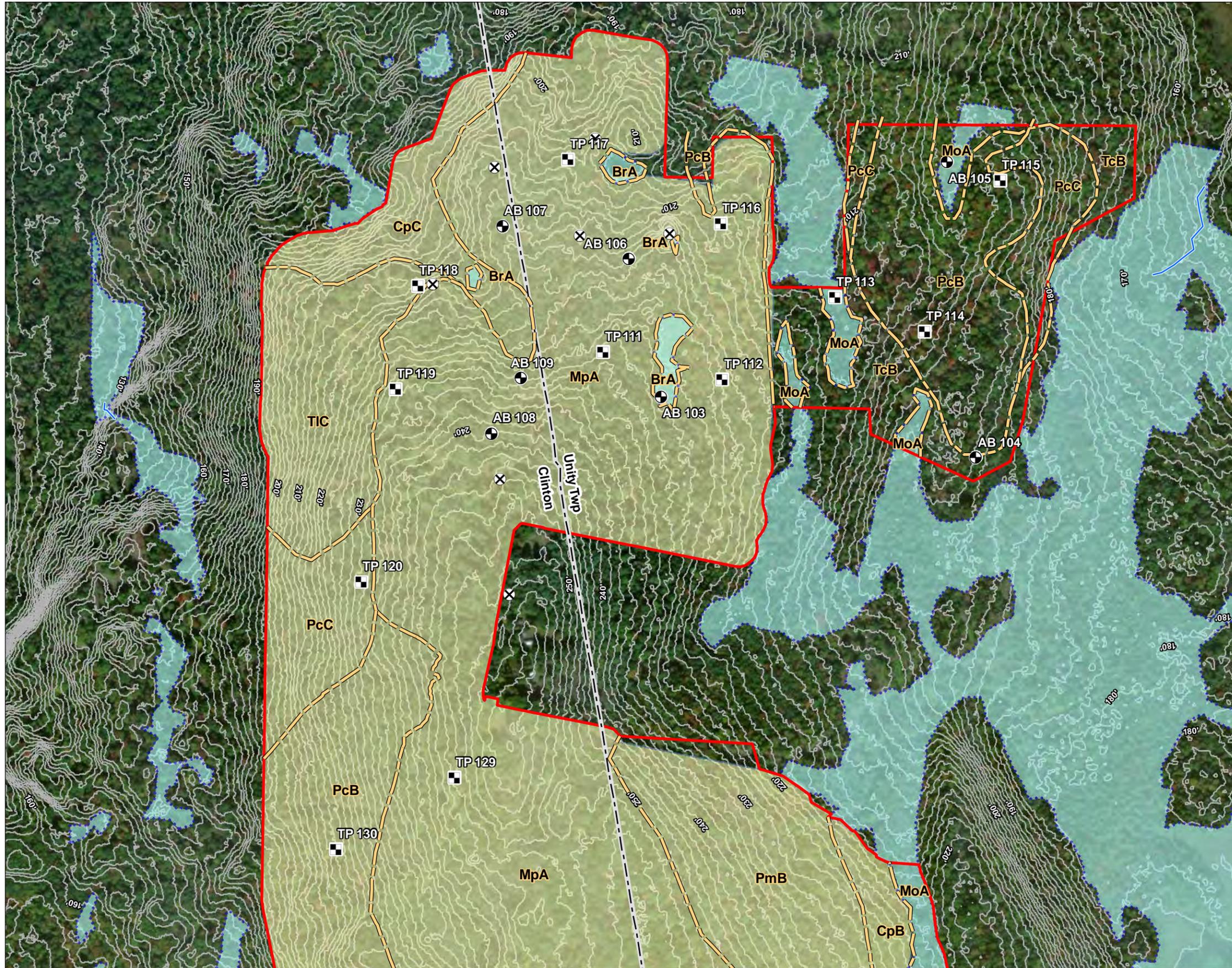
3-2

Title

**Array Area
 Class C Soil Survey Map**



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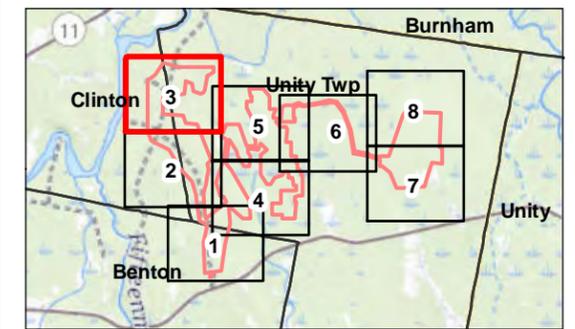
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- 2' Contours
- Test Pit
- Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
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Client/Project
 3 Corners Solar Project

195601453

Figure No.

3-3

**Array Area
 Class C Soil Survey Map**

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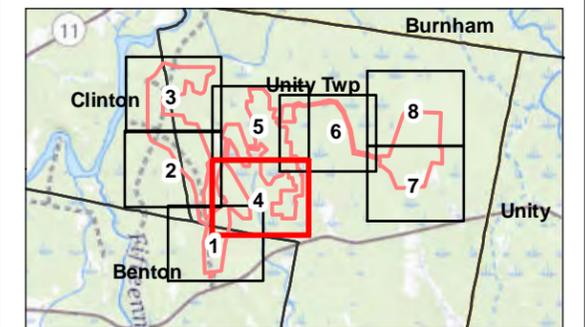
Legend

- 2' Contours
- Test Pit
- ⊙ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- Delineated Stream
- ⋯ Delineated Wetland
- ▭ Class C Soil Survey
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Client/Project
3 Corners Solar Project

195601453

Figure No.

3-4

Title
Array Area
Class C Soil Survey Map

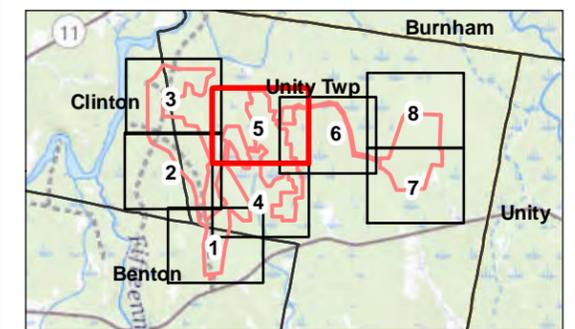
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- 2' Contours
- Test Pit
- ⊙ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
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- ▭ Class C Soil Survey
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- PbA** Map Unit Symbol



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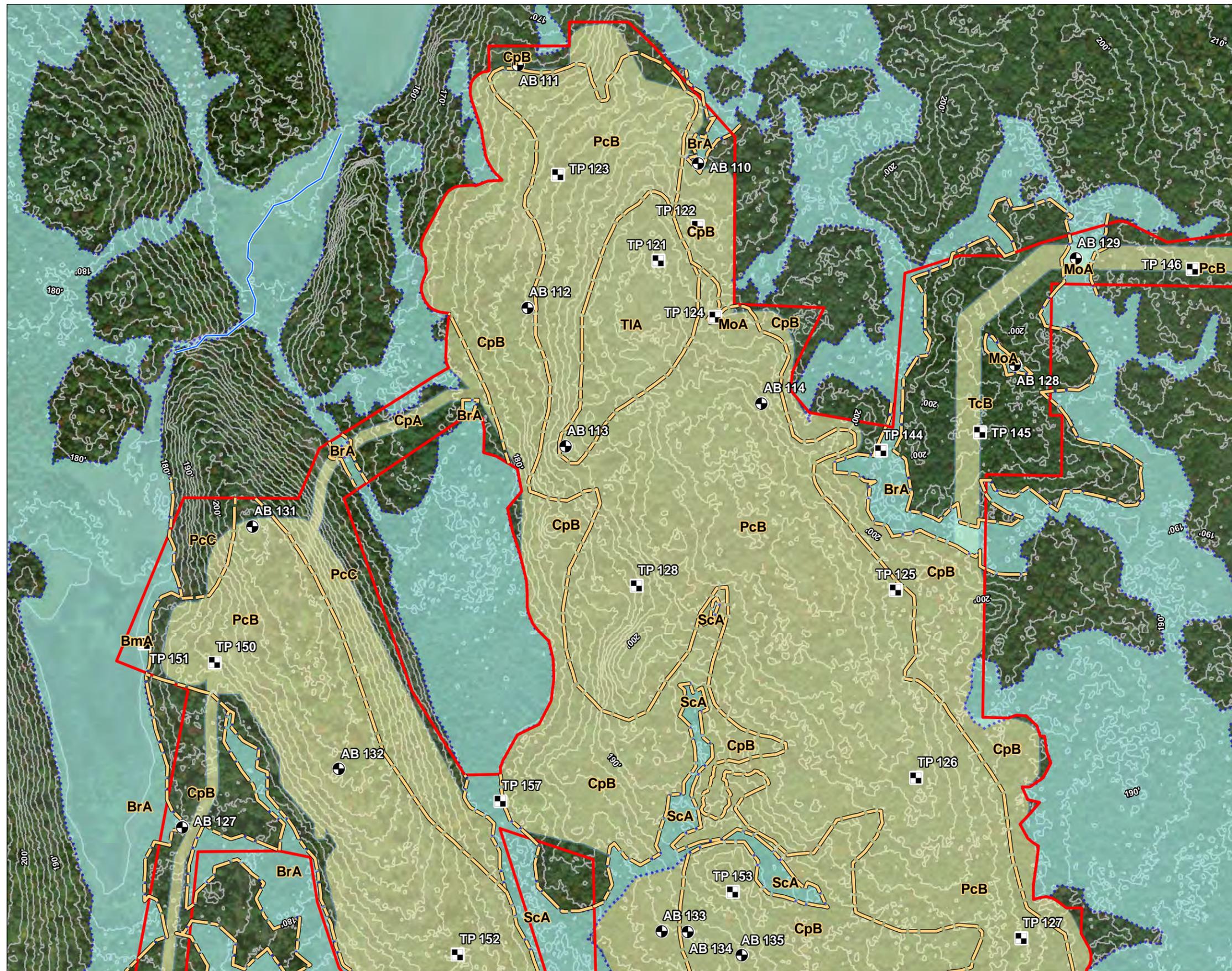
Client/Project
 3 Corners Solar Project

195601453

Figure No.

3-5

Title
 Array Area
 Class C Soil Survey Map



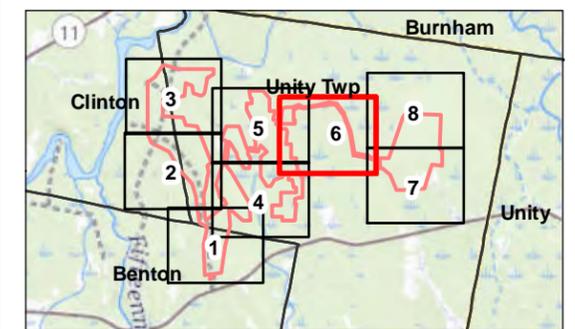
Legend

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- ▭ Proposed Project
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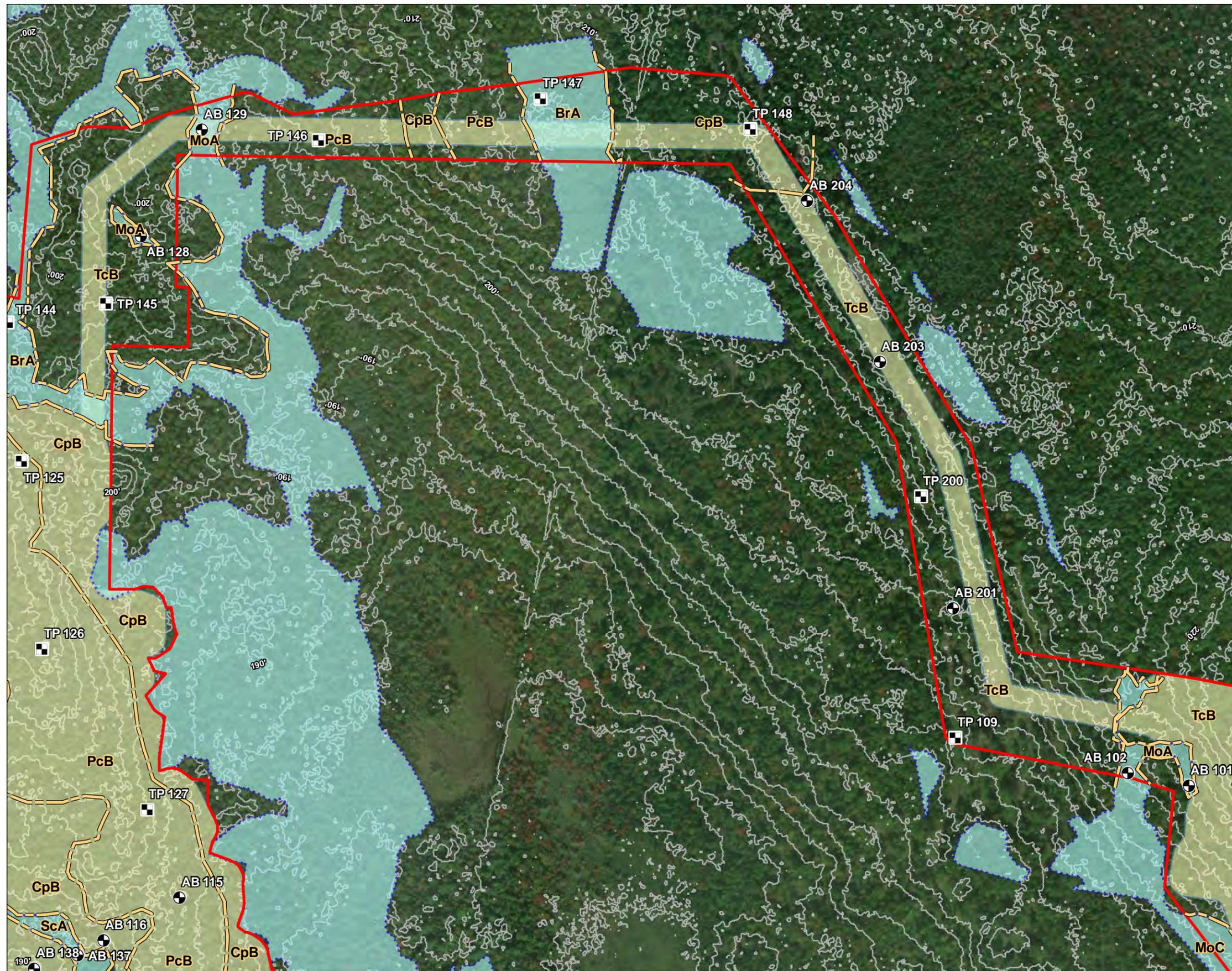
195601453

Figure No.

3-6

Title

**Array Area
 Class C Soil Survey Map**



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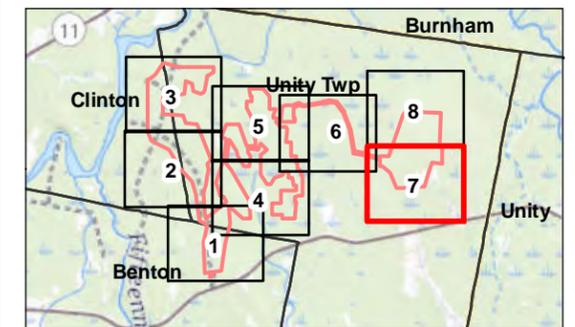
Legend

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- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- Delineated Stream
- ⋯ Delineated Wetland
- ▭ Class C Soil Survey
- ▭ Town Boundary
- ▭ Proposed Project
- PbA** Map Unit Symbol



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Project Location
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Client/Project
 3 Corners Solar Project

195601453

Figure No.

3-7

Title

**Array Area
 Class C Soil Survey Map**

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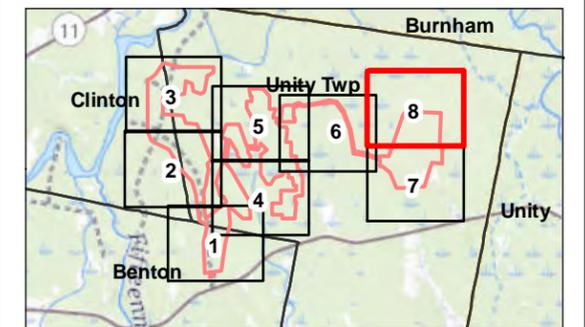
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
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- ⋯ Delineated Wetland
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- PbA** Map Unit Symbol



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Client/Project
 3 Corners Solar Project

195601453

Figure No.

3-8

Title
Array Area
Class C Soil Survey Map

SOIL SURVEY REPORT

December 23, 2021

Figures 4-1 to 4-16. Class L Soil Survey Maps

Class L Soil Survey Figure Map Unit Boundary Legend		
Map Unit Symbol	Map Unit Name	HSG
BmA	Burnham/Monarda Complex, 0-3% slopes	D
BrA	Brayton vstfsl, 0-3% slopes	D
BrB	Brayton vstfsl, 3-8% slopes	D
BrC	Brayton vstfsl, 8-15% slopes	D
BsA	Biddeford/Scantic Complex, 0-3% slopes	D
CoA	Colonel stsl, 0-3% slopes	D
CoC	Colonel stsl, 8-15% slopes	D
CpB	Colonel/Peru Complex, 3-8% slopes	C/D
CpC	Colonel/Peru Complex, 8-15% slopes	C/D
HoB	Howland sil, 3-8% slopes	C/D
HoC	Howland sil, 8-15% slopes	C/D
HoD	Howland sil, 15-35% slopes	C/D
HtM	Human Transported Materials	Not Rated
LaA	Lamoine sil, 0-3% slopes	D
LaB	Lamoine sil, 3-8% slopes	D
LbB	Lamoine/Buxton Complex, 3-8% slopes	C/D
LbC	Lamoine/Buxton Complex, 8-15% slopes	C/D
LrA	Lyme sl, shallow to mod. deep, 0-3% slopes	D
LrB	Lyme sl, shallow to mod. deep, 3-8% slopes	D
LtB	Lyman/Tunbridge Complex, 3-8% slopes	C/D
LtC	Lyman/Tunbridge Complex, 8-15% slopes	C/D
LyC	Lyman fsl, 8-15% slopes	D
LyD	Lyman fsl, 15-35% slopes	D
MoA	Monarda sil, 0-3% slopes	D
MoC	Monarda sil, 8-15% slopes	D
PbA	Peacham/Brayton Complex, 0-3% slopes	D
PbC	Peacham/Brayton Complex, 8-15% slopes	D
PcA	Peru/Colonel Complex, 0-3% slopes	C/D
PcB	Peru/Colonel Complex, 3-8% slopes	C/D
PcC	Peru/Colonel Complex, 8-15% slopes	C/D
PcD	Peru/Colonel Complex, 15-35% slopes	C/D
PmB	Peru/Marlow Complex, 3-8% slopes	C/D
PmD	Peru/Marlow Complex, 15-35% slopes	C/D



SOIL SURVEY REPORT

December 23, 2021

ScA	Scantic sil, 0-3% slopes	D
ScB	Scantic sil, 3-8% slopes	D
SrA	Scantic sil, mod. deep, 0-3% slope	D
SrD	Scantic sil, mod. deep, 15-35% slope	D
TcB	Telos/Chesuncook Complex, 3-8% slopes	C/D
TcC	Telos/Chesuncook Complex, 8-15% slopes	C/D
TcD	Telos/Chesuncook Complex, 15-35% slopes	C/D
TIB	Tunbridge/Lyman Complex, 3-8% slopes	C/D
TIC	Tunbridge/Lyman Complex, 8-15% slopes	C/D
TID	Tunbridge/Lyman Complex, 15-35% slopes	C/D



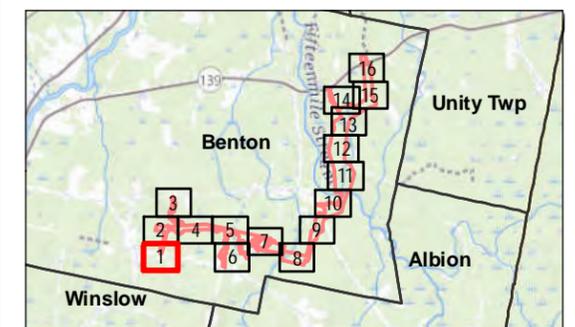
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- ⊙ Corps Paired Plot
- · - · - Delineated Intermittent Stream
- Delineated Perennial Stream
- · · · · Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
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 1:2,400

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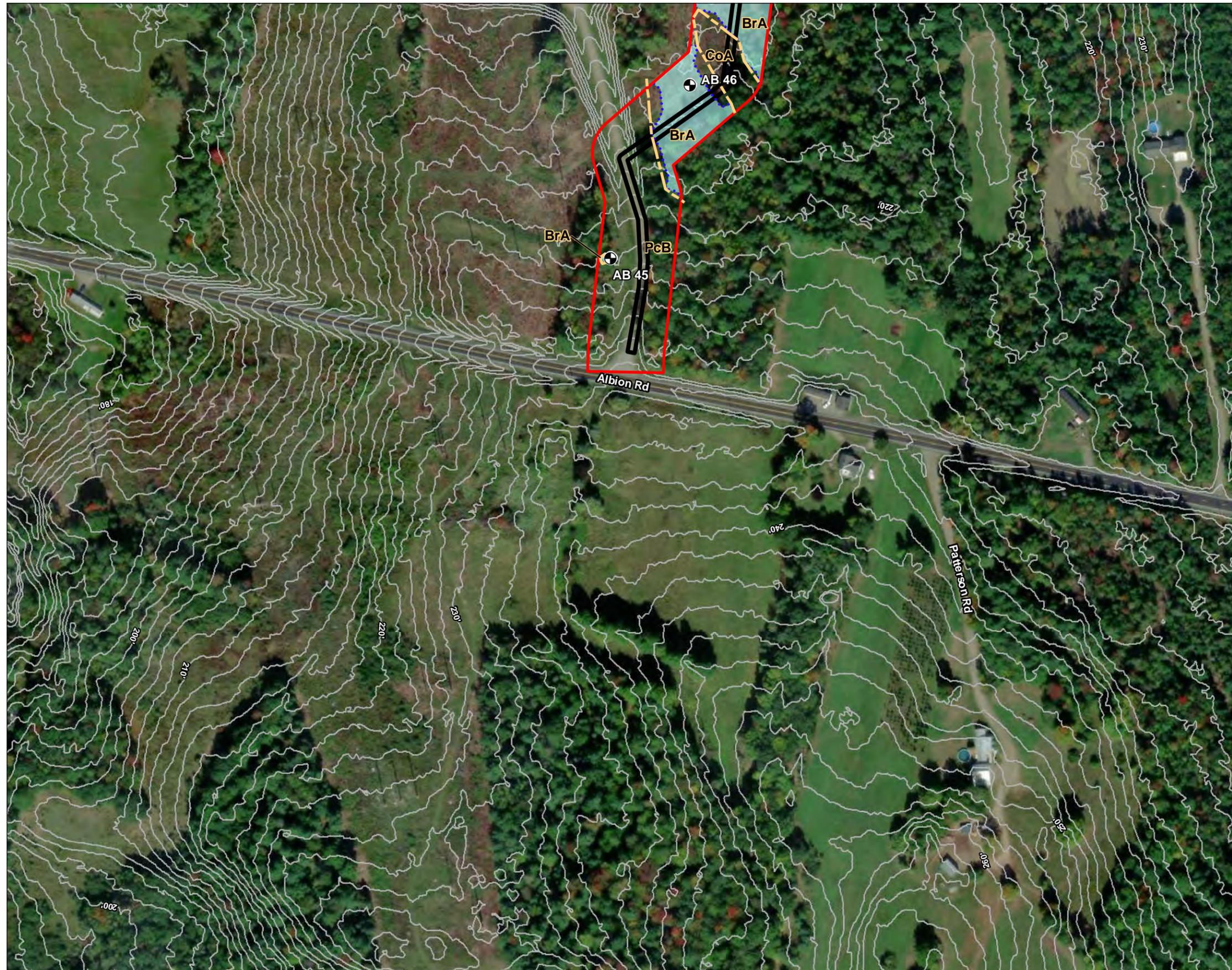
Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-1

Title
 Transmission Line
 Class L Soil Survey Map



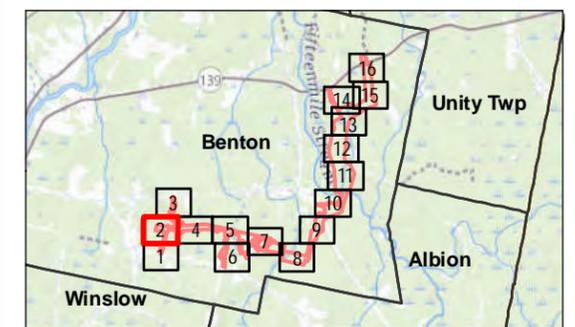
Legend

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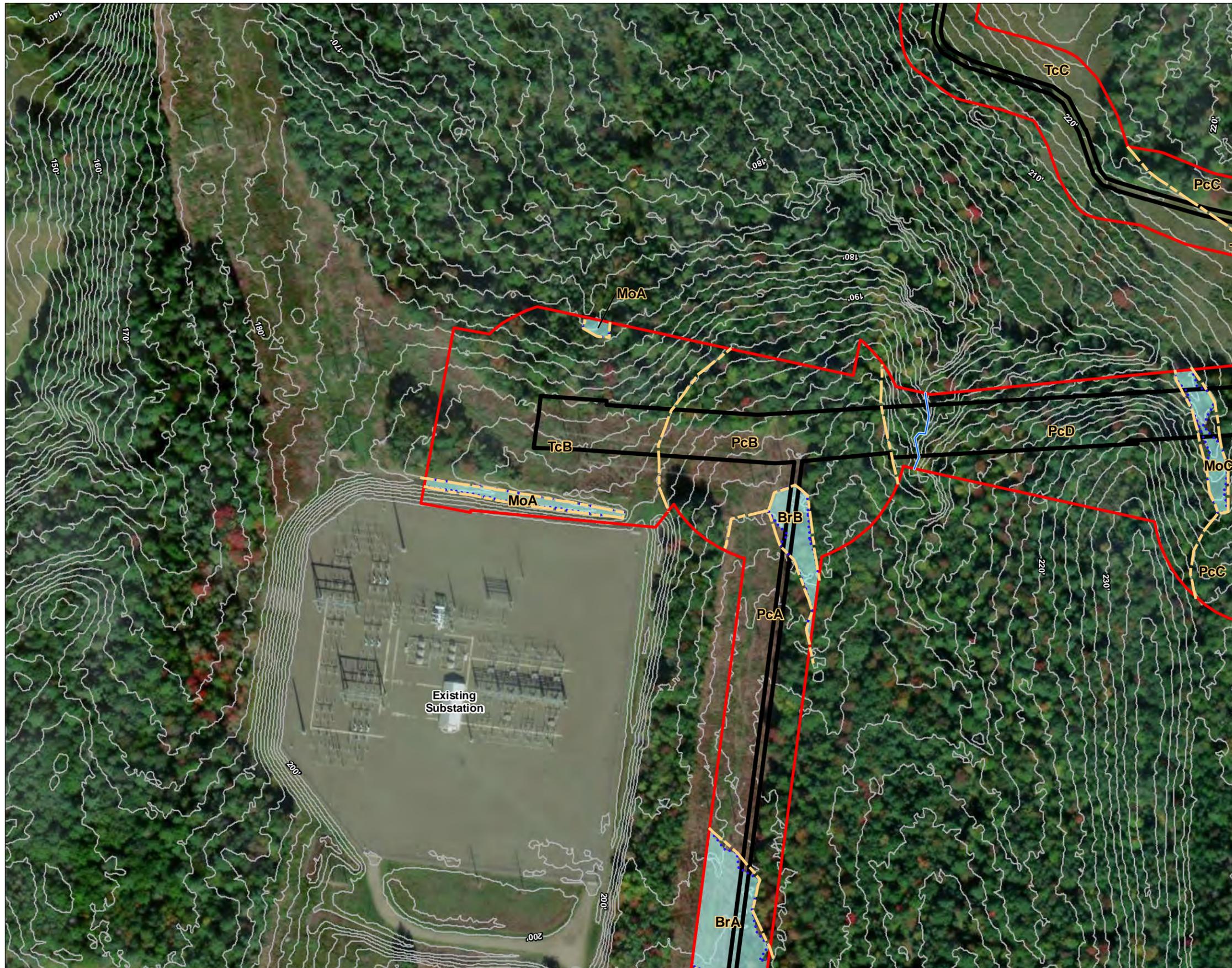
Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-2

Title
 Transmission Line
 Class L Soil Survey Map



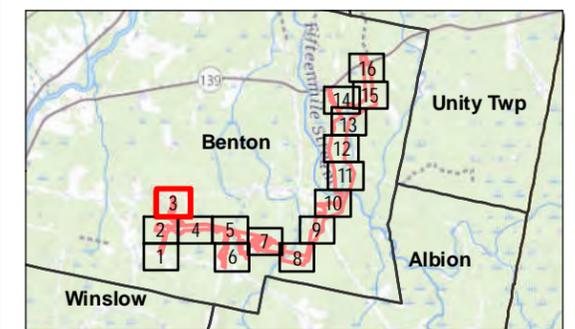
Legend

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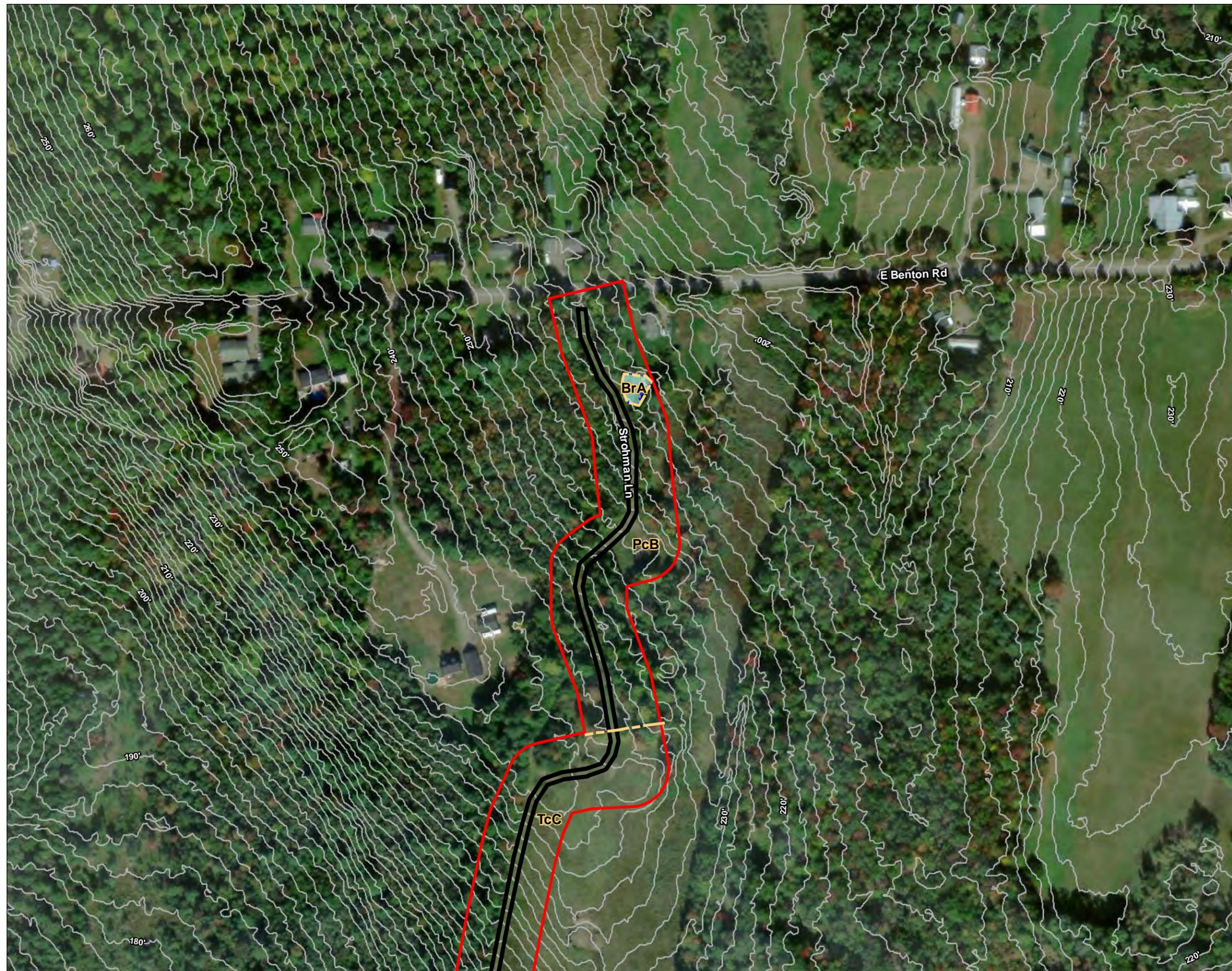
Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-3

Title
 Transmission Line
 Class L Soil Survey Map



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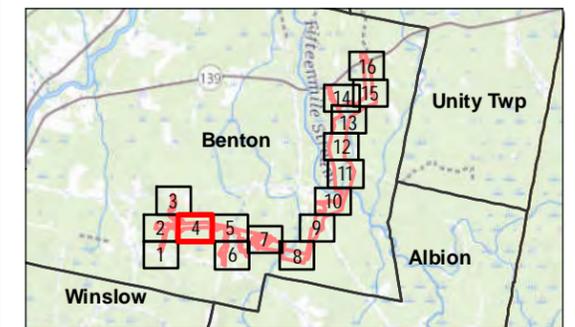
Legend

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Project Location
Benton, Maine
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Client/Project
Three Corners Solar Project
Transmission Line Corridor
195601453

Figure No.
4-4

Title
**Transmission Line
Class L Soil Survey Map**

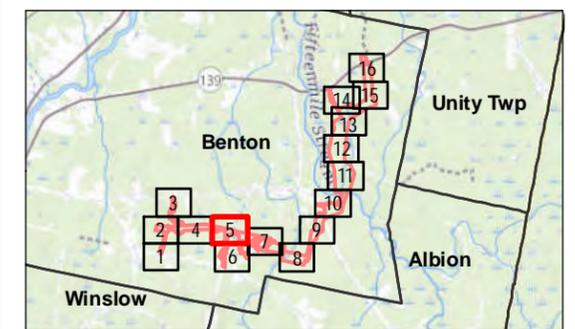
Legend

- 2' Contours
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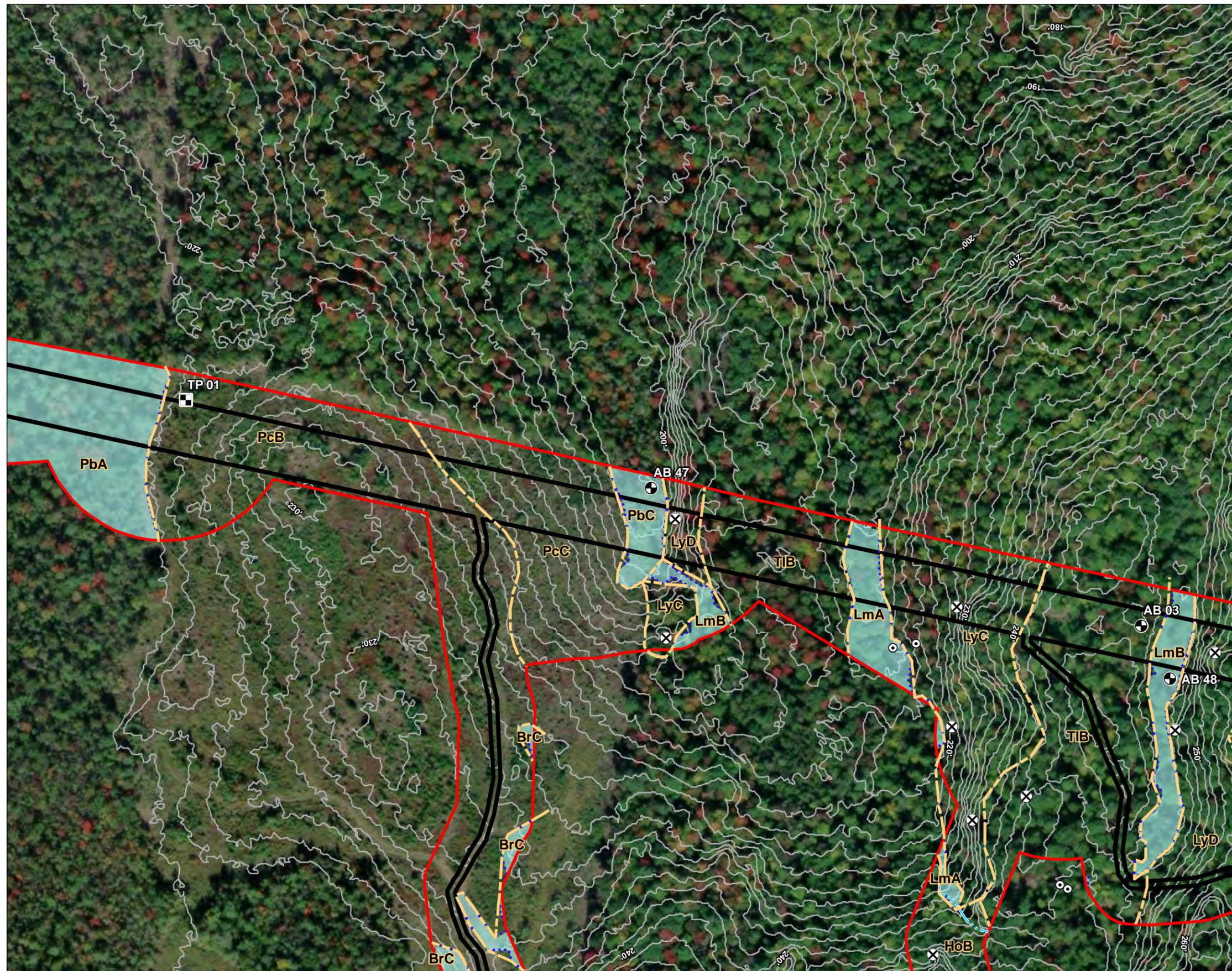
Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

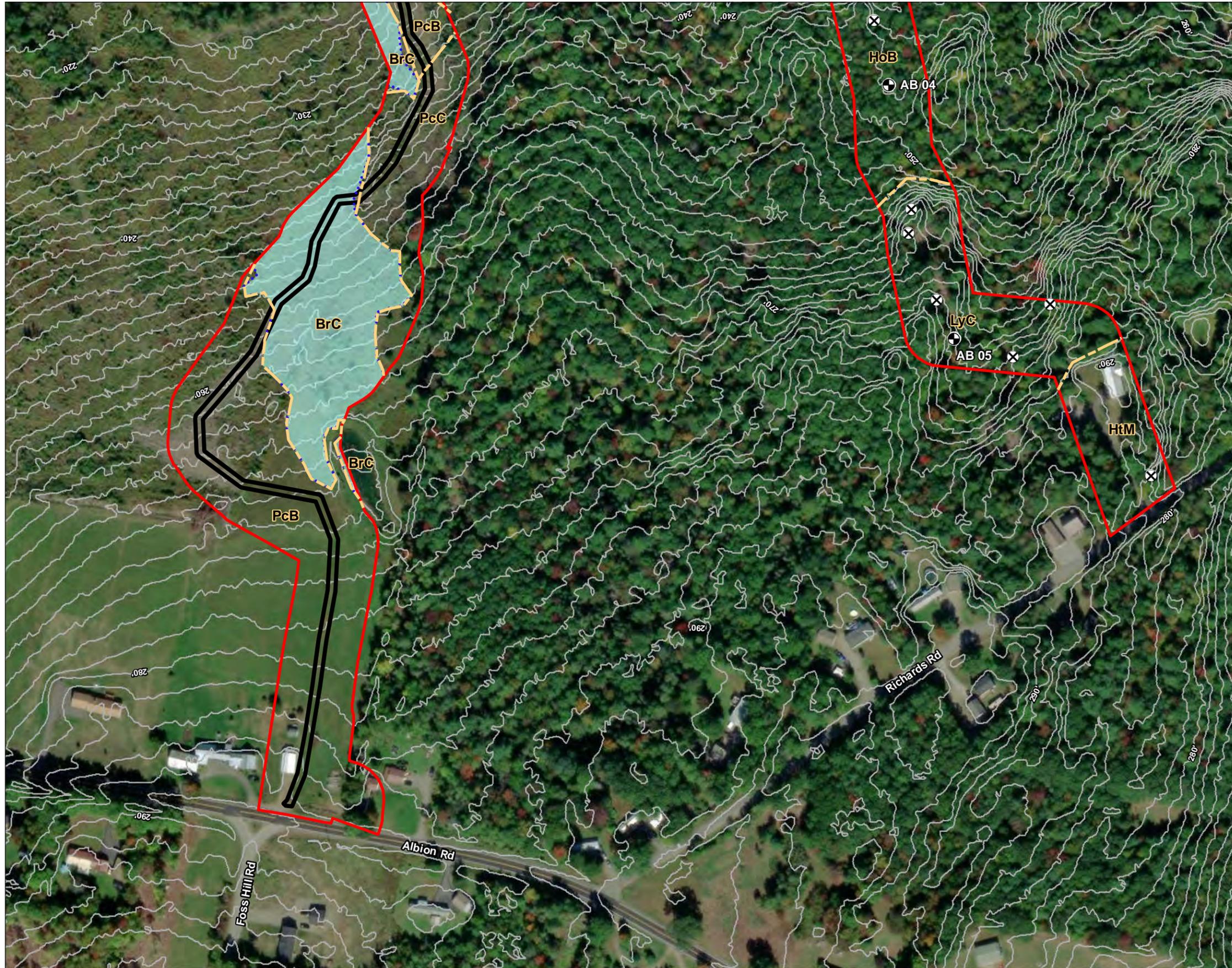
Figure No.

4-5

Title
 Transmission Line
 Class L Soil Survey Map



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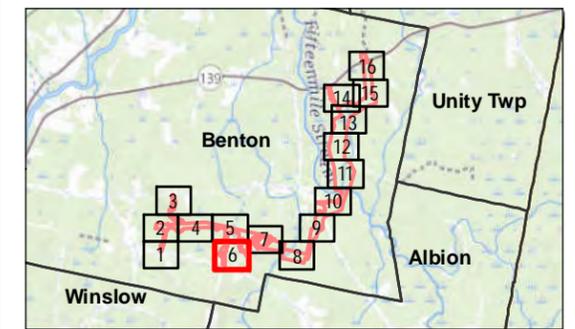
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Project Location
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Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.
 4-6

Title
 Transmission Line
 Class L Soil Survey Map

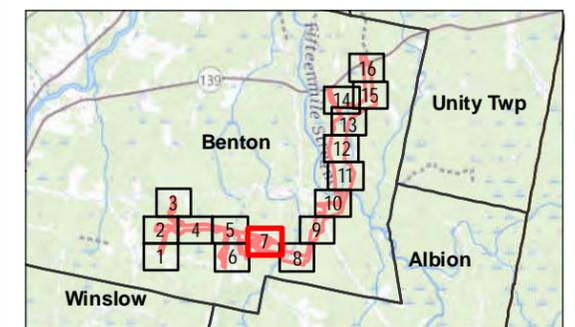
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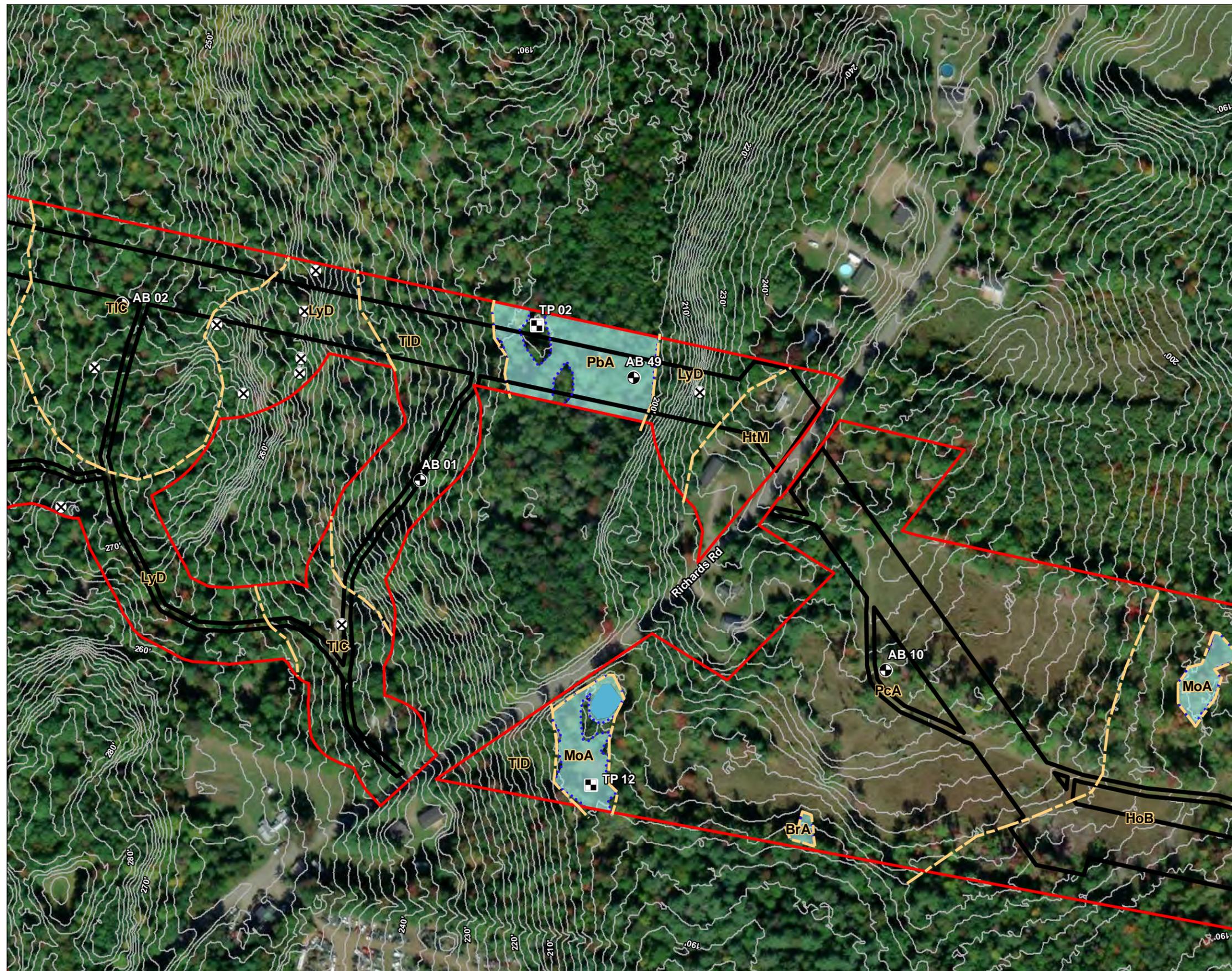
Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-7

Title
Transmission Line
Class L Soil Survey Map



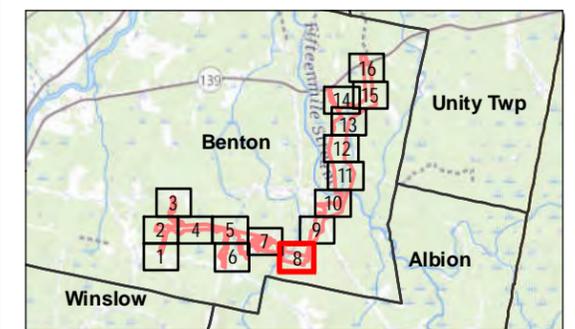
Legend

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 Transmission Line Corridor

195601453

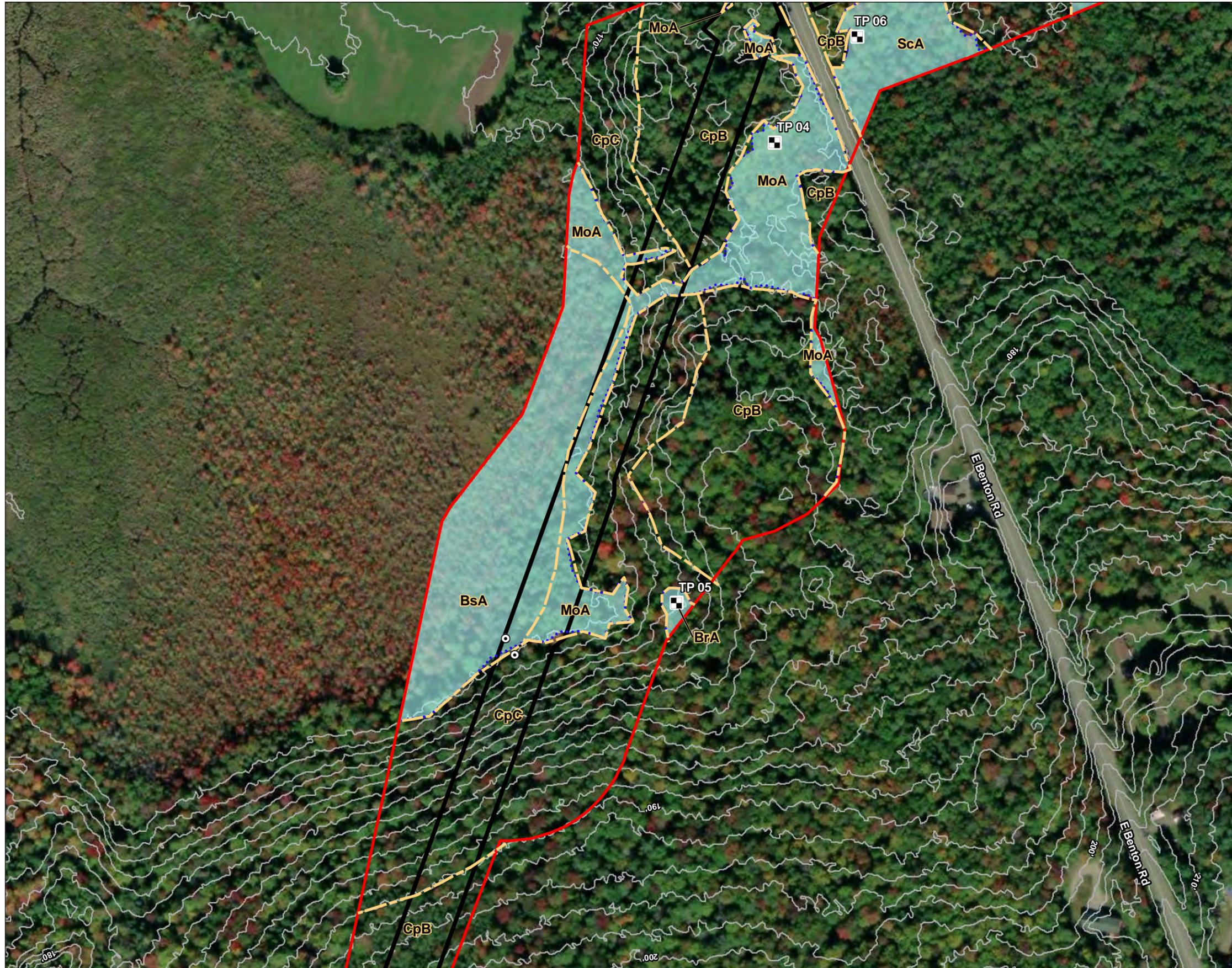
Figure No.

4-8

Title
 Transmission Line
 Class L Soil Survey Map



V:\195601453\03_data\gis_cad\gis\mxd\Site\Report\01453_04_Time_ClassL_2021.mxd Revised: 2021-12-29 By: gcarpentier



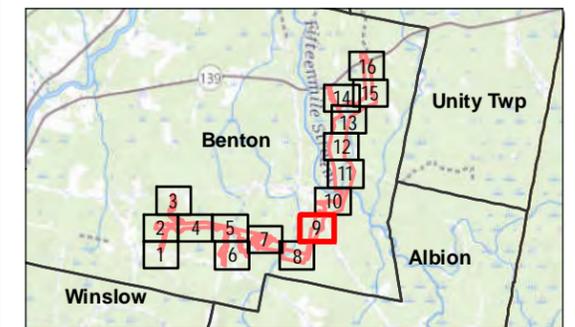
Legend

- 2' Contours
- Test Pit
- ⊙ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- Corps Paired Plot
- - - Delineated Intermittent Stream
- Delineated Perennial Stream
- ⋯ Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
 (At original document size of 11x17)
 1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-9

Title

**Transmission Line
 Class L Soil Survey Map**

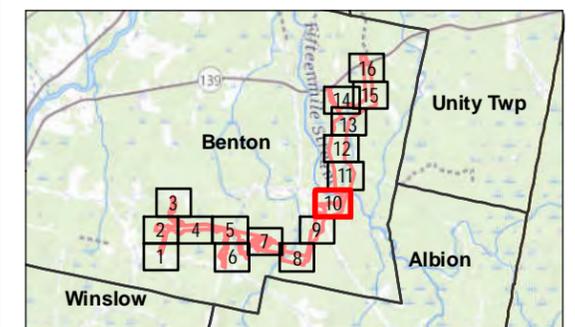
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- ⊙ Corps Paired Plot
- · - · - Delineated Intermittent Stream
- Delineated Perennial Stream
- · · · · Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
 (At original document size of 11x17)
 1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

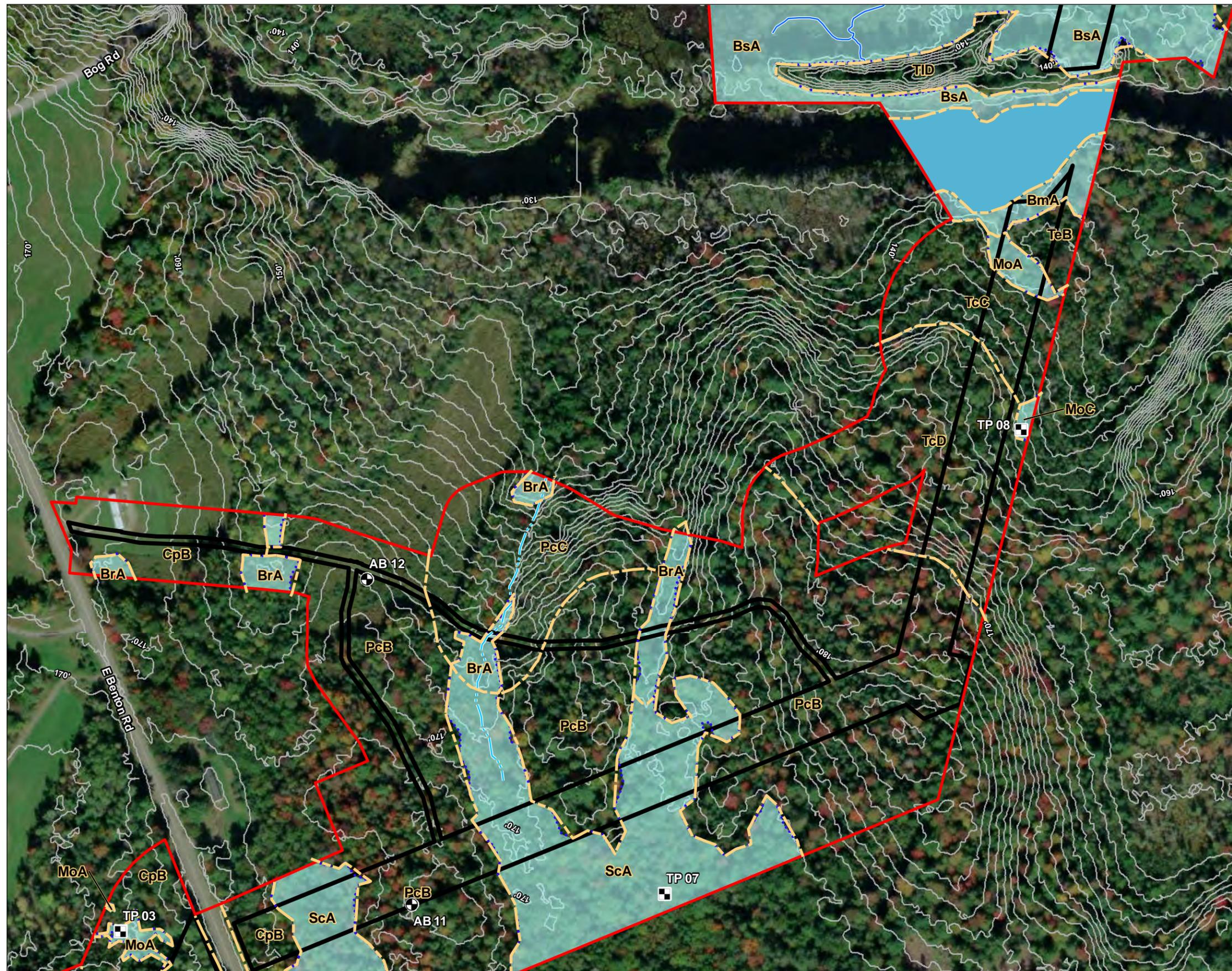
195601453

Figure No.

4-10

Title

**Transmission Line
 Class L Soil Survey Map**



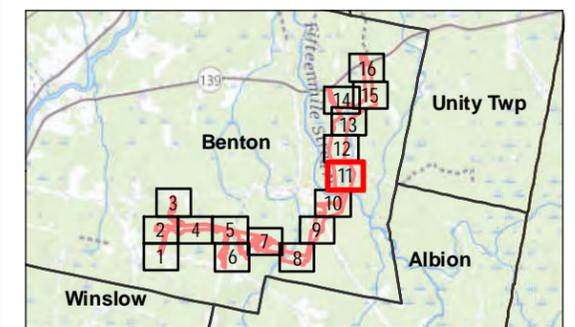
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- ⊙ Corps Paired Plot
- - - Delineated Intermittent Stream
- Delineated Perennial Stream
- ⋯ Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
 (At original document size of 11x17)
 1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-11

Title
 Transmission Line
 Class L Soil Survey Map



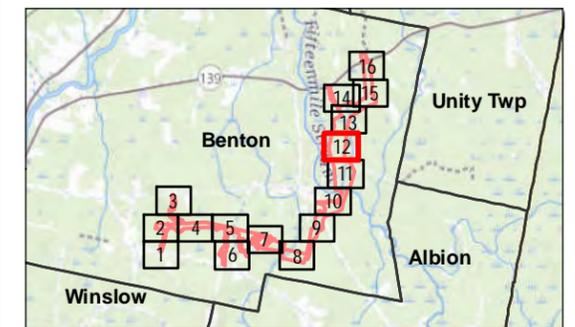
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- ⊙ Corps Paired Plot
- · - · - Delineated Intermittent Stream
- - - Delineated Perennial Stream
- · - · - Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
 (At original document size of 11x17)
 1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

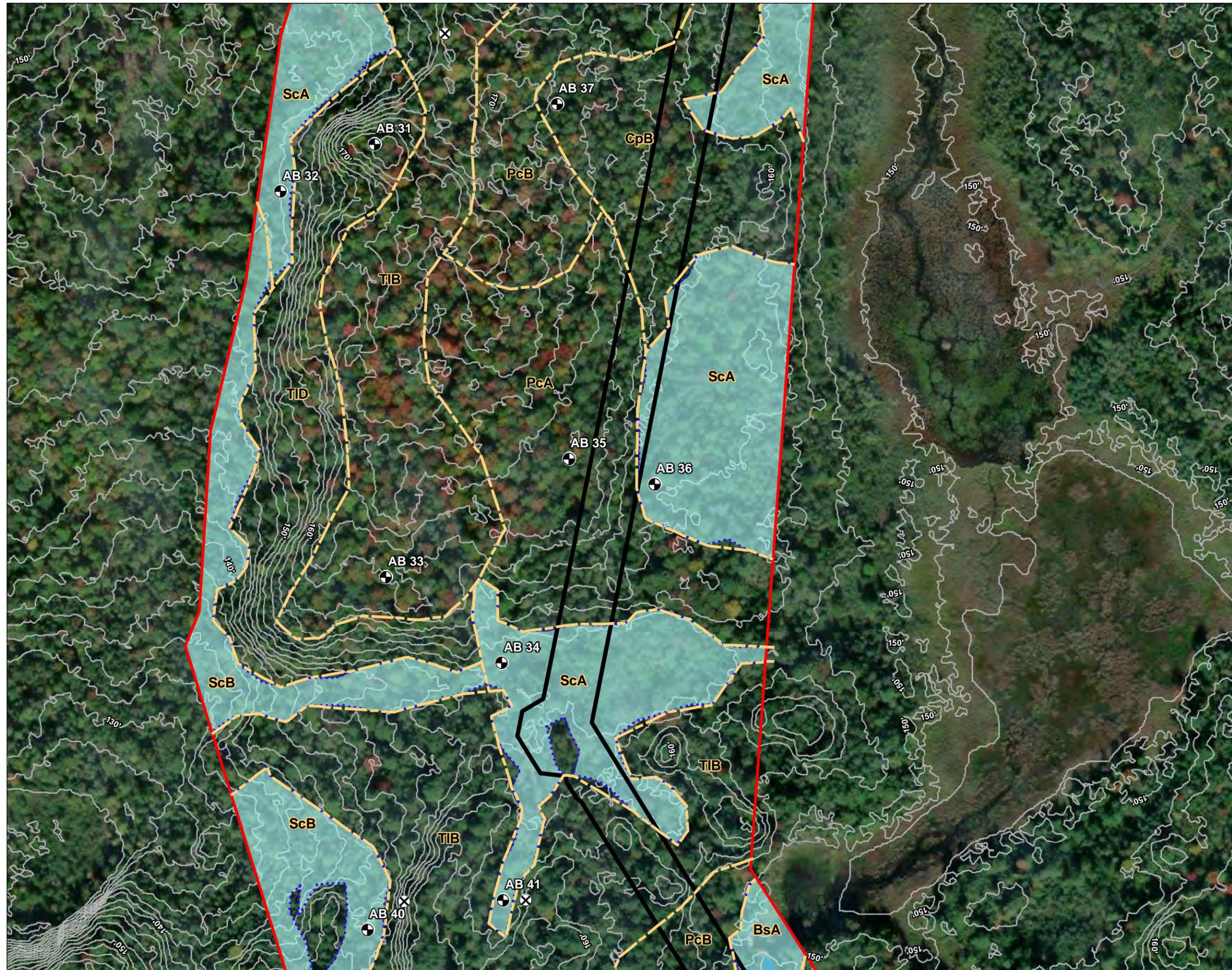
Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

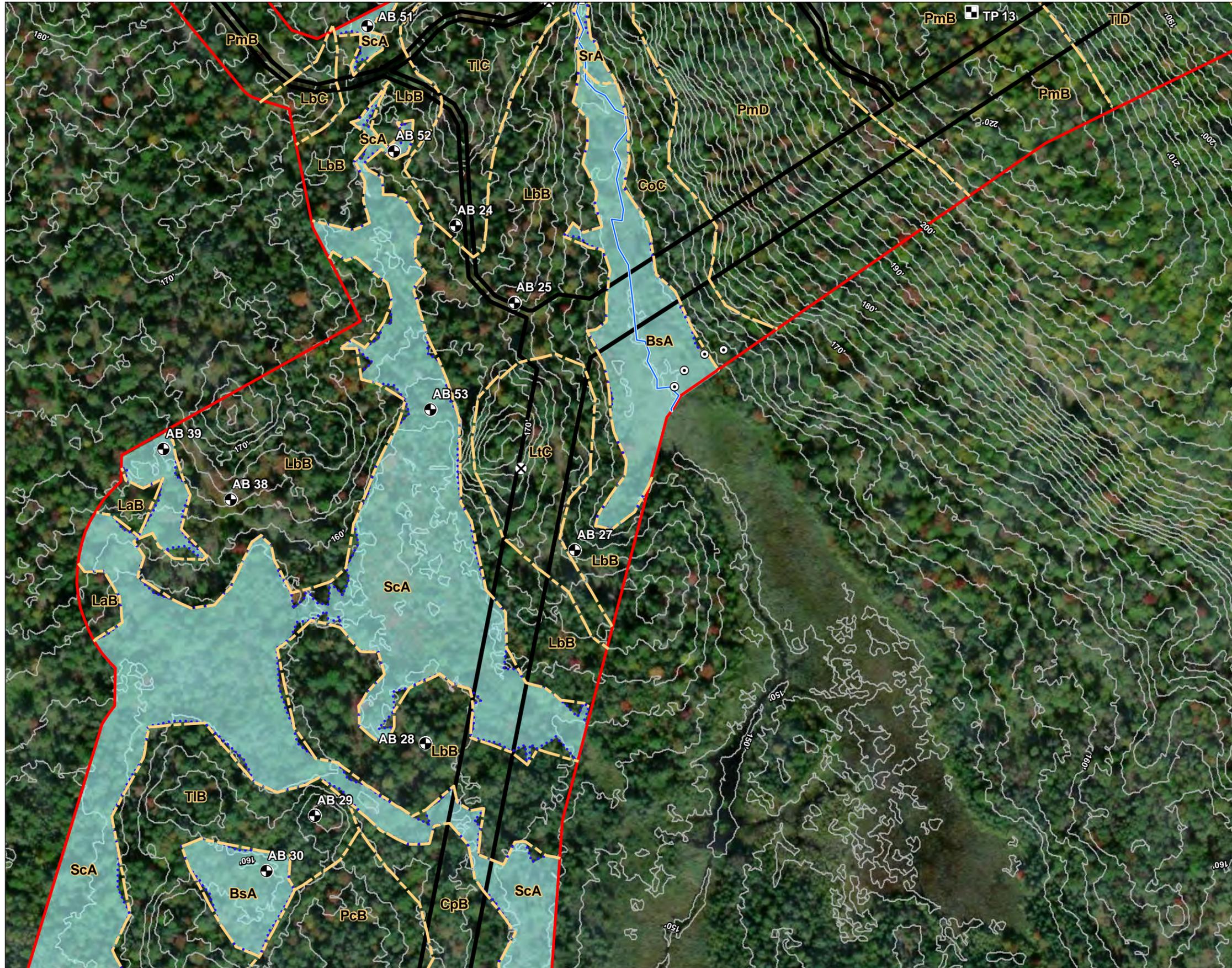
Figure No.

4-12

Title
 Transmission Line
 Class L Soil Survey Map



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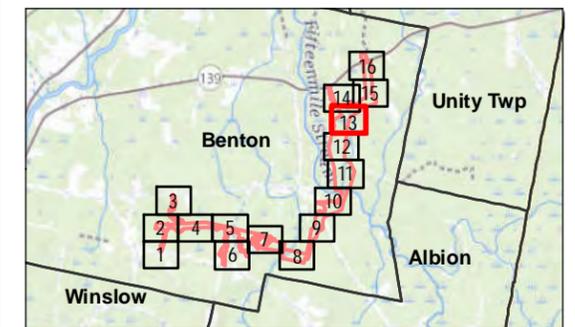
Legend

- 2' Contours
- Test Pit
- Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- Corps Paired Plot
- - - Delineated Intermittent Stream
- Delineated Perennial Stream
- ⋯ Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
(At original document size of 11x17)
1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
Benton, Maine

Prepared by GC on 2021-12-21
TR Review by RDK on 2021-12-22
IR Review by EB on 2021-12-22

Client/Project
Three Corners Solar Project
Transmission Line Corridor

195601453

Figure No.

4-13

Title
**Transmission Line
Class L Soil Survey Map**

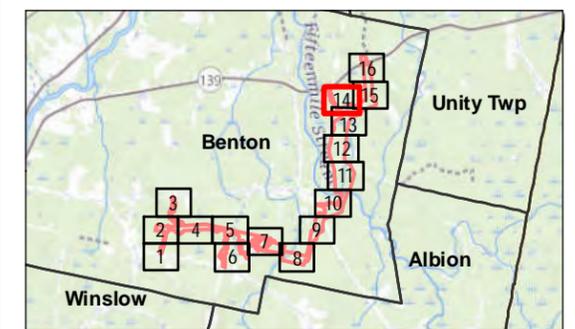
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- ⊙ Corps Paired Plot
- - - Delineated Intermittent Stream
- Delineated Perennial Stream
- ⋯ Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
 (At original document size of 11x17)
 1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-14

Title

**Transmission Line
 Class L Soil Survey Map**



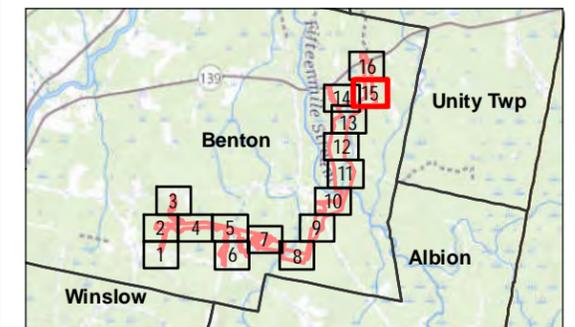
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- - - Soil Map Unit Boundary
- ⊙ Corps Paired Plot
- - - Delineated Intermittent Stream
- Delineated Perennial Stream
- ⋯ Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
 (At original document size of 11x17)
 1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

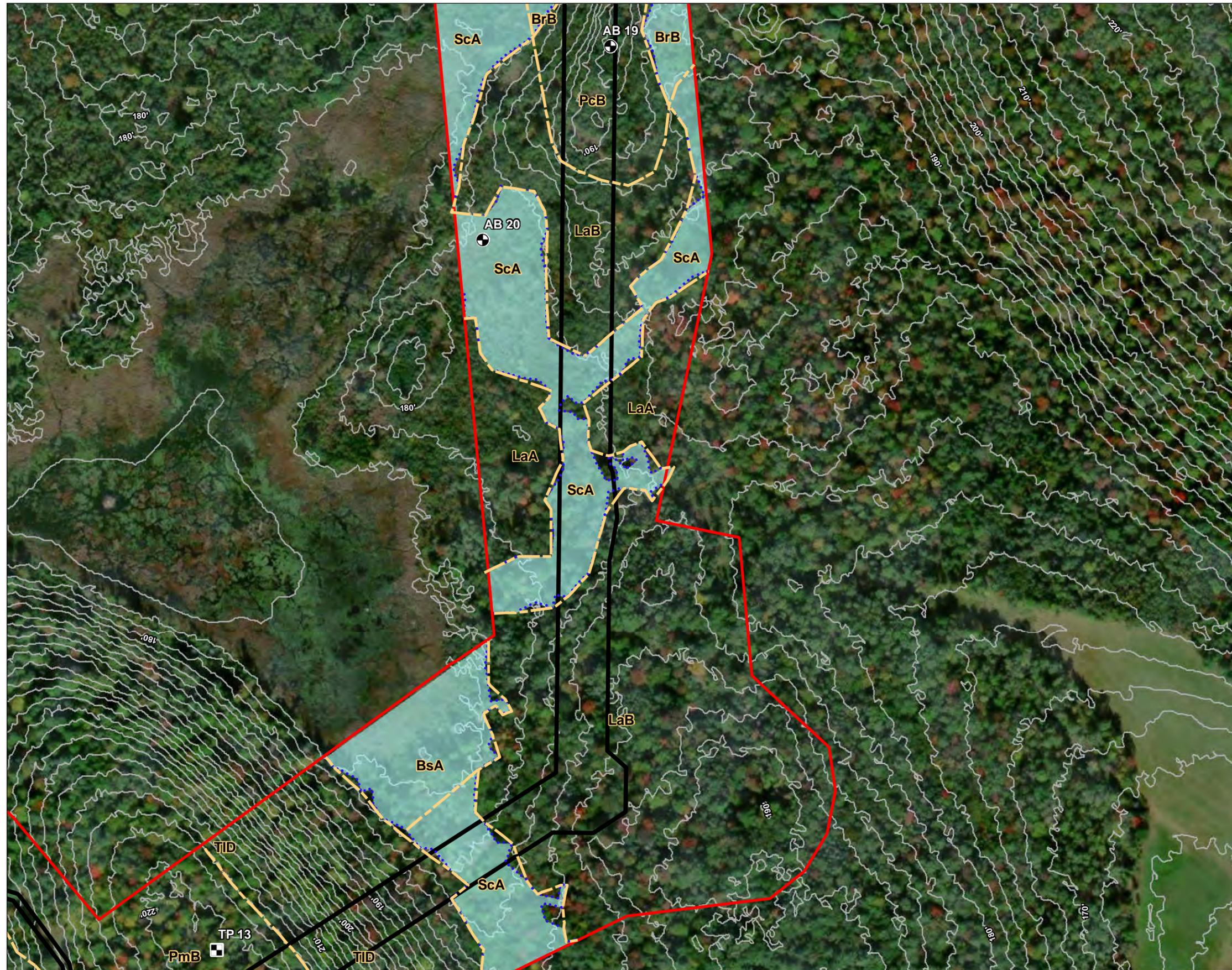
Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-15

Title
 Transmission Line
 Class L Soil Survey Map



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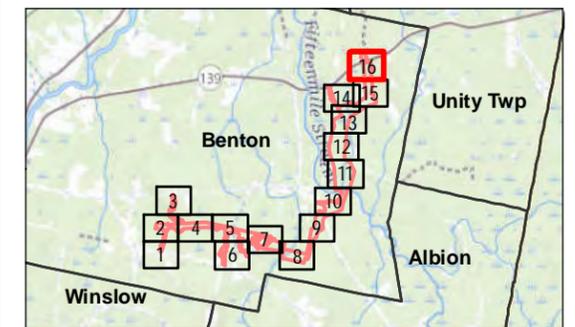
Legend

- 2' Contours
- Test Pit
- ⊕ Auger Boring
- ⊗ Bedrock
- Soil Map Unit Boundary
- ⊙ Corps Paired Plot
- Delineated Intermittent Stream
- Delineated Perennial Stream
- ⋯ Delineated Wetland
- ▭ Class L Soil Survey Area
- ▭ Limit of Disturbance
- PbA** Map Unit Symbol



0 200 Feet
 (At original document size of 11x17)
 1:2,400

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 19N
 2. Data Sources: Base features obtained from the Maine Office of GIS (MEGIS). Wetland and stream delineation performed by Stantec and Boyle Associates, 2020 - 2021.
 3. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Services.



Project Location
 Benton, Maine

Prepared by GC on 2021-12-21
 TR Review by RDK on 2021-12-22
 IR Review by EB on 2021-12-22

Client/Project
 Three Corners Solar Project
 Transmission Line Corridor

195601453

Figure No.

4-16

Title
Transmission Line
Class L Soil Survey Map

APPENDICES



SOIL SURVEY REPORT

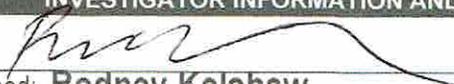
December 23, 2021

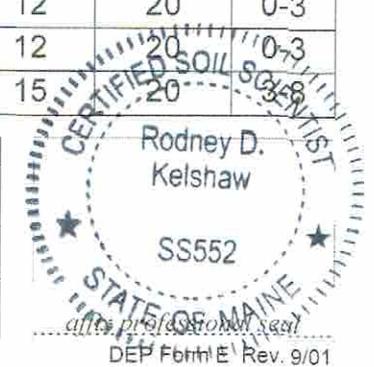
Appendix A FORM E: SOIL CONDITIONS SUMMARY TABLE



SOIL CONDITIONS SUMMARY TABLE		SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES	
Project Name: 3 Corners Solar Project		Applicant Name: 3 Corners, LLC	Project Location (municipality): Clinton & Unity Twp. – Project Array

Lot No.	Exploration Symbol (TP 1, B 2, etc.)	☐ or ☑ if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition (if by S.E.), ● Soil series name (if by C.S.S.); or by ● Geologic unit (if by C.G.)	Depths to (check one):			Ground Surface Slope (%)	
				☑ inches	☐ cm	☐ cm		
	AB 100		Colonel vstsl, st. surface	9	N.O.	16	16	3-8
	AB 101		Brayton vstfsl, st. surface	7	N.O.	10	13	0-3
	AB 102		Brayton vstfsl, st. surface	7	N.O.	10	13	0-3
	AB 103		Brayton vstsl	7	N.O.	11	40	0-3
	AB 104		Telos grvsl	18	N.O.	22	23	3-8
	AB 105		Monarda vstsil	4	N.O.	10	12	0-3
	AB 106		Lyman grfsl	N.O.	16	N.O.	16	3-8
	AB 107		Tunbridge vstfsl	N.O.	31	N.O.	31	3-8
	AB 108		Tunbridge vgrsil, mod. well dr.	N.O.	17	N.O.	28	3-8
	AB 109		Tunbridge vfl	N.O.	31	N.O.	31	8-15
	AB 110		Brayton stfsl	0	N.O.	16	16	0-3
	AB 111		Colonel grfsl	12	N.O.	14	23	3-8
	AB 112		Colonel fsl	14	N.O.	14	20	3-8
	AB 113		Tunbridge fsl	N.O.	22	N.O.	22	0-3
	AB 114		Peru fsl	N.O.	N.O.	20	23	0-3
	AB 115		Peru stfsl	N.O.	N.O.	24	40	3-8
	AB 116		Colonel vstfsl	9	N.O.	12	16	3-8
	AB 117		Peru vstsl, st. surface	24	N.O.	36	48	3-8
	AB 118		Colonel stfsl, st. surface	15	N.O.	17	20	3-8
	AB 119		Monarda vstsil, st. surface	4	N.O.	20	20	0-3
	AB 120		Peru sl, st. surface	N.O.	N.O.	20	26	0-3
	AB 121		Tunbridge grfsl	N.O.	24	N.O.	24	3-8
	AB 122		Brayton stfsl, st. surface	7	N.O.	16	16	3-8
	AB 123		Peru stfsl	N.O.	N.O.	24	48	3-8
	AB 124		Peru fsl	N.O.	N.O.	18	25	3-8
	AB 125		Peru grsl	N.O.	N.O.	24	32	3-8
	AB 126		Peru cobsl	N.O.	N.O.	32	48	3-8
	AB 127		Brayton stsl	7	N.O.	22	60	0-3
	AB 128		Monarda vstsil	3	N.O.	12	20	0-3
	AB 129		Monarda stsil	5	N.O.	12	20	0-3
	AB 130		Colonel stfsl	10	N.O.	15	20	0-3

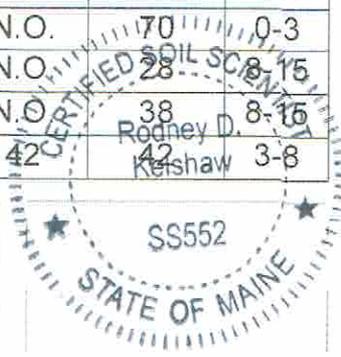
INVESTIGATOR INFORMATION AND SIGNATURE	
Signature: 	Date: 2020-10-21
Name Printed/typed: Rodney Kelshaw	Cert/Lic/Reg. # LSS 552
Title: <input checked="" type="checkbox"/> Licensed Site Evaluator <input checked="" type="checkbox"/> Licensed Soil Scientist <input type="checkbox"/> Certified Geologist <input type="checkbox"/> Other:	



SOIL CONDITIONS SUMMARY TABLE		SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES
Project Name: 3 Corners Solar Project	Applicant Name: 3 Corners, LLC	Project Location (municipality): Clinton, Benton & Unity Twp. – Project Array & Substation

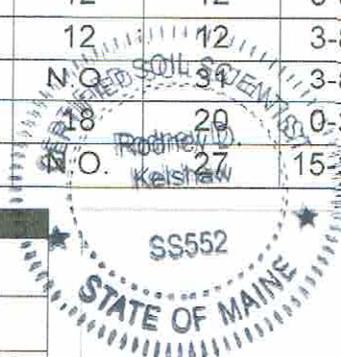
Lot No.	Exploration Symbol (TP 1, B 2, etc.)	or if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition (if by S.E.), ● Soil series name (if by C.S.S.), or by ● Geologic unit (if by C.G.)	Depths to (check one):			Ground Surface Slope (%)	
				Mottling (seasonal watertable)	Bedrock	Firm or Restrictive Layer		Limit of Exploration
	TP 131		Monarda sil	0	N.O.	13	24	0-3
	TP 132		Colton ls	N.O.	N.O.	N.O.	68	3-8
	TP 133		Monarda sil	4	N.O.	11	34	0-4
	TP 134		Tunbridge vgrfsl	N.O.	32	N.O.	32	3-8
	TP 135		Tunbridge fsl	N.O.	29	N.O.	29	3-8
	TP 136		Marlow vgrsl	N.O.	N.O.	39	40	0-3
	TP 137		Colonel fsl	12	N.O.	18	25	3-8
	TP 138		Tunbridge fsl	N.O.	30	N.O.	30	0-3
	TP 139		Lyman fsl	N.O.	19	N.O.	19	0-3
	TP 140		Brayton sl	0	N.O.	14	37	0-3
	TP 141		Peru fsl	N.O.	N.O.	18	25	3-8
	TP 142		Peru fsl	24	N.O.	24	32	3-8
	TP 143		Peru fsl	17	N.O.	17	30	3-8
	TP 144		Brayton vstsl, st. surface	0	N.O.	16	25	0-3
	TP 145		Telos vgrfsl, st surface	13	N.O.	13	20	3-8
	TP 146		Peru stfsl, st. surface	N.O.	N.O.	30	32	3-8
	TP 147		Brayton vstsl, st. surface	0	N.O.	10	24	0-3
	TP 148		Colonel fsl	15	N.O.	15	30	3-8
	TP 149		Colonel vstsl	16	N.O.	16	30	3-8
	TP 150		Peru stsl, st. surface	26	N.O.	26	72	3-8
	TP 151		Burnham vst muck	0	N.O.	18	22	0-3
	TP 152		Peru sl, st. surface	17	N.O.	20	32	0-3
	TP 153		Chesuncook stsil	17	N.O.	20	32	3-8
	TP 154		Colonel l	14	N.O.	21	29	0-3
	TP 155		Peru cobsl	23	N.O.	23	30	3-8
	TP 156		Brayton vstsl	0	N.O.	10	20	0-3
	TP 157		Scantic sil	0	N.O.	12	24	0-3
	TP 158		Colton ls	N.O.	N.O.	N.O.	70	0-3
	TP 159		Tunbridge vgrsil	N.O.	28	N.O.	28	8-15
	TP 160		Tunbridge vgrl	N.O.	38	N.O.	38	8-15
	TP 161		Peru grl	24	N.O.	42	42	3-8

INVESTIGATOR INFORMATION AND SIGNATURE	
Signature:	Date: 2020-10-21
Name Printed/typed: Rodney Kelshaw	Cert/Lic/Reg. # LSS 552
Title: <input checked="" type="checkbox"/> Licensed Site Evaluator	<input checked="" type="checkbox"/> Licensed Soil Scientist
<input type="checkbox"/> Certified Geologist	<input type="checkbox"/> Other:



SOIL CONDITIONS SUMMARY TABLE		SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES	
Project Name: 3 Corners Solar Project	Applicant Name: 3 Corners, LLC	Project Location (municipality): Benton – T-line	

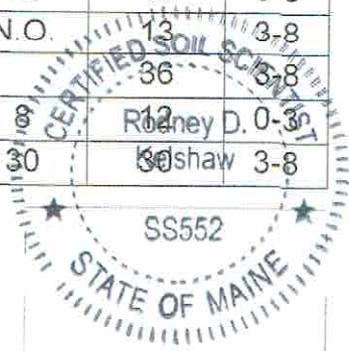
Lot No.	Exploration Symbol (TP 1, B 2, etc.)	<input type="checkbox"/> or <input type="checkbox"/> if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition (if by S.E.), ● Soil series name (if by C.S.S.), or by ● Geologic unit (if by C.G.)	Depths to (check one):				Ground Surface Slope (%)
				<input checked="" type="checkbox"/> inches Mottling (seasonal watertable)	<input type="checkbox"/> inches Bedrock	<input type="checkbox"/> inches Firm or Restrictive Layer	<input type="checkbox"/> cm Limit of Exploration	
AB 01			Tunbridge I, swpdr	15	22	N.O.	22	8-15
AB 02			Sunapee stsl	N.O.	N.O.	N.O.	48	0-3
AB 03			Tunbridge stsl, deep	N.O.	42	N.O.	42	3-8
AB 04			Howland exstsil	18	N.O.	28	28	3-8
AB 05			Lyman stl	N.O.	12	N.O.	12	8-15
AB 06			Howland vstsil	18	N.O.	28	28	3-8
AB 07			Tunbridge cobfsl	N.O.	24	N.O.	24	3-8
AB 08			Howland vstsil, swpdr	15	N.O.	18	22	15-35
AB 09			Brayton vstfsl	0	N.O.	12	12	0-3
AB 10			Peru vgrsl	17	N.O.	24	24	0-3
AB 11			Peru sl	18	N.O.	20	20	3-8
AB 12			Lyman stl	N.O.	14	N.O.	14	3-8
AB 13			Peru grsl	N.O.	N.O.	19	19	8-15
AB 14			Scantic sicl	0	N.O.	9	16	0-3
AB 15			Lamoine sil	9	N.O.	9	12	3-8
AB 16			Lamoine stsil	12	N.O.	12	19	3-8
AB 17			Peru stfsl	22	N.O.	24	24	8-15
AB 18			Brayton stsl	4	N.O.	9	12	3-8
AB 19			Peru vgrsl	25	N.O.	26	26	3-8
AB 20			Scantic sicl	0	N.O.	8	16	3-8
AB 21			Brayton stsl	4	N.O.	9	12	3-8
AB 22			Colonel stsl	15	N.O.	16	19	3-8
AB 23			Peru vgrsl	N.O.	N.O.	16	16	3-8
AB 24			Tunbridge stsl	N.O.	36	N.O.	36	3-8
AB 25			Lamoine sil	12	N.O.	12	18	3-8
AB 26			Lyman stfsl	N.O.	19	N.O.	19	8-15
AB 27			Lamoine sil	7	N.O.	12	12	3-8
AB 28			Lamoine sil	9	N.O.	12	12	3-8
AB 29			Tunbridge stfsl	N.O.	31	N.O.	31	3-8
AB 30			Biddeford muck	0	N.O.	18	28	0-3
AB 31			Tunbridge stsl	N.O.	27	N.O.	27	15-35



INVESTIGATOR INFORMATION AND SIGNATURE	
Signature:	Date: 2020-10-21
Name Printed/typed: Rodney Kelshaw	Cert/Lic/Reg. # LSS 552
Title: <input checked="" type="checkbox"/> Licensed Site Evaluator	<input checked="" type="checkbox"/> Licensed Soil Scientist
<input type="checkbox"/> Certified Geologist	<input type="checkbox"/> Other:

SOIL CONDITIONS SUMMARY TABLE		SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES	
Project Name: 3 Corners Solar Project	Applicant Name: 3 Corners, LLC	Project Location (municipality): Benton - T-line	

Lot No.	Exploration Symbol (TP 1, B 2, etc.)	☑ or ☐ if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition (if by S.E.), ● Soil series name (if by C.S.S.), or by ● Geologic unit (if by C.G.)	Depths to (check one):				Ground Surface Slope (%)
				Mottling (seasonal watertable)	Bedrock	☒ inches Firm or Restrictive Layer	☐ cm Limit of Exploration	
	01rke-u		Peru stsl	18	N.O.	18	20	8-15
	01rke-pfo		Brayton vstsl	0	N.O.	14	14	0-3
	01rke-pem		Brayton vstsl	0	N.O.	14	14	0-3
	01rkg-u		Tunbridge sl	N.O.	30	N.O.	30	8-15
	01rkg-w		Lyme lcos, mod. deep	0	30	24	30	0-3
	01cfk-u		Peru sl	N.O.	N.O.	20	20	8-15
	01cfk-w		Brayton sl	4	N.O.	12	20	3-8
	01rkl-u		Colonel vstsl	7	N.O.	12	12	8-15
	01rkl-w		Scantic sil	0	N.O.	8	20	0-3
	01rkr-u		Scantic sil, shallow	7	14	14	14	8-15
	01rkr-pss		Scantic sicl	0	N.O.	3	15	0-3
	01rkr-pem		Scantic sicl	0	N.O.	14	20	0-3
	01rkz-u		Colonel vstsl	10	N.O.	10	12	8-15
	01rkz-pem		Scantic sicl	0	N.O.	3	15	0-3
	01rkz-pss		Scantic sicl	0	N.O.	3	15	0-3
	01rkz-pfo		Scantic sicl	3	N.O.	3	12	0-3
	02cfg-u		Colonel vstsl	12	N.O.	12	12	3-8
	02cfg-w		Brayton sl	0	N.O.	12	20	3-8
	TP 01		Colonel vstsl	11	N.O.	14	15	3-8
	TP 02		Sunapee stsl	N.O.	N.O.	20	20	0-3
	TP 03		Monarda vstsil	0	N.O.	16	19	0-3
	TP 04		Monarda vstsil	0	N.O.	16	19	0-3
	TP 05		Monarda vstsil	0	N.O.	9	13	0-3
	TP 06		Scantic sicl	6	N.O.	10	10	0-3
	TP 07		Burnham mucky sil	0	N.O.	22	24	0-3
	TP 08		Monarda vstsil	3	N.O.	6	15	8-15
	TP 09		Scantic sicl	6	N.O.	10	10	0-3
	TP 10		Lyman stl	N.O.	13	N.O.	13	3-8
	TP 11		Marlow vstsl	N.O.	N.O.		36	3-8
	TP 12		Monarda sil	0	N.O.		12	0-3
	TP 13		Peru grfsl	22	N.O.	30	30	3-8



INVESTIGATOR INFORMATION AND SIGNATURE	
Signature:	Date: 2020-10-21
Name Printed/typed: Rodney Kelshaw	Cert/Lic/Reg. # LSS 552
Title: <input checked="" type="checkbox"/> Licensed Site Evaluator	<input checked="" type="checkbox"/> Licensed Soil Scientist
<input type="checkbox"/> Certified Geologist	<input type="checkbox"/> Other:

SOIL SURVEY REPORT

December 23, 2021

Appendix B FORM F: TEST PIT/AUGER BORING LOGS



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: 3 CORNERS SEAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): BENTON - T-LINE

Exploration Symbol: TP01 Test Pit Boring
1 " Organic horizon thickness Ground surface elev. 218

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibrilc	5YR2.5/2	
6	vstsl		7.5YR5/2	NONE OBSERVED
12		VFR	2.5Y5/3	
18	stsl	FR	5Y5/3	hcr 5/1
24	LOI	15"	DENSE	TILL
30				
36				
42				
48				

soil data by S.E. → Soil Classification: Profile Colonel Condition vstsl Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: Colonel vstsl Hydric Non-hydric Hydrologic Soil Group D

Exploration Symbol: TP02 Test Pit Boring
6 " Organic horizon thickness Ground surface elev. 200

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibrilc	7.5YR2.5/2	
6			7.5YR5/2	NONE OBSERVED
12	stsl	VFR	7.5YR4/4	
18				
24	stcsh	FR	10YR4/4	
30	LOI	20"	FIRM	
36				
42				
48				

soil data by S.E. → Soil Classification: Profile SUNAPEE Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: SUNAPEE Hydric Non-hydric Hydrologic Soil Group D

Exploration Symbol: TP03 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 170

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			10YR2/1	NONE OBSERVED
6	vstsl	FR		
12			2.5Y5/2	hcr 15/1
18	stsl	FI	5Y5/3	hcr 25/1
24				
30	LOI	19"	DENSE	TILL
36				
42				
48				

soil data by S.E. → Soil Classification: Profile MONARDA Condition stsl Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: MONARDA stsl Hydric Non-hydric Hydrologic Soil Group D

Exploration Symbol: TP04 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 172

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			10YR2/1	NONE OBSERVED
6	vstsl	FR		
12			2.5Y5/2	hcr 15/1
18	stsl	FI	5Y5/3	hcr 25/1
24				
30				
36				
42				
48				

soil data by S.E. → Soil Classification: Profile MONARDA Condition stsl Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

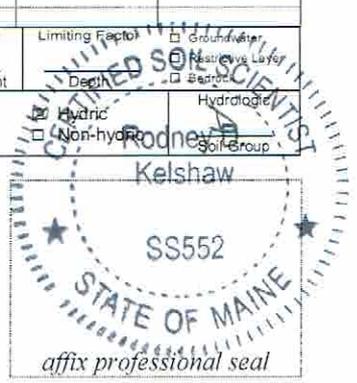
soil data by S.S. → Soil series/phase name: MONARDA stsl Hydric Non-hydric Hydrologic Soil Group D

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: [Signature] Date: 2020-11-03

Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552

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



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS LLC Project Location (municipality): BENTON - T-LINE

Exploration Symbol: TP05 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 170

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0		FR	10YR2/1	NONE OBSERVED
6	vst sil			
12		FI	2.5Y5/2	hor 5%
18				
24	LOI	13"	DENSE	TILL
30				
36				
42				
48				

soil data by S.E. Groundwater
 Restrictive Layer
 Bedrock

soil data by S.S. Hydric Non-hydric Hydrologic D Soil Group

Soil series/phase name: MONARDA vst sil

Exploration Symbol: TP06 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 170

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat muck	hemc	10YR2/2	NONE OBSERVED
6	sil	FR	10YR3/3	hor 5%
12		FI	2.5Y5/1	hor 25%
18				
24	LOI	10"	DENSE	
30				
36				
42				
48				

soil data by S.E. Groundwater
 Restrictive Layer
 Bedrock

soil data by S.S. Hydric Non-hydric Hydrologic D Soil Group

Soil series/phase name: SCANTIC sil

Exploration Symbol: TP07 Test Pit Boring
22 " Organic horizon thickness Ground surface elev. 172

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6				
12	MUCK	sapric	7.5YR2.5/1	
18				
24	sil	FI	2.5Y5/2	
30				
36	LOI	24"	DENSE	
42				
48				

soil data by S.E. Groundwater
 Restrictive Layer
 Bedrock

soil data by S.S. Hydric Non-hydric Hydrologic D Soil Group

Soil series/phase name: BURNHAM mucky sil

Exploration Symbol: TP08 Test Pit Boring
1 " Organic horizon thickness Ground surface elev. 146

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	muck	sapric	10YR2/1	NONE OBSERVED
6		FR	10YR4/2	hor 15%
12	vst sil	FI	2.5Y5/2	hor 10%
18			10YR4/6	hor 25%
24	LOI	15"	DENSE	TILL
30				
36				
42				
48				

soil data by S.E. Groundwater
 Restrictive Layer
 Bedrock

soil data by S.S. Hydric Non-hydric Hydrologic D Soil Group

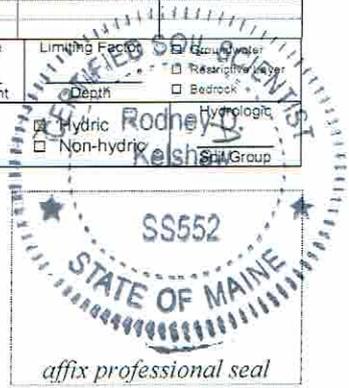
Soil series/phase name: MONARDA vst sil

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: [Signature] Date: 2020-11-03

Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552

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



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS LLC Project Location (municipality): BENTON - T-LINE

Exploration Symbol: TP09 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 138

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	rock	sapric	10YR2/1	NONE OBSERVED
6	sil	VFR	5Y4/1	10% 10%
12	sil	FI		
18				
24				
30	LOI	19"	DENSE	
36				
42				
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: SCANTIC sil Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: TP10 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 202

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	rock	fabric	7.5YR2/2	
6	chsk	VFR	7.5YR5/1	NONE
12	chsk	VFR	7.5YR4/4	OBSERVED
18	gsil		7.5YR4/6	
24	LOI	13"	BEDROCK	
30				
36				
42				
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: LYMAN chsk Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: TP11 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 174

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6				
12	BORROW		PIT	NONE
18				OBSERVED
24				
30				
36				
42				
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: MARLOW vstsl Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: TP12 Test Pit Boring
8 " Organic horizon thickness Ground surface elev. 198

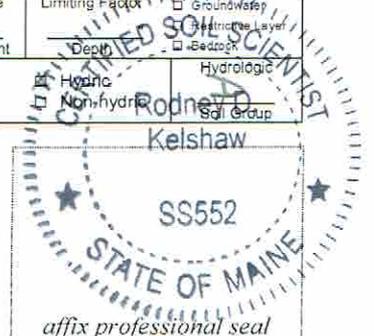
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	rock	sapric	7.5YR2.5/1	NONE OBSERVED
12	sil	FI	2.5Y4/2	hor 20%
18				
24	LOI	12"	DENSE TILL	
30				
36				
42				
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: MONARDA sil Hydric Non-hydric Hydrologic C Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Rodney Kelshaw Date: 2020-11-03
 Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552
 Title: Licensed Site Evaluator Certified Soil Scientist
 Certified Geologist Other:



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): BENTON, T-LINE

Exploration Symbol: TP13 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 220

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	fsl		5YR2.5/1	
6			5YR2.6/2	
12	vbfsl	VFR	5YR4/6	NONE
18			7.5YR4/6	ORSEMED
24		FR	10YR5/6	
30	grfsl		2.5Y4/4	hor 5/1
36				
42	LOI	30"	DENSE	TILL
48				

soil data by S.E. ▶ Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. ▶ Soil series/phase name: PERU grfsl Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: _____ Test Pit Boring
 _____ " Organic horizon thickness Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6				
12				
18				
24				
30				
36				
42				
48				

soil data by S.E. ▶ Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. ▶ Soil series/phase name: _____ Hydric Non-hydric Hydrologic _____ Soil Group

Exploration Symbol: _____ Test Pit Boring
 _____ " Organic horizon thickness Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6				
12				
18				
24				
30				
36				
42				
48				

soil data by S.E. ▶ Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. ▶ Soil series/phase name: _____ Hydric Non-hydric Hydrologic _____ Soil Group

Exploration Symbol: _____ Test Pit Boring
 _____ " Organic horizon thickness Ground surface elev. _____

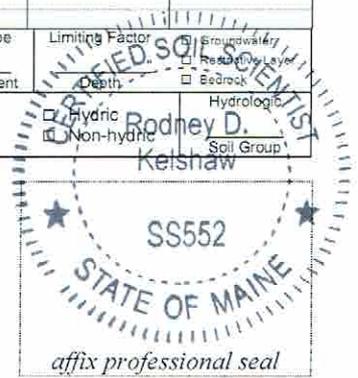
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6				
12				
18				
24				
30				
36				
42				
48				

soil data by S.E. ▶ Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. ▶ Soil series/phase name: _____ Hydric Non-hydric Hydrologic _____ Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: [Signature] Date: 2020-11-03
 Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552
 Title: Licensed Site Evaluator Certified Soil Scientist
 Certified Geologist Other:



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITY TWP - ARARY

Exploration Symbol: 100 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 315

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			7.5YR2.5/3	
6	stfsl	VFR	7.5YR4/4	
12			10YR3/6	NONE OBSERVED
18	stfsl	FR	10YR4/6	
24	gfsl	FI	10YR4/3	
30	LOI	25"	Too STONY &	
36		DENSE	TILL	
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. Soil series/phase name: PERU stfsl, vst surface Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 101 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 322

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			7.5YR2.5/3	
6	stfsl	VFR	7.5YR4/4	
12			10YR3/6	
18	stfsl	FR	10YR4/6	
24	gfsl		10YR4/3	NONE OBSERVED
30	vstfsl	FI	2.5Y5/3	
36		VEI	10YR3/6	
42	LOI	34"	DENSE TILL	
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. Soil series/phase name: PERU vstfsl, vst surface Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 102 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 315

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	stfsl	VFR	7.5YR2.5/3	
6				
12	stfsl	FR	7.5YR3/4	NONE OBSERVED
18	stfsl		10YR4/4	
24	vstfsl	FI	10YR3/6	
30	LOI	26"	DENSE TILL	
36				
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. Soil series/phase name: PERU stfsl, vst surface Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: 103 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 308

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	vstsl	VFR	7.5YR2.5/2	
6				NONE OBSERVED
12	gfsl	FR	10YR3/2	
18			10YR4/4	
24	vstsl	FI	10YR4/3	hcr 2/1
30	LOI	24"	Too STONY &	
36		DENSE	TILL	
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. Soil series/phase name: COLONEL gfsl, st surface Hydric Non-hydric Hydrologic C Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Rodney Kelshaw Date: 2020-11-03

Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552

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



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS SOLAR, LLC Project Location (municipality): CLINTON & UNITY TWP - ARRAY

Exploration Symbol: 104 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 275

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibril	5YR3/2	
6	vstfsl	VFR	5YR4/3	←5YR6/1
12	gfsl	FR	7.5YR4/3	NONE OBSERVED
18			10YR4/3	
24	stfsl		10YR4/4	hor 2%
30	stfsl	F=	2.5Y4/4	
36	LOI	26"	DENSE	TILL

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. → Soil series/phase name: PERU stfsl, st surface Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: 105 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 300

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	stsl	VFR	7.5YR2.5/3	
12	stfsl	FR	7.5YR3/4	NONE OBSERVED
18	stsl		10YR4/4	
24	vstsl	FI	10YR3/6	
30	LOI	24"	DENSE	TILL

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. → Soil series/phase name: PERU stfsl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 106 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 305

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	sl	VFR	7.5YR3/3	
6	cabsl	FR	10YR4/4	NONE OBSERVED
12	gfsl		2.5Y5/6	
18	sl	FI	5Y4/3	hor 2%
24	LOI	24"	DENSE	TILL

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. → Soil series/phase name: PERU stfsl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 107 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 265

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	vstsl	VFR	7.5YR2.5/1	NONE
12	gfsl	FI	10YR4/3	OBSERVED
18			2.5Y4/3	hor 5%
24	LOI	16"	DENSE	TILL

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

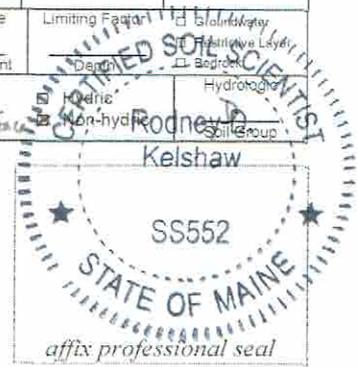
soil data by S.S. → Soil series/phase name: COLONEL vstsl Hydric Non-hydric Hydrologic D Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: [Signature] Date: 2020-11-03

Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552

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



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITY TWP. -ARRAY

Exploration Symbol: 108 Test Pit Boring
1 " Organic horizon thickness Ground surface elev. 215

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	7.5YR2.5/2	
0-6	Afsl	VFR	5YR4/3	
6-12		FR	10YR4/4	NONE OBSERVED
12-18	gsfl			
18-24		FI	2.5Y/4	
24-30	LOI	24"	DENSE	TILL
30-36				
36-42				
42-48				

soil data by S.E. → Soil Classification: Profile PERU Condition gsfl Slope Percent Limiting Factor Depth " Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: PERU gsfl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 109 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 195

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			7.5YR2.5/2	
0-6	l	VFR	10YR4/3	NONE OBSERVED
6-12	fsl	FR	2.5Y4/3	
12-18				
18-24	gsfl		2.5Y4/4	hor 2%
24-30				
30-36	LOI	25"	DENSE	TILL
36-42				
42-48				

soil data by S.E. → Soil Classification: Profile TELOS Condition gsfl Slope Percent Limiting Factor Depth " Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: TELOS gsfl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 110 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 280

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	vstfsl	VFR	7.5YR3/2	
0-6				
6-12	vgfsl	FR	7.5YR3/4	NONE OBSERVED
12-18			10YR4/3	
18-24	sl	FI		
24-30				
30-36	LOI	22"	DENSE	TILL
36-42				
42-48				

soil data by S.E. → Soil Classification: Profile PERU Condition vstfsl, surface Slope Percent Limiting Factor Depth " Groundwater Restrictive Layer Bedrock

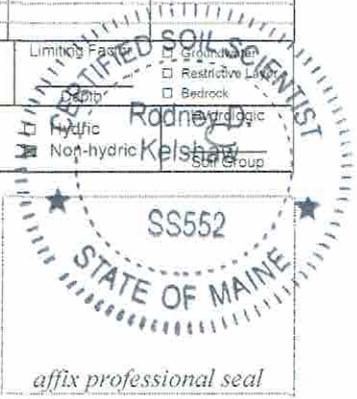
soil data by S.S. → Soil series/phase name: PERU vstfsl, surface Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 111 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 225

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	7.5Y2.3/3	
0-6	grfsl			
6-12	grsh		7.5YR4/6	NONE OBSERVED
12-18	sl	VFR	10YR4/6	OBSERVED
18-24			10YR4/3	
24-30	vgfsl			
30-36			2.5Y5/4	
36-42	LOI	31"	BEDROCK	
42-48				

soil data by S.E. → Soil Classification: Profile TUNBRIDGE Condition gsfl Slope Percent Limiting Factor Depth " Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: TUNBRIDGE gsfl Hydric Non-hydric Hydrologic D Soil Group



INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Rodney Kelshaw Date: 2020-11-03

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 Certified Geologist Other:

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS LLC Project Location (municipality): CLINTON & UNITY TWP - ARRAY

Exploration Symbol: 112 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 220

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	7.5YR3/3	
6	gfssl			
12	gfssl		7.5YR4/6	
18	sl	VFR	10YR4/6	NONE OBSERVED
24	vgfssl		10Y4/3	
30			2.5Y5/4	
36				
42	LOI	31"	BEDROCK	
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: TUNBRIDGE gfssl Hydric Non-hydric Hydrologic: C Soil Group

Exploration Symbol: 113 Test Pit Boring
6 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	stmskyl	VFR	7.5YR2.5/2	NONE OBSERVED
12	vstfssl	FR	2.5Y4/2	hcr 5%
18	stfsl			
24				hcr 10%
30	gfsl	FI	2.5Y5/4	
36				
42	LOI	48"	PROBE	DEPTH
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: MONARDA stfshystrsurface Hydric Non-hydric Hydrologic: D Soil Group

Exploration Symbol: 114 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 220

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	h	VFR	7.5YR3/3	
6	fsl		7.5YR4/6	NONE OBSERVED
12			10YR4/3	
18	gfssl	FR	2.5Y5/6	
24	vgfssl	VFL	2.5Y4/3	hcr 2%
30				
36				
42	LOI	34"	DENSE TILL	
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

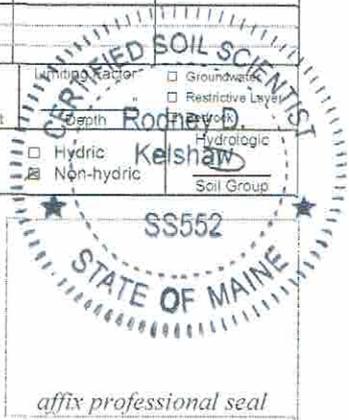
soil data by S.S. >> Soil series/phase name: PERU gfssl Hydric Non-hydric Hydrologic: D Soil Group

Exploration Symbol: 115 Test Pit Boring
6 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	7.5YR2.5/2	
6			7.5YR5/2	NONE OBSERVED
12	gfssl	VFR	5YR3/4	
18	gfssl	FR	7.5YR4/4	
24			10YR4/3	hcr 2% hcr 5%
30				
36	LOI	30"	DENSE TILL	
42				
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: COLONEL gfssl Hydric Non-hydric Hydrologic: D Soil Group



INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Rodney K. Kelshaw Date: 2020-11-03

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 Certified Geologist Other:

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITY TWP - ARRAY

Exploration Symbol: 116 Test Pit Boring
1 " Organic horizon thickness Ground surface elev. 215

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	7.5YR2.5/1	
0-6	vsfsl	VFR	7.5YR3/2	
6-12			5YR4/4	NONE OBSERVED
12-18	vgfsl	FR	5YR3/4	
18-24	vgfsl	FI	7.5YR3/4	hcr 2%
24-30			10YR4/4	
30-36	LOI	23"	BEDROCK	
36-42				
42-48				

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. Soil series/phase name: TUNBRIDGE gfsl, hcr dr Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 117 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	7.5YR2.5/2	
0-6	chfsl	VFR	10YR4/4	
6-12	grfsl	FR	7.5YR4/4	NONE OBSERVED
12-18			7.5YR4/6	
18-24	vgfsl		10YR4/6	
24-30	vgfsl		10YR4/4	
30-36	LOI	27"	BEDROCK	
36-42				
42-48				

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. Soil series/phase name: TUNBRIDGE gfsl Hydric Non-hydric Hydrologic Soil Group: C

Exploration Symbol: 118 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 210

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	7.5YR2.5/2	
0-6	vsfsl		7.5YR3/3	
6-12	vgfsl	VFR	10YR4/4	NONE OBSERVED
12-18				
18-24				
24-30		FR	2.5Y4/4	
30-36				
36-42				
42-48	LOI	41"	BEDROCK	

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

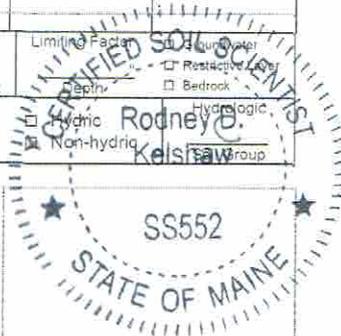
soil data by S.S. Soil series/phase name: TUNBRIDGE vgsfl Hydric Non-hydric Hydrologic Soil Group: C

Exploration Symbol: 119 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 230

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	7.5YR2.5/2	
0-6	vsfsl		7.5YR3/3	
6-12	vgfsl	VFR	10YR4/4	NONE OBSERVED
12-18				
18-24				
24-30		FR	2.5Y4/4	
30-36				
36-42	LOI	31"	BEDROCK	
42-48				

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. Soil series/phase name: TUNBRIDGE vgsfl Hydric Non-hydric Hydrologic Soil Group: C



INVESTIGATOR INFORMATION AND SIGNATURE

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 Certified Geologist Other:

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITY, TWP - ARRAY

Exploration Symbol: 120 Test Pit Boring
 0" Organic horizon thickness Ground surface elev. 230

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Cobl	VFR	7.5YR2.5/2	
6				
12	cobfsl		7.5YR4/4	NONE OBSERVED
18	vgfsl	FR	10YR4/4	
24	gfsl		2.5Y4/4	
30				
36	LOI	29"	Too	STONNY
42		DENSE	TILL	
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: PERU gfsfsl, vst surface Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: 121 Test Pit Boring
 0" Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	fsl	VFR	5YR2.5/2 5YR5/1	
6				NONE OBSERVED
12	sl		5YR4/4 10YR4/6	
18	fsl	FR	2.5Y4/4	
24	sl	FI		hcc 10%
30	gfsl			
36	LOI	30"	BEDROCK	
42				
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: TUNBRIDGE sl, med well dr Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 122 Test Pit Boring
 3" Organic horizon thickness Ground surface elev. 195

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibril	7.5YR2.5/2	
6	exchd	VFR	7.5YR5/1	NONE OBSERVED
12			10YR4/4	
18	vgfsl			
24		FR	2.5Y4/4	hcc 5%
30		FI		
36	LOI	27"	DENSE	TILL
42				
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: COLONEL vgfsl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 123 Test Pit Boring
 0" Organic horizon thickness Ground surface elev. 190

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	fsl		5YR2.5/2 5YR5/1	
6				
12	sl	VFR	5YR4/4	NONE OBSERVED
18	fsl	FR	10YR4/6	
24				
30	gfsl	VFI	2.5Y5/4	hcc 10%
36				
42	LOI	33"	DENSE	TILL
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

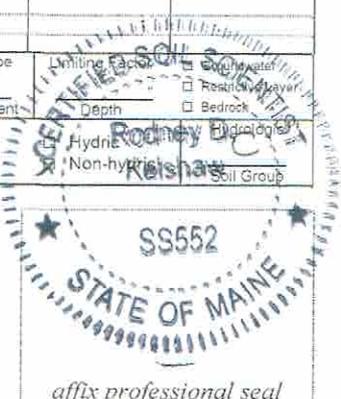
soil data by S.S. >> Soil series/phase name: PERU gfsfsl Hydric Non-hydric Hydrologic D Soil Group

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CUNTON & UNITY TWP. - ARRAY

Exploration Symbol: 124 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 195

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibril	5YR2.5/1	
6	vfsl	FI	7.5YR5/1	NONE OBSERVED
12	sil	FI	10YR5/1	hcf 5%
36	LOI	29"	DENSE	TILL

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: MONARDA sil Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 125 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibril	10YR2/1	
6	stfsl	VFR	10YR5/2	NONE OBSERVED
12	vgfsl	FR	7.5Y4/3	
18	vgvfsl		5Y5/3	hcf 5%
24	vgfsl	FI	5Y5/4	
36	LOI	26"	DENSE	TILL

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: COLONEL vgfsl Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 126 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibril	7.5YR2.5/2	
6	sl	VFR	7.5YR4/6	NONE OBSERVED
12	gfsl	FR	10YR4/6	
24		FI	2.5Y4/6	hcf 2%
30	LOI	24"	DENSE	TILL

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: PERU gfsl Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 127 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 195

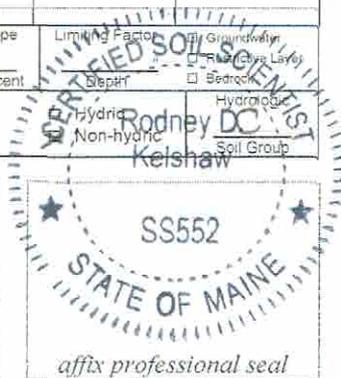
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	st peat	fibril	7.5YR2.5/2	
6	stfsl	VFR	7.5YR4/6	
12	gfsl		10YR4/6	NONE OBSERVED
24	sl	FR	2.5Y4/4	
36				
42	LOI	34"	DENSE	TILL

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: PERU stsl Hydric Non-hydric Hydrologic Soil Group: D

INVESTIGATOR INFORMATION AND SIGNATURE

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



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CUNTON & VANITY TWP AGRAY

Exploration Symbol: 128 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 190

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	vstpeat	fibric	7.5YR2.5/2	
8		VFR	7.5YR4/6	NONE OBSERVED
12	vstsl	FR	10YR4/4	
18	vgrsl		2.5Y4/4	
24				
30	LOI	22"	TOO STONY	
36		DENSE	TILL	
42				
48				

soil data by S.E. >> Soil Classification: Profile PERU Condition vstsl Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: PERU vstsl Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 129 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 250

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6				
12	OLD FOUNDATION			
18	EXCAVATED TO			
24	BELOW	60"		NONE OBSERVED
30	stfsl			
36				
42				
48				

soil data by S.E. >> Soil Classification: Profile MARLOW Condition stfsl, vstsurface Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: MARLOW stfsl, vstsurface Hydric Non-hydric Hydrologic Soil Group: C

Exploration Symbol: 130 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 25

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	stl	VFR	5YR2.5/2	
12			7.5YR3/4	NONE OBSERVED
18	exgrstl	FR	10YR4/4	
24				
30	fsl	FI	2.5Y5/4	hor 2%
36				
42	LOI	33"	DENSE	TILL
48				

soil data by S.E. >> Soil Classification: Profile PERU Condition exgrstl, st surface Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

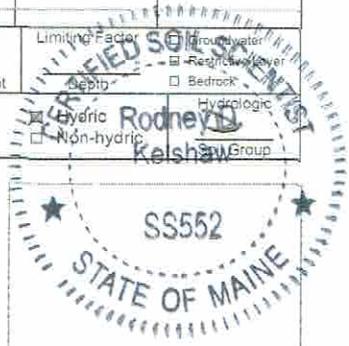
soil data by S.S. >> Soil series/phase name: PERU exgrstl, st surface Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 131 Test Pit Boring
7 " Organic horizon thickness Ground surface elev. 235

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	mucky peat	hemic	7.5YR2.5/2	NONE OBSERVED
12	sil	FR	10YR4/2	hor 2%
18			2.5Y4/2	
24	l	FI	5Y4/2	hor 20%
30				
36	LOI	24"	DENSE	TILL
42				
48				

soil data by S.E. >> Soil Classification: Profile MONARD Condition sil Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: MONARD sil Hydric Non-hydric Hydrologic Soil Group: D



INVESTIGATOR INFORMATION AND SIGNATURE

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CANTON & UNITY TWP - AREAY

Exploration Symbol: 132 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 215

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	2.5YR2.5/1	
			7.5YR4/4	
6			7.5YR5/2	
	sl		5YR4/4	
12		L	7.5YR4/4	NONE
	ls			OBSERVED
18			10YR4/4	
24				
	vgfsl		2.5Y4/4	
30			5Y4/3	
36				
	gfls			
42	LOI	60"		
48				

soil data by S.E. → Soil Classification: Profile Condition Slope: Percent Limiting Factor: Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: CANTON ls Hydric Non-hydric Hydrologic: A Soil Group

Exploration Symbol: 133 Test Pit Boring
4 " Organic horizon thickness Ground surface elev. 220

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	mucky peat	hemic	10YR3/3	NONE
6				OBSERVED
	sil	FR	10YR4/2	hcr 2%
12				
		FT	2.5Y4/2	hcr 20%
18				
24				
	gfls		10YR4/4	
30				
36				
	LOI	34"	DEASE	TILL
42				
48				

soil data by S.E. → Soil Classification: Profile Condition Slope: Percent Limiting Factor: Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: MONARDA sil Hydric Non-hydric Hydrologic: D Soil Group

Exploration Symbol: 134 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 225

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	5YR2.5/2	
6			7.5YR6/2	NONE
	fsl	VFR	7.5YR4/4	OBSERVED
12				
			10YR4/6	
18				
	vgfsl			
24			10YR4/3	
30				
	LOI	29"	BEDROCK	
36				
42				
48				

soil data by S.E. → Soil Classification: Profile Condition Slope: Percent Limiting Factor: Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: TUNBRIDGE vgfsl Hydric Non-hydric Hydrologic: C Soil Group

Exploration Symbol: 135 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 220

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	5YR2.5/2	
6			7.5YR6/2	
	fsl	VFR	5YR4/4	NONE
12			7.5YR4/4	OBSERVED
18				
	g-fsl	FR	10YR4/4	
24			2.5Y5/6	
30				
	LOI	29"	BEDROCK	
36				
42				
48				

soil data by S.E. → Soil Classification: Profile Condition Slope: Percent Limiting Factor: Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. → Soil series/phase name: TUNBRIDGE fsl Hydric Non-hydric Hydrologic: C Soil Group



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 Certified Geologist Other:

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS LLC Project Location (municipality): CLINTON & UNITY TWP - ARRAY

Exploration Symbol: 136 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 240

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	5YR2/1	
6			5YR4/2	
12	vg-fsl	VFR	7.5YR6/2 7.5YR4/6	NONE OBSERVED
18	ex-grfsl		7.5YR5/6	
24			10YR4/4	
30		FR		
36	ex-grfsl		10YR4/6	
42				
48	LOI	40"	DENSE	TILL

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 Soil series/phase name: MARLOW vgrsl Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: 137 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 235

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	5YR2.5/1	
6			7.5YR3/3	
12	fsl	VFR	7.5YR4/6	NONE OBSERVED
18	grfsl	FR	10YR4/3	hcc 2%
24		FI	2.5Y4/4	
30				
36	LOI	25"	DENSE	TILL
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 Soil series/phase name: Colowec fsl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 138 Test Pit Boring
3 " Organic horizon thickness Ground surface elev. 255

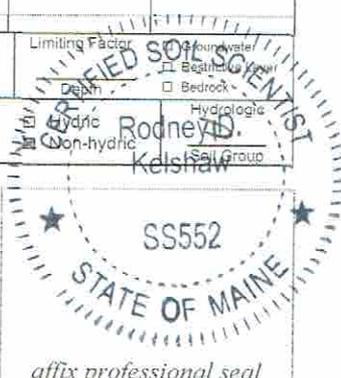
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	2.5YR2.5/1	
6			5YR6/2	
12	fsl	VFR	7.5YR4/4	NONE OBSERVED
18				
24	grfsl	FR	10YR4/4	
30				
36	LOI	30"	BEDROCK	
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 Soil series/phase name: TUNBRIDGE fsl Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: 139 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 255

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	2.5YR2.5/1	
6			5YR2.5/1	
12	fsl	VFR	7.5YR4/4	NONE OBSERVED
18	grfsl		5YR6/6 5YR4/6	
24	LOI	19"	BEDROCK	
30				
36				
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 Soil series/phase name: Lyman fsl Hydric Non-hydric Hydrologic C Soil Group



INVESTIGATOR INFORMATION AND SIGNATURE
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 Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552
 Title: Licensed Site Evaluator Certified Soil Scientist
 Certified Geologist Other:

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS LLC Project Location (municipality): CLINTON & UNITY TWP. AGENCY

Exploration Symbol: 140 Test Pit Boring
9 " Organic horizon thickness Ground surface elev. 220

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	mucky peat	hemic	5YR2.5/1	NONE OBSERVED
12			10YR2.5/2	hcr 2%
18		FR		hcr 5%
24	sl		2.5Y4/2	
30		FI		
42	LOI	37"	DENSE	TILL
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: BRATTON sl.vst.svf. Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 141 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 200

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	5Y2.5/2	
6			7.5Y2.6/2	
12	fsl	VFR	5YR4/4	NONE OBSERVED
18		FR	7.5YR4/4	
24	sl	FI	10YR4/3	
30	LOI	25"	DENSE	TILL
42				
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: PERU fsl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 142 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 230

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	5YR2.5/2	
6		VFR	7.5Y2.6/2	
12			5YR2.4/4	NONE OBSERVED
18	fsl	FR	7.5YR2.4/4	
24			10YR2.4/4	
30		FI	2.5Y4/4	hcr 2%
42	LOI	32"	DENSE	TILL
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: PERU fl Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: 143 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 225

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	Fibric	5Y2.5/2	
6		VFR	5YR2.6/2	NONE OBSERVED
12	fsl	FR	5YR2.4/4	
18			7.5YR2.4/4	
24	cobfsl	FI	10YR2.4/6	
30			2.5Y4/6	hcr 5%
42	LOI	30"	DENSE	TILL
48				

soil data by S.E. >> Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. >> Soil series/phase name: PERU fsl Hydric Non-hydric Hydrologic C Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

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



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITY TWP - ARAM

Exploration Symbol: 144 Test Pit Boring
6 " Organic horizon thickness Ground surface elev. 195

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	vst mucky peat	hemic	5YR2.5/1	NONE OBSERVED
12	vst sl	FR	2.5Y5/2	hor 5%
18				
24	gs sl	FF	5Y5/2	hor 10%
30				
36	LOI	25"	DENSE	TILL
42				
48				

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: BRAYTON vstsl, st surface Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 145 Test Pit Boring
1 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	5YR2.5/2	
6	excl	VFR	7.5YR2.5/1	NONE OBSERVED
12	vgss sl	FR	10YR4/3	
18	vgst sl	FI	2.5Y4/3	hor 5%
24	LOI	20"	Too	STONY
30			DENSE	TILL
36				
42				
48				

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: TELOS vgst sl, st surf Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 146 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	5YR2.5/2	
6	st fsl	VFR	5YR4/6	
12			7.5YR4/6	NONE OBSERVED
18	gst sl	FR	10YR4/6	
24				
30	fsl		2.5Y4/4	
36				
42	LOI	32"	DENSE	TILL
48				

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: PERU stfsl, st surface Hydric Non-hydric Hydrologic C Soil Group

Exploration Symbol: 147 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	mucky vstsl		10YR2.5/1	NONE OBSERVED
6	vstsl	FR	2.5Y4/2	hor 10%
12				
18	st sl		5Y5/3	
24	sl	FI		
30				
36	LOI	24"	DENSE	TILL
42				
48				

soil data by S.E. >> Soil Classification: Profile Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

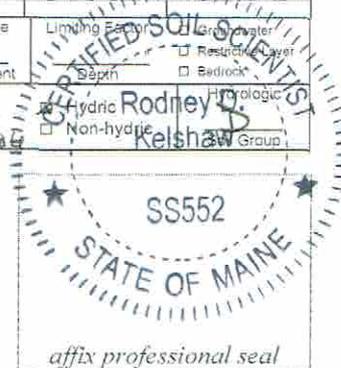
soil data by S.S. >> Soil series/phase name: BRAYTON vstsl, st surface Hydric Non-hydric Hydrologic C Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: [Signature] Date: 2020-11-03

Name Printed/typed: Rodney Kelshaw Cert/Lic/Reg. # 552

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



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITY TWP - ARRAY

Exploration Symbol: 148 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 205

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	5YR2.5/2	NONE
6				
12	fsl	VFR	7.5YR4/4	OBSERVED
18		FR	10YR4/4	
24				
30		FI	2.5Y4/3	hcf 10%
36				
42	LOI	30"	DENSE	TILL
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: COLONEL fsl Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 149 Test Pit Boring
8 " Organic horizon thickness Ground surface elev. 190

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	5YR2.5/2	NONE
6				
12	vstfsl		5YR4/2	NONE OBSERVED
18		VFR	7.5YR4/4	
24	vstsl		10YR4/4	hcf 10%
30		FR		
36	LOI	30"	DENSE	TILL
42				
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: COLONEL vstsl Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 150 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 195

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	5YR2.5/2	NONE
6	sl	VFR	7.5YR6/2	
12	stsl	FR	7.5YR3/4	NONE OBSERVED
18				
24		FI	10YR4/3	
30			2.5Y4/3	hcf 5%
36				
42	LOI	72"	PT DEPTH	
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: PERU stsl, stsurface Hydric Non-hydric Hydrologic Soil Group: D

Exploration Symbol: 151 Test Pit Boring
18 " Organic horizon thickness Ground surface elev. 185

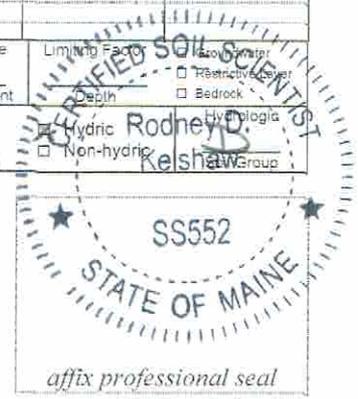
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6	st muc	Sapre	5YR2.5/2	NONE OBSERVED
12				
18				
24	vstsl	FI	5G4/1	
30	LOI	22"	DENSE	TILL
36				
42				
48				

soil data by S.E. Groundwater Restrictive Layer Bedrock
 Soil Classification: Slope: Limiting Factor:
 Profile: Condition: Percent: Depth:

soil data by S.S. Soil series/phase name: BURNHAM vstmuc Hydric Non-hydric Hydrologic Soil Group: D

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SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITE TWP - AFRAY

Exploration Symbol: 152 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 185

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			5YR2.5/1 5YR5/2	
6		VFR	10YR3/4	NONE OBSERVED
12		FR	2.5Y4/4	
18			2.5Y5/6	
24	sl	FI	5Y5/4	hcr 10%
30		VFI		
35				
42	LOI	32"	DENSE	TILL
48				

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. → Soil series/phase name: PERU sl, st surface Hydric Non-hydric Hydrologic Soil Group D

Exploration Symbol: 153 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 190

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			5YR2.5/1 5YR5/2	
6		VFR	10YR3/4	NONE OBSERVED
12				
18	stsl	FR	2.5Y4/4	
24			2.5Y5/6	hcr 10%
30		FI	5Y5/4	
35		VFI		
42	LOI	32"	DENSE	TILL
48				

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. → Soil series/phase name: CHESINCOOK stsl Hydric Non-hydric Hydrologic Soil Group D

Exploration Symbol: 154 Test Pit Boring
1 " Organic horizon thickness Ground surface elev. 185

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			5YR2.5/2 7.5YR4/3	
6		VFR	7.5YR4/6	NONE OBSERVED
12	l		10YR4/6	
18		FR	2.5Y4/6	hcr 5%
24	sl			
30	grsl	FI	5Y5/3	
36	LOI	29"	DENSE	TILL
42				
48				

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. → Soil series/phase name: Coxwell Hydric Non-hydric Hydrologic Soil Group S

Exploration Symbol: 155 Test Pit Boring
0 " Organic horizon thickness Ground surface elev. 185

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0				
6		VFR	7.5YR3/2	
12	cobsl		7.5YR4/4	NONE OBSERVED
18			10YR4/6	
24	grsl	FR		
30		FI	2.5Y4/3	hcr 10%
36	LOI	30"	DENSE	TILL
42				
48				

soil data by S.E. → Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

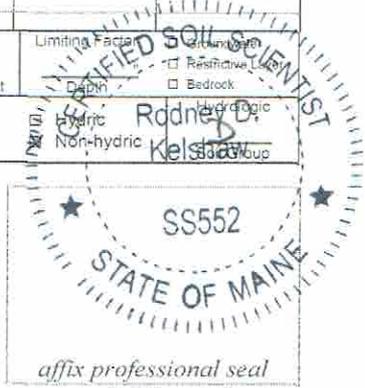
soil data by S.S. → Soil series/phase name: PERU cobsl Hydric Non-hydric Hydrologic Soil Group S

INVESTIGATOR INFORMATION AND SIGNATURE

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SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): CLINTON & UNITY TWP - ARRAY

Exploration Symbol: 156 Test Pit Boring
10 " Organic horizon thickness Ground surface elev. 175

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	exst muck	sapric	7.5YR2.5/1	NONE OBSERVED
6				
12	vstsl	FI	2.5Y4/2	hcr 15%
18	stl	VFI	5Y5/3	hcr 15%
24				
30	LOI	20"	DENSE	TILL
36				
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. Soil series/phase name: BRAYTON vstsl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 157 Test Pit Boring
12 " Organic horizon thickness Ground surface elev. 175

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	MUCK	sapric	7.5YR2.5/1	NONE OBSERVED
6				
12				
18	sl	FI	2.5Y4/2	hcr 15%
24	stl	VFI	5Y5/3	hcr 15%
30				
36	LOI	24"	DENSE	
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. Soil series/phase name: SCANTIC sl Hydric Non-hydric Hydrologic D Soil Group

Exploration Symbol: 158 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 230

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	2.5YR2.5/1 7.5YR4/4 7.5YR5/2	
6	sl		5Y2W/4	
12				
18	ls	L	10YR4/4	NONE OBSERVED
24				
30	vgcls		2.5Y4/4	
36	gcls		5Y4/3	
42	LOI	72"	LARGE P.I.T	
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

soil data by S.S. Soil series/phase name: COLTON ls Hydric Non-hydric Hydrologic A Soil Group

Exploration Symbol: 200 Test Pit Boring
2 " Organic horizon thickness Ground surface elev. 210

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	peat	fibric	10YR2/2 7.5YR4/4	
6				
12		FR	7.5Y6/2	NONE OBSERVED
18	vstsl			
24		FI	7.5Y4/3	hcr 5%
30				
36	LOI	26"	DENSE	TILL
42				
48				

soil data by S.E. Soil Classification Slope Limiting Factor Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth

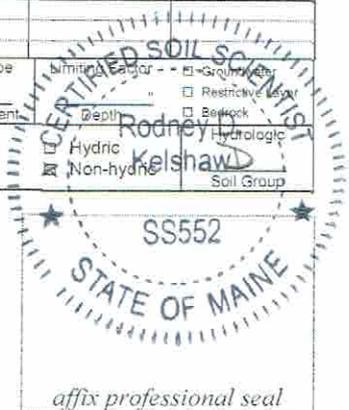
soil data by S.S. Soil series/phase name: TELOS vstsl Hydric Non-hydric Hydrologic A Soil Group

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: 3 CORNERS SOLAR PROJECT Applicant Name: 3 CORNERS, LLC Project Location (municipality): BENTON - SUBSTATION

Exploration Symbol: TP 159 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 228

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	<u>l</u>		<u>7.5YR 3/3</u>	
6	<u>gcl</u>		<u>7.5YR 4/6</u>	<u>NONE OBSERVED</u>
12		<u>VFR</u>	<u>10YR 4/6</u>	
18	<u>vg sil</u>			
24	<u>vg l</u>			
30		<u>FR</u>	<u>10YR 4/3</u>	
36	<u>LOI 28" BEDROCK</u>			
42				
48				

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. Soil series/phase name: TUNBRIDGE vgsil Hydric Non-hydric Hydrologic Soil Group: C

Exploration Symbol: TP 160 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 222

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			<u>7.5YR 3/3</u>	
6				
12		<u>VFR</u>		
18			<u>10YR 4/6</u>	<u>NONE OBSERVED</u>
24	<u>gcl</u>			
30		<u>FR</u>	<u>10YR 4/4</u>	
36				
42	<u>LOI 38" BEDROCK</u>			
48				

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. Soil series/phase name: TUNBRIDGE vgl Hydric Non-hydric Hydrologic Soil Group: C

Exploration Symbol: TP 161 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 222

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			<u>7.5YR 3/3</u>	
6				
12		<u>VFR</u>		<u>NONE OBSERVED</u>
18	<u>gcl</u>	<u>FR</u>	<u>10YR 4/4</u>	
24				
30			<u>2.5Y 4/4</u>	<u>hcr 2/1</u>
36				
42				
48	<u>LOI 42" DENSE TILL</u>			

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. Soil series/phase name: PERU gcl Hydric Non-hydric Hydrologic Soil Group: C

Exploration Symbol: TP 162 Test Pit Boring
 " Organic horizon thickness Ground surface elev. 217

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			<u>10YR 3/3</u>	
6	<u>l</u>			
12		<u>VFR</u>		<u>NONE OBSERVED</u>
18			<u>2.5YR 4/4</u>	
24	<u>gfsl</u>	<u>FR</u>	<u>10YR 4/6</u>	
30			<u>10YR 4/4</u>	<u>hcr 5/1</u>
36				
42				
48	<u>LOI 39" DENSE TILL</u>			

soil data by S.E. Soil Profile Classification Condition Slope Percent Limiting Factor Depth Groundwater Restrictive Layer Bedrock

soil data by S.S. Soil series/phase name: PERU gfsl Hydric Non-hydric Hydrologic Soil Group: S

INVESTIGATOR INFORMATION AND SIGNATURE

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SOIL SURVEY REPORT

December 23, 2021

Appendix C SOIL MAP UNIT DESCRIPTIONS



SOIL SURVEY REPORT

December 23, 2021

Table 1. Map Unit Descriptions Summary

Map Unit Symbol	Map Unit Name	HSG	Drainage Class	Bedrock	Frost Action	Ksat	Concrete Corrosion	Steel Corrosion	Fence 36	Rutting Hazard	Flooding Potential
BmA	Burnham/Monarda Complex	D	Very Poorly & Poorly	Very Deep	High	Mod. High to High/Mod. Low or Low	High	High	Very Limited	Severe	None
BrA, BrB, BrC	Brayton vstfsl	D	Poorly	Very Deep	High	Mod. High or High/Mod. Low or Mod. High	High	High	Very Limited	Severe	None
BsA	Biddeford/Scantic Complex	D	Very Poorly & Poorly	Very Deep	High	Mod. High or High/Mod. Low or Low	High	High	Very Limited	Severe	None
CoA, CoB	Colonel stsl	D	Somewhat Poorly	Very Deep	High	Mod. High or High/Mod. Low or High	High	High	Very Limited	Severe	None
CpA, CpB, CpC	Colonel/Peru Complex	C/D	Somewhat Poorly & Mod. Well	Very Deep	Moderate	Mod. High or High/Mod. Low or High	High	High	Very Limited	Moderate to Severe	None
CsB	Colton ls	A	Excessively	Very Deep	Low	Very High or High/Very High	High	Moderate	Very Limited	Moderate	None
HoB, HoC, HoD	Howland sil	C/D	Mod. Well	Very Deep	Moderate	Mod. High/Mod. Low	High	High	Very Limited	Severe	None
HtM	Human Trans	Not Rated	Not Rated	Not Rated	Not Rated	Not Rated	Not Rated	Not Rated	Not Rated	Not Rated	Not Rated
LaA, LaB	Lamoine sil	D	Somewhat Poorly	Very Deep	High	Mod. High/Mod. Low to Mod. High	Moderate	High	Very Limited	Severe	None
LbB	Lamoine/Buxton Complex	C/D	Somewhat Poorly & Mod. Well	Very Deep	Moderate & High	Mod. High/Low to Mod. High	Moderate	High	Very Limited	Severe	None
LrA, LrB	Lyme sl, shallow to mod. Deep	D	Poorly	Shallow to Mod. Deep	High	Mod. High or High/Mod. High or Very High	High	High	Very Limited	Severe	None
LtB, LtC	Lyman/Tunbridge Complex	C/D	Somewhat Excessively & Well	Shallow to Mod. Deep	Moderate	Mod. High or High	High	High	Very Limited	Moderate	None
LyC, LyD	Lyman fsl	D	Somewhat Excessively	Shallow	Moderate	Mod. High or High	High	High	Very Limited	Moderate	None
MoA, MoC	Monarda sil	D	Poorly	Very Deep	High	Mod. High or High/Low or Mod. High	High	High	Very Limited	Severe	None
MpA, MpB	Marlow/Peru Complex	C/D	Well & Mod. Well	Very Deep	Moderate	Mod. High or High/Mod. High or Low	High	High	Very Limited	Moderate	None
PbA, PbC	Peacham/Brayton Complex	D	Very Poorly & Poorly	Very Deep	High	Mod. High or High/Mod. Low or Low	High	High	Very Limited	Severe	None
PcA, PcB, PcC, PcD	Peru/Colonel Complex	C/D	Mod. Well & Somewhat Poorly	Very Deep	Moderate	Mod. High or High/Mod. Low or High	High	High	Very Limited	Moderate to Severe	None



SOIL SURVEY REPORT

December 23, 2021

PeA	Peacham fsl	D	Very Poorly	Very Deep	High	Mod. High or High/Mod. Low or Low	Moderate	High	Very Limited	Severe	None
PmB, PmC, PmD	Peru/Marlow Complex	C/D	Mod. Well & Well	Very Deep	Moderate	Mod. High or High/Mod. High or Mod. Low	High	High	Very Limited	Moderate	None
ScA, ScB	Scantic sil	D	Poorly	Very Deep	High	Mod. High or High/Mod. Low or Mod. Low	Moderate	High	Very Limited	Severe	None
SrA, SrD	Scantic sil, mod. Deep	D	Poorly	Shallow	High	Mod. Hi	Moderate	High	Very Limited	Severe	None
TcB, TcC, TcD	Telos/Chesuncook Complex	C/D	Somewhat Poorly & Mod. Well	Very Deep	Moderate	Mod. High or High/Low to Mod. High	High	High	Very Limited	Severe	None
TIB, TIC, TID	Tunbridge/Lyman Complex	C/D	Well & Somewhat Excessively	Mod. Deep	Moderate	Mod. High or High	High	High	Very Limited	Moderate	None



SOIL SURVEY REPORT

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Map Unit: **Biddeford/Scantic Complex**
Classification: **Biddeford:** Fine, illitic, nonacid, frigid Histic Humaquepts
Scantic: Fine, illitic, nonacid, frigid Typic Epiaquepts
Map Unit Symbol: BsA

SETTING

Parent Material: **Biddeford:** Muck over glaciolacustrine or glaciomarine deposits
Scantic: Glaciolacustrine or glaciomarine deposits
Landform: Nearly level and depressions on glaciated uplands
Position in Landscape: Coastal lowlands and river valleys
Slope Gradient Range: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Biddeford:

0 – 14" Black, muck, very stony
14 – 20" Grayish olive, silty clay loam, m, FI

Scantic:

Surface Layers:

0 – 3" Black, mucky peat
3 – 10" Grayish olive, silty clay loam, m, FI

Subsurface Layers:

10 – 15" Grayish olive, silty clay loam, m, VFI
Redox Con. dark yellowish brown 10%

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Swanville
Dissimilar: Peru/Marlow Complex

USE AND MANAGEMENT

This map unit is mapped in wetland areas adjacent to Fifteenmile Stream and other streams in the transmission line. Major use and management concerns are that Biddeford and Scantic soils are hydric, so areas mapped as Biddeford/Scantic Complex are wetlands, and as such, impacts to these areas could require regulatory oversight. Biddeford and Scantic soils are both very deep to bedrock yet shallow to dense substratum which typically creates a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads could require additional engineering. They may also incur ponding due to their landscape location. The NRCS data lists the flooding potential as none, however, since they are mapped along streams they may flood at times of high water. These soils can be compacted if exposed to heavy equipment when wet and are



SOIL SURVEY REPORT

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easily ruttable so equipment limitations may be severe. Thick organic surface layers can lead to instability. Avoidance of these areas is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Brayton very stony sandy loam**
Classification: Loamy, mixed, active, nonacid, frigid, shallow Aeric Endoaquepts
Map Unit Symbol: BrA, BrB, BrC

SETTING

Parent Material: Lodgement till
Landform: Ground moraines
Position in Landscape: Depressions and on toeslopes
Slope Gradient Range: (A) 0-3%, (B) 3-8%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Surface Layers:

- 0 – 5" Black, muck; very stony
- 5 – 9" Gray, very stony sandy loam, sbk, FR
Redox Con. dark yellowish brown 5%
- 9 – 14" Olive gray, very stony sandy loam, sbk, FR
Redox Con. dark yellowish brown 5%

Subsurface Layers:

- 14 – 24" Light olive brown, very stony sandy loam, pl, FI
Redox Con. dark yellowish brown 5%
- 24 – 26" Light olive brown, stony sandy loam, m, FI
Redox Con. strong brown 30%

Substratum:

- 26" Lodgment till, m, VFI

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Colonel
Dissimilar: Peru

USE AND MANAGEMENT

This map unit is mapped in wetland areas across the site. Major use and management concerns are that Brayton soils are hydric, so most areas mapped as Brayton are wetlands, and as such, impacts to these areas could require regulatory oversight. Brayton soils are very deep to bedrock yet shallow to dense till which typically creates a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

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Map Unit: **Burnham/Monarda Complex**
Classification: **Burnham:** Histic Humaquepts
Monarda: Loamy, mixed, active, acid, frigid, shallow Aeric Endoaquepts
Map Unit Symbol: BmA

SETTING

Parent Material: **Burnham:** Muck over lodgement till
Monarda: Lodgement till
Landform: Nearly level and depressions in glaciated landscape
Position in Landscape: Lower positions in landscape, bases of long slopes, swales and depressions
Slope Gradient Range: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Burnham:

- 0 – 18" Black, muck, very stony
- 18 – 22" Greenish gray, very stony silt loam, m, FI
- 22" Lodgement till, m VFI

Monarda:

Surface Layers:

- 0 – 4" Black, mucky peat
- 4 – 11" Dark grayish brown, silt loam, sbk, FR
Redox Con. dark yellowish brown 2%

Subsurface Layers:

- 11 – 21" Dark grayish brown, silt loam, pl, FI
Redox Con. dark yellowish brown 20%
- 21 – 31" Dark yellowish brown, gravelly sandy loam, m, FI

Substratum:

- 31 – 34" Lodgement till, m VFI

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Biddeford/Scantic Complex
Dissimilar: Telos/Chesuncook Complex

USE AND MANAGEMENT

This map unit is mapped in wetland areas adjacent to Fifteenmile Stream and a pond in the panel array. Major use and management concerns are that Burnham and Monarda soils are hydric, so most areas mapped as Burnham/Monarda Complex are wetlands, and as such, impacts to these areas could require regulatory oversight. Burnham and Monarda soils are both very deep to bedrock yet shallow to dense till which typically creates a seasonal



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high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads, could require additional engineering. They may also incur ponding due to their landscape location. The NRCS data lists the flooding potential as none, however, the area mapped along Fifteenmile Stream may flood at times of high water. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Thick organic surface layers can lead to instability. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Colonel/Peru Complex**
Classification: **Colonel:** Loamy, isotic, frigid, shallow Aquic Haplorthods
Peru: Coarse-loamy, isotic, frigid, Aquic Haplorthods
Map Unit Symbol: **CpA, CpB, CpC**

SETTING

Parent Material: Lodgement till
Landform: Ground moraines, hills and mountains
Position in Landscape: Hill summits, sideslope, foot slope, and base slope
Slope Gradient Range: **(A)** 0-3%, **(B)** 3-8%, **(C)** 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: **Colonel:** 8-16"
Peru: 16-40"

Typical Profile Description:

Colonel:

Surface Layers:

0 – 3" Black, muck; stony
3 – 9" Gray, stony sandy loam, sbk, VFR
9 – 14" Olive gray, stony sandy loam, sbk, FR

Subsurface Layers:

14 – 24" Light olive brown, sandy loam, pl, FR
Redox Con. dark yellowish brown 5%
24 – 26" Light olive brown, sandy loam, m, FI
Redox. Con. strong brown 10%

Substratum:

26" Lodgment till, m, VFI

Peru:

Surface Layers:

0 – 2" Black, mucky peat
2 – 4" Pinkish gray, fine sandy loam, sbk, VFR
4 – 6" Reddish brown, fine sandy loam, sbk, VFR

Subsurface Layers:

6 – 14" Brown, fine sandy loam, sbk, FR
14 – 24" Dark yellowish brown, fine sandy loam, sbk, FR

Substratum:

24 – 30" Olive brown, m, VFI
Redox. Con. strong brown 2%
30 – 32" Lodgment till, m, VFI

Hydrologic Soil Group (HSG): **See Table 1**

Drainage Class: **See Table 1**

Depth to Bedrock: **See Table 1**

Potential for Frost Action: **See Table 1**

Saturated Hydraulic Conductivity (Ksat): **See Table 1**

Concrete Corrosion: **See Table 1**

Steel Corrosion: **See Table 1**

Limitation to Fence Posts < 36" Deep: **See Table 1**

Rutting Hazzard: **See Table 1**

Flooding Potential: **See Table 1**

INCLUSIONS (within mapping unit)

Similar: Telos

Dissimilar: Brayton, Tunbridge



SOIL SURVEY REPORT

December 23, 2021

USE AND MANAGEMENT

This map unit is mapped in forested areas, typically adjacent to wetlands and/or in low areas and along toeslopes throughout the site. They are typically in hummocky settings creating a complex of interspersed pits and mounds where there are more pits (somewhat poorly drained) than mounds (moderately well drained). Major use and management concerns are that Colonel and Peru soils are both very deep to bedrock yet shallow to dense till. This can create a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as road construction, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Accepted construction techniques such as matting to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of adjacent resources. Phases of this soil included within the map unit are areas with a very stony surface and very stony subsurface layers.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Colonel stony sandy loam**
Classification: Loamy, isotic, frigid, shallow Aquic Haplorthods
Map Unit Symbol: CoA, CoB

SETTING

Parent Material: Lodgement till
Landform: Ground moraines
Position in Landscape: Foot slope and base slope
Slope Gradient Range: (A) 0-3% (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 7-16"

Typical Profile Description:

Surface Layers:

0 – 3" Black, muck; stony
3 – 9" Gray, stony sandy loam, sbk, VFR
9 – 14" Olive gray, stony sandy loam, sbk, FR

Subsurface Layers:

14 – 24" Light olive brown, sandy loam, pl, FR
Redox Con. dark yellowish brown 5%
24 – 26" Light olive brown, sandy loam, m, FI
Redox. Con. strong brown 10%

Substratum:

26" Lodgment till, m, VFI

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Peru
Dissimilar: Brayton

USE AND MANAGEMENT

This map unit is mapped in forested areas, typically adjacent to wetlands throughout the site. Major use and management concerns are that Colonel soils are very deep to bedrock yet shallow to dense till which typically creates a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as road construction, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Accepted construction techniques such as matting to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of adjacent resources. Phases of this soil included within the map unit are areas with a very stony surface and very stony subsurface layers.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Colton loamy sand**
Classification: Sandy-skeletal, isotic, frigid Typic Haplorthods
Map Unit Symbol: CsB

SETTING

Parent Material: Sandy skeletal glacio-fluvial deposits
Landform: Outwash terraces
Position in Landscape: Summit, backslope, side slope
Slope Gradient Range: (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: > 80"

Typical Profile Description:

Surface Layers:

- 0 – 3" Reddish gray, fine sandy loam, sbk, VFR
- 3 – 4" Reddish gray, fine sandy loam, sbk, VFR
- 4 – 5" Dark reddish brown, very cobbly fine sandy loam, sbk, VFR
- 5 – 10" Strong brown, very cobbly coarse sandy loam, sbk, VFR

Subsurface Layers:

- 10 – 18" Dark yellowish brown, very coarse gravelly loamy coarse sand, gr, L
- 18 – 23" Yellowish brown, cobbly coarse sand, gr, L

Substratum:

- 22 – 48" Light olive brown, very coarse gravelly coarse sand, gr, L

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Adams
Dissimilar: Colonel

USE AND MANAGEMENT

These soils are on a glacial outwash terraces near the west-central portion of the panel array. The soils formed in water-sorted sand, gravel, cobbles, and stones typically derived from granite. Because these soils are excessively drained and are very deep to bedrock and densic contact issues with seasonal water or obstructions to excavation should not be significant. Due to the coarse texture and loose structure they may not maintain excavated walls and be susceptible to caving without support. Revegetation of impacted soil may also be difficult if topsoil is not added.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Howland very stony silt loam**
Classification: Coarse-loamy, isotic, frigid Aquic Haplorthods
Map Unit Symbol: HoB, HoC, HoD

SETTING

Parent Material: Lodgment glacial till
Landform: Drumlins and till ridges
Position in Landscape: Side lobes of rolling hills
Slope Gradient Range: **(B)** 3-8%, **(C)** 8-15%, **(D)** 15-35%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 16-40"

Typical Profile Description:

Surface Layers:

- 0 – 1" Black, peat
- 1 - 5" Brown, very stony silt loam, sbk VFR
- 5 – 14" Dark reddish brown, very stony silt loam, sbk, FR

Subsurface Layers:

- 14 – 18" Brown, very stony silt loam, sbk, FR
- 18 – 23" Light olive brown, stony silt loam, sbk, FR
Redox Con. dark yellowish brown 5%

Substratum:

- 23 – 28" Light olive brown, stony silt loam, m, Fl
Redox Con. dark yellowish brown 5%
Redox Dep. olive gray 5%

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Chesuncook, Telos
Dissimilar: Monarda, Brayton

USE AND MANAGEMENT

This map unit is mapped in forested areas, typically along sideslopes within the transmission line. They may have hummocky topography. Major use and management concerns are that Howland soils are very deep to bedrock yet moderately deep to dense till. This can create a seasonal high-water table close to the mineral soil surface, so activities impacted by a high-water table, such as road construction, could require additional engineering if conducted during spring and fall. Some phases of this soil contain grade over 20% so access and erosion controls should be planned prior to working in these areas.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Lamoine/Buxton Complex**
Classification: **Lamoine:** Fine, illitic, nonacid, frigid Aeric Epiaquepts
Buxton: Fine, illitic, frigid Aquic Dystric Eutrudepts
Map Unit Symbol: LbB

SETTING

Parent Material: Glaciolacustrine or glaciomarine deposits
Landform: Nearly level and gently sloping areas
Position in Landscape: Coastal lowlands and river valleys
Slope Gradient Range: (B) 3-5%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: **Lamoine:** 8-16"
Buxton: 16-40"

Typical Profile Description:

Lamoine:

Surface Layers:

0 – 1" Black, peat
1 – 9" Light olive brown, silt loam, m, FR

Subsurface Layers:

9 – 12" Light olive gray, silt loam, m, FI
Redox Con. dark yellowish brown 5%

Buxton:

Surface Layers:

0 – 1" Black, peat
1 – 9" Light olive brown, silt loam, sbk, FR

Subsurface Layers:

9 – 17" Light olive gray, silt loam, sbk, FR
17 – 24" Light olive gray, silt loam, m, FI
Redox Con. dark yellowish brown 5%

Hydrologic Soil Group (HSG): See Table 1

Drainage Class: See Table 1

Depth to Bedrock: See Table 1

Potential for Frost Action: See Table 1

Saturated Hydraulic Conductivity (Ksat): See Table 1

Concrete Corrosion: See Table 1

Steel Corrosion: See Table 1

Limitation to Fence Posts < 36" Deep: See Table 1

Rutting Hazard: See Table 1

Flooding Potential: See Table 1

INCLUSIONS (within mapping unit)

Similar: Colonel

Dissimilar: Peru, Scantic

USE AND MANAGEMENT

This map unit is mapped adjacent to wetlands within the transmission line. Major use and management concerns are that Lamoine and Buxton soils are shallow and moderately deep to dense substratum which typically creates a seasonal high water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet and are easily rutable so equipment limitations may be severe. Accepted construction



SOIL SURVEY REPORT

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techniques such as matting to minimize soil disturbance and compaction are recommended in these areas. Due to the fine textured silty texture the soil particles can be easily transported by water and wind. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: Lamoine silt loam
Classification: Fine, illitic, nonacid, frigid Aeric Epiaquepts
Map Unit Symbol: LaA, LaB

SETTING

Parent Material: Glaciolacustrine or glaciomarine deposits
Landform: Nearly level and gently sloping areas
Position in Landscape: Coastal lowlands and river valleys
Slope Gradient Range: (A) 0-3%, (B) 3-5%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 8-16"

Typical Profile Description:

Surface Layers:

0 – 1" Black, peat
1 – 9" Light olive brown, silt loam, m, FR

Subsurface Layers:

9 – 12" Light olive gray, silt loam, m, FI
Redox Con. dark yellowish brown 5%

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Buxton
Dissimilar: Peru

USE AND MANAGEMENT

This map unit is mapped adjacent to wetlands within the transmission line. Major use and management concerns are that Lamoine soils are shallow to dense substratum which typically creates a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet and are easily ruttable so equipment limitations may be severe. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting to minimize soil disturbance and compaction are recommended in these areas. Due to the fine textured silty texture the soil particles can be easily transported by water and wind. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: Lyman fine sandy loam
Classification: Loamy, isotic, frigid Lithic Haplorthods
Map Unit Symbol: LyC, LyD

SETTING

Parent Material: Loamy supraglacial till
Landform: Glaciated uplands
Position in Landscape: Ridge summits and shoulders
Slope Gradient Range: (C) 8-15%, (D) 15-35%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: < 20" to bedrock with no water table

Typical Profile Description:

0 – 2" Peat
2 – 4" Very dusky red, fine sandy loam, sbk, VFR
4 – 7" Grayish brown, fine sandy loam, sbk, VFR
7 – 13" Dark reddish brown, fine sandy loam, sbk, VFR
13 – 17" Dark brown, fine sandy loam, sbk, VFR
17" Bedrock

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Abram

Dissimilar: Lyme

USE AND MANAGEMENT

This map unit is mapped within the transmission line on small ridge summits and shoulders. The transition from exposed bedrock outcrops to moderately deep soil is rapid and the pattern complex; with the dominant depth to bedrock being shallow. Since these soils are typically shallow so bedrock could be a limiting factor if excavation is planned. If construction is proposed in this area, then blasting will likely be required; however, the blast rock remnants typically create high value road building materials since it is resistant to erosion and impacts from large vehicle traffic. When exposed, these soils are susceptible to erosion so disturbance should be minimized by the use of erosion control devices and sediment controls should be installed prior to work downslope of these areas to avoid sedimentation of wetlands or off-site areas.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Lyman/Tunbridge Complex**
Classification: **Lyman:** Loamy, isotic, frigid Lithic Haplorthods
Tunbridge: Coarse-loamy, isotic, frigid Typic Haplorthods
Map Unit Symbol: LtB, LtC

SETTING

Parent Material: Loamy supraglacial till
Landform: Glaciated uplands
Position in Landscape: Ridge summits and shoulders
Slope Gradient Range: **(B)** 3-8%, **(B)** 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: **Lyman:** < 20" to bedrock with no water table
Tunbridge: 20 to <40" to bedrock with no water table

Typical Profile Description:

Lyman:

0 – 2" Peat
2 – 4" Very dusky red, fine sandy loam, sbk, VFR
4 – 7" Grayish brown, fine sandy loam, sbk, VFR
7 – 13" Dark reddish brown, fine sandy loam, sbk, VFR
13 – 17" Dark brown, fine sandy loam, sbk, VFR
17" Bedrock

Tunbridge:

0 – 3" Peat
3 – 5" Very dusky red, fine sandy loam, sbk, VFR
5 – 7" Grayish brown, fine sandy loam, sbk, VFR
7 – 13" Dark reddish brown, fine sandy loam, sbk, VFR
13 – 23" Dark brown, fine sandy loam, sbk, VFR
23 – 32" Dark yellowish brown, fine sandy loam, sbk, VFR
32" Bedrock

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Abram
Dissimilar: Lyme

USE AND MANAGEMENT

This map unit is mapped within the transmission line on small ridge summits and shoulders. The transition from exposed bedrock outcrops to moderately deep soil is rapid and the pattern complex; with the dominant depth to bedrock being shallow. Since these soils are shallow to moderately deep then depth to bedrock could be a limiting factor if excavation is planned. If construction is proposed in this area, then blasting will likely be required; however, the blast rock remnants typically creates high value road building materials since it is resistant to erosion and impacts from large vehicle traffic. These soils are susceptible to erosion so disturbance should be minimized by the use of erosion control devices and sediment controls should be installed prior to work downslope of these areas to avoid sedimentation of wetlands or off-site areas.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Lyme sandy loam, shallow to moderately deep**
Classification: Coarse-loamy, mixed, active, acid, frigid Aeric Endoaquepts
Map Unit Symbol: LrA, LrB

SETTING

Parent Material: Loamy meltout till
Landform: Glaciated uplands
Position in Landscape: Hills and mountains
Slope Gradient Range: (A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

0 – 2" Muck
2 – 8" Grayish brown, channery sandy loam, sbk, VFR
Redox Con. dark yellowish brown 10%
8 – 14" Olive gray, loamy coarse sand, ma, FR
Redox Con. dark yellowish brown 15%
14" Bedrock

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Brayton, Burnham
Dissimilar: Lyman, Tunbridge

USE AND MANAGEMENT

This map unit is mapped in wetland areas within the transmission line and panel array. Major use and management concerns are that Lyme soils are hydric, so most areas mapped as Lyme are wetlands, and as such, impacts to these areas could require regulatory oversight. If these areas cannot be avoided then activities impacted by a high-water table, such as foundations and roads, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe.

Since these soils are shallow/moderately deep then bedrock could be a limiting factor if excavation is planned. If construction is proposed in this area, then blasting could be required; however, the blast rock remnants typically create high value road building materials since it is resistant to erosion and impacts from large vehicle traffic. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Marlow/Peru Complex**
Classification: **Marlow:** Coarse-loamy, isotic, frigid, Oxyaquic Haplorthods
Peru: Coarse-loamy, isotic, frigid, Aquic Haplorthods
Map Unit Symbol: MpA, MpB

SETTING

Parent Material: Lodgement till
Landform: Ground moraines, hills and mountains
Position in Landscape: Hill summits and sideslope
Slope Gradient Range: **(A)** 0-3%, **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: **Marlow:** >40"
Peru: 16-40"

Typical Profile Description:

Marlow:

Surface Layers:

- 0 – 3" Black, mucky peat
- 3 – 6" Dark reddish gray, very gravelly fine sandy loam, sbk, VFR
- 6 – 8" Pinkish gray, very gravelly fine sandy loam, sbk, VFR
- 8 – 11" Strong brown, very gravelly fine sandy loam, sbk, VFR
- 11 – 20" Strong brown, extremely gravelly fine sandy loam, sbk, VFR

Subsurface Layers:

- 20 – 24" Dark yellowish brown, extremely gravelly fine sandy loam, sbk, FR

Substratum:

- 24 – 39" Dark yellowish brown, extremely gravelly fine sandy loam I, FR
- 39 – 40" Lodgment till, m, FI

Peru:

Surface Layers:

- 0 – 2" Black, mucky peat
- 2 – 4" Pinkish gray, fine sandy loam, sbk, VFR
- 4 – 6" Reddish brown, fine sandy loam, sbk, VFR

Subsurface Layers:

- 6 – 14" Brown, fine sandy loam, sbk, FR
- 14 – 24" Dark yellowish brown, fine sandy loam, sbk, FR

Substratum:

- 24 – 30" Olive brown, m, VFI
Redox. Con. strong brown 2%
- 30 – 32" Lodgment till, m, VFI

Hydrologic Soil Group (HSG): **See Table 1**

Drainage Class: **See Table 1**

Depth to Bedrock: **See Table 1**

Potential for Frost Action: **See Table 1**

Saturated Hydraulic Conductivity (Ksat): **See Table 1**

Concrete Corrosion: **See Table 1**

Steel Corrosion: **See Table 1**

Limitation to Fence Posts < 36" Deep: **See Table 1**

Rutting Hazzard: **See Table 1**

Flooding Potential: **See Table 1**

INCLUSIONS (within mapping unit)

Similar: Chesuncook

Dissimilar: Brayton, Tunbridge



SOIL SURVEY REPORT

December 23, 2021

USE AND MANAGEMENT

This map unit is mapped in forested areas on sideslopes and hill summits throughout the site. Major use and management concerns are that Peru and Marlow soils are both very deep to bedrock yet occur on dense till. This can create a seasonal high-water table at or close to the mineral soil surface, particularly in Peru soils. So, activities impacted by a high-water table, such as road construction, could require additional engineering. These soils can be compacted if exposed to heavy equipment however the potential for rutting is moderate, which is less severe than most other soils mapped within the Project area. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of adjacent and off-site resources. Phases of this soil included within the map unit are areas with a very stony surface and very stony subsurface layers.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Monarda_silt loam**
Classification: Loamy, mixed, active, acid, frigid, shallow Aeric Endoaquepts
Map Unit Symbol: MoA, MoC

SETTING

Parent Material: Monarda: Lodgement till
Landform: Nearly level and depressions in glaciated landscape
Position in Landscape: Lower positions in landscape, bases of long slopes, swales and depressions
Slope Gradient Range: (A) 0-3%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Surface Layers:

0 – 4" Black, mucky peat
4 – 11" Dark grayish brown, silt loam, sbk, FR
Redox Con. dark yellowish brown 2%

Subsurface Layers:

11 – 21" Dark grayish brown, silt loam, pl, FI
Redox Con. dark yellowish brown 20%
21 – 31" Dark yellowish brown, gravelly sandy loam, m, FI

Substratum:

31 – 34" Lodgement till, m VFI

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Biddeford/Scantic Complex
Dissimilar: Telos/Chesuncook Complex

USE AND MANAGEMENT

This map unit is mapped in wetland areas across the site. Major use and management concerns are that Monarda soils are hydric, so most areas mapped as Monarda are wetlands, and as such, impacts to these areas could require regulatory oversight. Monarda soils are very deep to bedrock yet shallow to dense till which typically creates a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads, could require additional engineering. They may also incur ponding due to their landscape location. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Thick organic surface layers can lead to instability. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources. Some areas may have a very stony surface and/or subsurface profiles.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Peacham fine sandy loam**
Classification: Loamy, mixed, superactive, nonacid, frigid, shallow Histic Humaquespts
Map Unit Symbol: PeA

SETTING

Parent Material: Organic material over loamy lodgement till
Landform: Ground moraines
Position in Landscape: Depressions and on toeslopes
Slope Gradient Range: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Surface Layers:

0 – 20" Black, muck

Subsurface Layers:

20 – 24" Gray, fine sandy loam, ma, FI
Redox Con. dark yellowish brown 10%

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Biddeford, Monarda
Dissimilar: Peru, Telos

USE AND MANAGEMENT

This map unit is mapped in wetland areas within the panel array. Major use and management concerns are that Peacham soils are hydric, so most areas mapped as Peacham are wetlands, and as such, impacts to these areas could require regulatory oversight. These soils have a seasonal high-water table at or close to the soil surface, so activities impacted by a high-water table, such as roads, could require additional engineering. Peacham soils have a thick organic horizon. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Thick organic surface layers can lead to instability. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: Peacham/Brayton Complex

Classification: Peacham: Loamy, mixed, superactive, nonacid, frigid, shallow Histic Humaquepts

Brayton: Loamy, mixed, active, nonacid, frigid, shallow Aeric Endoaquepts
PbA, PbC

Map Unit Symbol:

SETTING

Parent Material: Lodgement till and organic material over loamy lodgement till

Landform: Ground moraines

Position in Landscape: Depressions and on toeslopes

Slope Gradient Range: (A) 0-3%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Peacham:

Surface Layers:

0 – 20" Black, muck

Subsurface Layers:

20 – 24" Gray, fine sandy loam, ma, FI
Redox Con. dark yellowish brown 10%

Brayton:

Surface Layers:

0 – 5" Black, muck; very stony
5 – 9" Gray, very stony sandy loam, sbk, FR
Redox Con. dark yellowish brown 5%
9 – 14" Olive gray, very stony sandy loam, sbk, FR
Redox Con. dark yellowish brown 5%

Subsurface Layers:

14 – 24" Light olive brown, very stony sandy loam, pl, FI
Redox Con. dark yellowish brown 5%
24 – 26" Light olive brown, stony sandy loam, m, FI
Redox Con. strong brown 30%

Substratum:

26" Lodgment till, m, VFI

Hydrologic Soil Group (HSG): See Table 1

Drainage Class: See Table 1

Depth to Bedrock: See Table 1

Potential for Frost Action: See Table 1

Saturated Hydraulic Conductivity (Ksat): See Table 1

Concrete Corrosion: See Table 1

Steel Corrosion: See Table 1

Limitation to Fence Posts < 36" Deep: See Table 1

Rutting Hazzard: See Table 1

Flooding Potential: See Table 1

INCLUSIONS (within mapping unit)

Similar: Biddeford, Monarda

Dissimilar: Peru, Telos

USE AND MANAGEMENT

This map unit is mapped in wetland areas across the site. Major use and management concerns are that Peacham and Brayton soils are hydric, so most areas mapped as Peacham/Brayton Complex are wetlands, and as such, impacts to these areas could require regulatory oversight. Brayton soils are very deep to bedrock yet shallow to dense till which typically creates a seasonal high-water table at or close to the mineral soil surface, so activities



SOIL SURVEY REPORT

December 23, 2021

impacted by a high-water table, such as foundations and roads, could require additional engineering. Peacham soils have a thick organic horizon. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Thick organic surface layers can lead to instability. Avoidance of these areas is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Peru/Colonel Complex**
Classification: **Peru:** Coarse-loamy, isotic, frigid, Aquic Haplorthods
Colonel: Loamy, isotic, frigid, shallow Aquic Haplorthods
Map Unit Symbol: PcA, PcB, PcC, PcD

SETTING

Parent Material: Lodgement till
Landform: Ground moraines, hills and mountains
Position in Landscape: Hill summits, sideslope, foot slope, and base slope
Slope Gradient Range: (A) 0-3%, (B) 3-8%, (C) 8-15%, (D) 15-35%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: **Peru:** 16-40"
Colonel: 8-16"

Typical Profile Description:

Peru:

Surface Layers:

0 – 2" Black, mucky peat
2 – 4" Pinkish gray, fine sandy loam, sbk, VFR
4 – 6" Reddish brown, fine sandy loam, sbk, VFR

Subsurface Layers:

6 – 14" Brown, fine sandy loam, sbk, FR
14 – 24" Dark yellowish brown, fine sandy loam, sbk, FR

Substratum:

24 – 30" Olive brown, m, VFI
Redox. Con. strong brown 2%
30 – 32" Lodgment till, m, VFI

Colonel:

Surface Layers:

0 – 3" Black, muck; stony
3 – 9" Gray, stony sandy loam, sbk, VFR
9 – 14" Olive gray, stony sandy loam, sbk, FR

Subsurface Layers:

14 – 24" Light olive brown, sandy loam, pl, FR
Redox Con. dark yellowish brown 5%
24 – 26" Light olive brown, sandy loam, m, FI
Redox. Con. strong brown 10%

Substratum:

26" Lodgment till, m, VFI

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Marlow, Chesuncook
Dissimilar: Brayton, Tunbridge



SOIL SURVEY REPORT

December 23, 2021

USE AND MANAGEMENT

This map unit is mapped in forested areas on toeslopes, sideslopes and some low-lying areas throughout the site. They are typically in hummocky settings creating a complex of interspersed pits and mounds where there are more mounds (moderately well drained) than pits (somewhat poorly drained). Major use and management concerns are that Peru and Colonel soils are both very deep to bedrock yet shallow to dense till. This can create a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as road construction, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Avoidance of these area is less of a concern than in the Colonel/Peru Complex. Accepted construction techniques such as matting to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of adjacent and off-site resources. Phases of this soil included within the map unit are areas with a very stony surface and very stony subsurface layers.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: Peru/Marlow Complex
Classification: Peru: Coarse-loamy, isotic, frigid, Aquic Haplorthods
Marlow: Coarse-loamy, isotic, frigid, Oxyaquic Haplorthods
Map Unit Symbol: PmB, PmC, PmD

SETTING

Parent Material: Lodgement till
Landform: Ground moraines, hills and mountains
Position in Landscape: Hill summits, sideslope, foot slope, and base slope
Slope Gradient Range: (B) 3-8%, (C) 8-15%, (D) 15-35%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: Peru: 16-40"
Marlow: >40"

Typical Profile Description:

Peru:

Surface Layers:

- 0 – 2" Black, mucky peat
- 2 – 4" Pinkish gray, fine sandy loam, sbk, VFR
- 4 – 6" Reddish brown, fine sandy loam, sbk, VFR

Subsurface Layers:

- 6 – 14" Brown, fine sandy loam, sbk, FR
- 14 – 24" Dark yellowish brown, fine sandy loam, sbk, FR

Substratum:

- 24 – 30" Olive brown, m, VFI
Redox. Con. strong brown 2%
- 30 – 32" Lodgment till, m, VFI

Marlow:

Surface Layers:

- 0 – 3" Black, mucky peat
- 3 – 6" Dark reddish gray, very gravelly fine sandy loam, sbk, VFR
- 6 – 8" Pinkish gray, very gravelly fine sandy loam, sbk, VFR
- 8 – 11" Strong brown, very gravelly fine sandy loam, sbk, VFR
- 11 – 20" Strong brown, extremely gravelly fine sandy loam, sbk, VFR

Subsurface Layers:

- 20 – 24" Dark yellowish brown, extremely gravelly fine sandy loam, sbk, FR

Substratum:

- 24 – 39" Dark yellowish brown, extremely gravelly fine sandy loam I, FR
- 39 – 40" Lodgment till, m, FI

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Chesuncook, Colonel
Dissimilar: Brayton, Tunbridge



SOIL SURVEY REPORT

December 23, 2021

USE AND MANAGEMENT

This map unit is mapped in forested areas on sideslopes and hill summits throughout the site. Major use and management concerns are that Peru and Marlow soils are both very deep to bedrock yet occur on dense till. This can create a seasonal high-water table at or close to the mineral soil surface, particularly in Peru soils. So, activities impacted by a high-water table, such as road construction, could require additional engineering. These soils can be compacted if exposed to heavy equipment however the potential for rutting is moderate, which is less severe than most other soils mapped within the Project area. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of adjacent and off-site resources. Phases of this soil included within the map unit are areas with a very stony surface and very stony subsurface layers.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: Scantic silt loam
Classification: Fine, illitic, nonacid, frigid Typic Epiaquepts
Map Unit Symbol: ScA, ScB

SETTING

Parent Material: Glaciolacustrine or glaciomarine deposits
Landform: Nearly level and depressional areas
Position in Landscape: Coastal lowlands and river valleys
Slope Gradient Range: (A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Surface Layers:

0 – 3" Black, mucky peat
3 – 10" Grayish olive, silty clay loam, m, Fl

Subsurface Layers:

10 – 15" Grayish olive, silty clay loam, m, VFI
Redox Con. dark yellowish brown 10%

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Biddeford/Scantic Complex
Dissimilar: Peru/Marlow Complex

USE AND MANAGEMENT

This map unit is mapped in wetland areas along the transmission line. Major use and management concerns are that Scantic soils are hydric, so most areas mapped as Scantic silt loam are wetlands, and as such, impacts to these areas could require regulatory oversight. Scantic soils are very deep to bedrock yet shallow to dense substratum which typically creates a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads could require additional engineering. They may also incur ponding due to their landscape location. The NRCS data lists the flooding potential as none, however, since some are mapped along streams they may flood at times of high water. These soils can be compacted if exposed to heavy equipment when wet and are easily rutable so equipment limitations may be severe. Thick organic surface layers can lead to instability. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: Scantic silt loam, moderately deep
Classification: Fine, illitic, nonacid, frigid Typic Epiaquepts
Map Unit Symbol: SrA, SrD

SETTING

Parent Material: Glaciolacustrine or glaciomarine deposits
Landform: Nearly level and depressional areas
Position in Landscape: Coastal lowlands and river valleys
Slope Gradient Range: (A) 0-3%, (D) 15-35%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: 0"

Typical Profile Description:

Surface Layers:

0 – 3" Black, mucky peat
3 – 10" Grayish olive, silty clay loam, m, Fl

Subsurface Layers:

10 – 15" Grayish olive, silty clay loam, m, VFI
Redox Con. dark yellowish brown 10%
15" Bedrock

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Biddeford/Scantic Complex
Dissimilar: Peru/Marlow Complex

USE AND MANAGEMENT

This map unit is mapped along wetlands south of Bog Road in the transmission line. Major use and management concerns are that these Scantic soils are only moderately deep to bedrock and on steep sideslopes. This typically creates a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as foundations and roads could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet and are easily rutable so equipment limitations may be severe. The steep slope can also be concern for access and erodibility if these soils are exposed. Avoidance of these area is the preferred method of planning activities around these soils. Accepted construction techniques such as matting or bridging to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of wetlands and other adjacent resources.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Telos/Chesuncook Complex**
Classification: **Telos:** Loamy, isotic, frigid, shallow Aquic Haplorthods
Chesuncook: Coarse-loamy, isotic, frigid Aquic Haplorthods
Map Unit Symbol: TcB, TcC, TcD

SETTING

Parent Material: Lodgment glacial till
Landform: Upland till plains, hills and ridges
Position in Landscape: Telos: Lower on landscape, toe-slope
Chesuncook: Sideslopes
Slope Gradient Range: (B) 3-8%, (C) 8-15%, (D) 15-35%,

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: **Telos:** 7-16"
Chesuncook: 16-28"

Typical Profile Description:

Telos:

Surface Layers:

0 – 7" Dark brown, silt loam, sbk VFR
7 – 14" Dark olive brown, silt loam, sbk, FR

Subsurface Layers:

14 – 16" Light olive brown, silt loam, sbk, FR
16 – 23" Light olive brown, silt loam, sbk, FR
Redox Con. dark yellowish brown 20%
Redox Dep. olive gray 5%,

Substratum:

23 – 52" Light olive brown, silt loam, m, FI
Redox Con. dark yellowish brown 20%
Redox Dep. olive gray 15%

Chesuncook:

Surface Layers:

0 – 6" Dark brown, loam, sbk VFR
6 – 15" Brown, loam, sbk VFR

Subsurface Layers:

15 – 19" Light olive brown, very gravelly loam, sbk FR
19 – 27" Olive, loam, sbk FR
Redox. Con. dark yellowish brown 10%
27 – 48" Olive brown, silt loam, m, FI
Redox Con. dark yellowish brown 10%
Redox Dep. olive gray 5%

Hydrologic Soil Group (HSG): **See Table 1**

Drainage Class: **See Table 1**

Depth to Bedrock: **See Table 1**

Potential for Frost Action: **See Table 1**

Saturated Hydraulic Conductivity (Ksat): **See Table 1**

Concrete Corrosion: **See Table 1**

Steel Corrosion: **See Table 1**

Limitation to Fence Posts < 36" Deep: **See Table 1**

Rutting Hazzard: **See Table 1**

Flooding Potential: **See Table 1**

INCLUSIONS (within mapping unit)

Similar: Colonel/Peru

Dissimilar: Monarda, Tunbridge



SOIL SURVEY REPORT

December 23, 2021

USE AND MANAGEMENT

This map unit is mapped in forested areas, typically adjacent to wetlands and/or in low areas and along toeslopes throughout the site. They are typically in hummocky settings creating a complex of interspersed pits and mounds where there are more pits (somewhat poorly drained) than mounds (moderately well drained). Major use and management concerns are that Telos and Chesuncook soils are both very deep to bedrock yet shallow to dense till. This can create a seasonal high-water table at or close to the mineral soil surface, so activities impacted by a high-water table, such as road construction, could require additional engineering. These soils can be compacted if exposed to heavy equipment when wet so equipment limitations may be severe. Accepted construction techniques such as matting to minimize soil disturbance and compaction are recommended in these areas. Erosion and sediment controls should be installed prior to commencement of construction activities to avoid erosion and sedimentation of adjacent resources. Phases of this soil included within the map unit are areas with a very stony surface and very stony subsurface layers.



SOIL SURVEY REPORT

December 23, 2021

Map Unit: **Tunbridge/Lyman Complex**
Classification: **Tunbridge:** Coarse-loamy, isotic, frigid Typic Haplorthods
Lyman: Loamy, isotic, frigid Lithic Haplorthods
Map Unit Symbol: TIB, TIC, TID
SETTING
Parent Material: Loamy supraglacial till
Landform: Glaciated uplands
Position in Landscape: Ridge summits and shoulders
Slope Gradient Range: **(B)** 3-8%, **(C)** 8-15%, **(D)** 15-35%

COMPOSITION AND SOIL CHARACTERISTICS

Depth to Water Table: **Tunbridge:** 20 to <40" to bedrock with no water table
Lyman: < 20" to bedrock with no water table

Typical Profile Description:

Tunbridge:

0 – 3" Peat
3 – 5" Very dusky red, fine sandy loam, sbk, VFR
5 – 7" Grayish brown, fine sandy loam, sbk, VFR
7 – 13" Dark reddish brown, fine sandy loam, sbk, VFR
13 – 23" Dark brown, fine sandy loam, sbk, VFR
23 – 32" Dark yellowish brown, fine sandy loam, sbk, VFR
32" Bedrock

Lyman:

0 – 2" Peat
2 – 4" Very dusky red, fine sandy loam, sbk, VFR
4 – 7" Grayish brown, fine sandy loam, sbk, VFR
7 – 13" Dark reddish brown, fine sandy loam, sbk, VFR
13 – 17" Dark brown, fine sandy loam, sbk, VFR
17" Bedrock

Hydrologic Soil Group (HSG):	See Table 1
Drainage Class:	See Table 1
Depth to Bedrock:	See Table 1
Potential for Frost Action:	See Table 1
Saturated Hydraulic Conductivity (Ksat):	See Table 1
Concrete Corrosion:	See Table 1
Steel Corrosion:	See Table 1
Limitation to Fence Posts < 36" Deep:	See Table 1
Rutting Hazzard:	See Table 1
Flooding Potential:	See Table 1

INCLUSIONS (within mapping unit)

Similar: Abram
Dissimilar: Lyme

USE AND MANAGEMENT

This map unit is mapped within the panel array and transmission line on small ridge summits and shoulders. The transition from exposed bedrock outcrops to moderately deep soil is rapid and the pattern complex; with the dominant depth to bedrock being moderately deep. Since these soils are shallow to moderately deep then depth to bedrock could be a limiting factor if excavation is planned. If construction is proposed in this area, then blasting may be required; however, the blast rock remnants typically creates high value road building materials since it is resistant to erosion and impacts from large vehicle traffic. These soils are susceptible to erosion so disturbance should be minimized by the use of erosion control devices and sediment controls should be installed prior to work downslope of these areas to avoid sedimentation of wetlands or off-site areas.



Appendix D MAPSS STANDARDS FOR SOIL SURVEYS



SOIL SURVEY REPORT

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CLASS B (HIGH INTENSITY) SOIL SURVEY

1. Map units will not contain dissimilar limiting individual inclusions larger than one acre. Dissimilar limiting inclusions may total more than one acre per map unit delineation, in the aggregate, if not continuous.
2. Scale of 1-inch equals 200 feet or larger (e.g., 1" = 100').
3. Ground control—test pits for which detailed data is recorded are located by means of compass by chaining, pacing, or taping from known survey points or other methods of equal or greater accuracy.
4. Base map with 5-foot contour lines.

CLASS C (MEDIUM HIGH INTENSITY) SOIL SURVEY

1. Map units will not contain dissimilar limiting individual inclusions larger than five acres. Dissimilar limiting inclusions may total more than five acres per map unit delineation, in the aggregate, if not continuous.
2. Scale of 1-inch equals 500 feet or larger (e.g., 1" = 400').
3. Ground control – as determined by mapper.
4. Base map – as determined by mapper.

CLASS L SOIL SURVEY (FOR LINEAR PROJECTS)

This standard is designed to provide the minimum soil information necessary to allow for the design and construction of long but narrow projects with little or no adjacent development. Class L map units shall be made on the basis of parent material, slope, soil texture, soil depth to dense till or bedrock and soil drainage at the Class A High Intensity map unit size.

1. Map units will not contain dissimilar, limiting, individual inclusions larger than 1/8 acre. Dissimilar, limiting inclusions may total more than 1/8 acre per map unit delineation, in the aggregate, if not contiguous.
2. Scale of 1-inch equals 100 feet or larger (e.g., 1" = 50')
3. Ground control – base line and test pits for which detailed data are recorded are located to sub-meter accuracy under the direction of a qualified professional.
4. Base map – with two-foot contour lines.



Appendix E GLOSSARY



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Glossary

Complex: Two or more dissimilar major components that occur in a regularly repeating pattern or in an unpredictable pattern.

Limiting Dissimilar Soil: Generally, map unit delineations contain soils other than those identified in the map unit name. These minor soil components reduce the purity of the soil map unit. Minor components that most detract from purity because they are the most dissimilar to the mapped name and are the most limiting for use.

Soil Drainage Class:

- **Excessively Drained:** Soil depth is less than 25 cm (10 inches) to bedrock; or has a sandy or sandy-skeletal particle-size class with a loamy cap less than 25 cm (10 inches) thick.
- **Somewhat Excessively Drained:** Soil depth is 25 to 50 cm (10 to 20 inches) to bedrock with a loamy or loamy-skeletal particle-size class; or soil depth is 50 cm (20 inches) or greater to bedrock with a sandy or sandy-skeletal particle-size class with a loamy cap 25 cm (10 inches) thick or greater.
- **Well Drained:** Soil depth is at least 50 cm (20 inches) to bedrock and has a texture of loamy very fine sand or finer and redoximorphic features, if present, are 100 cm (40 inches) or more below the mineral soil surface.
- **Moderately Well Drained:** Has redoximorphic features at a depth of 40 cm (16 inches) to less than 100 cm (40 inches) below the mineral soil surface.
- **Somewhat Poorly Drained:** Is not VERY POORLY or POORLY DRAINED and has redoximorphic features at a depth of less than 40 cm (16 inches) below the mineral soil surface.
- **Poorly Drained:** Has dominant textures in the upper 50 cm (20 inches) (below the A-horizon if present) of loamy fine sand or coarser and has redoximorphic features within 18 cm (7 inches) of the mineral soil surface; or has dominant textures in the upper 50 cm (20 inches) (below the A-horizon if present) of loamy fine sand or coarser and has a Bh- or Bhs-horizon with value/chroma of 3/3 or less that begins within 18 cm (7 inches) of the mineral soil surface and is directly underlain by a horizon that has redoximorphic features; or has an A-horizon that is 18 cm (7 inches) thick or greater with value/chroma of 3/2 or less and a textures in all sub-horizons within 50 cm (20 inches) of the mineral soil surface of loamy fine sand or coarser and has redoximorphic features directly below the A-horizon; or has a depleted or gleyed matrix within 50 cm (20 inches) of the mineral soil surface and redox depletions with value of 4 or more and chroma of 2 or less in ped interiors that are less than 18 cm (7 inches) below the mineral soil surface; or has an A-horizon that is 18 cm (7 inches) thick or greater with value/chroma of 3/2 or less and has a depleted or gleyed matrix within 50 cm (20 inches) of the mineral soils surface and has redox depletions with value of 4 or more and chroma of 2 or less in ped interiors or a depleted or gleyed matrix directly beneath the A-horizon.



SOIL SURVEY REPORT

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Soil Depth:

- Very Shallow: < 10 inches of mineral soil above bedrock
- Shallow: 10 to < 20 inches of mineral soil above bedrock
- Moderately Deep: 20 to <40 inches of mineral soil above bedrock
- Deep: 40 to <60 inches of mineral soil above bedrock
- Very Deep: >60 inches of mineral soil above bedrock

Soil Map Unit: Designed to efficiently deliver soil information to meet user needs for management and land use decisions. They can appear on maps as individual areas (i.e. polygon), points, or lines. They are a collection of areas defined and named the same in terms of their major soil components, miscellaneous areas, or both.

Soil Phase: These terms are added to a map unit component name to convey important information about a map unit and differentiate it from other map units on the map unit legend.

Soil Series: Represents a three-dimensional soil body having a unique combination of properties that distinguish it from neighboring series.

