ConnectGen Chautauqua County LLC
South Ripley Solar Project
Matter No. 21-00750

900-2.21 Exhibit 10

Geology, Seismology, and Soils

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EXHIBIT 10 GEOLOGY, SEISMOLOGY, AND SOILS

(a) Study of the Geology, Seismology, and Soils Impacts

This Exhibit includes a study of the geologic, seismologic, and soil impacts of the Facility. It includes mapped or otherwise identified existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures.

(1) Existing Slopes Map

Slopes within the Facility Site are generally gentle (0-3%) to moderate (3-8% and 8-15%), with some areas of steeper slopes in the northern and eastern portion of the Facility associated with the forested valleys of Twentymile Creek and its tributaries. Siting of Facility components and associated construction will generally avoid steeper slopes, including those greater than 25%. Figure 10-1 delineates existing slopes (0-3%, 3-8%, 8-15%, 15-25%, 25-35%, and greater than 35%) within the area of the Facility Site, as well as the associated drainage areas (Chautauqua-Conneaut watershed [Hydrologic Unit 04120101] and French watershed [Hydrologic Unit 05010004]). This figure was prepared using 1-meter digital elevation model (DEM) data provided by the U.S. Geological Survey (USGS) and the New York State GIS Program Office. The data was processed using ESRI ArcGIS® software.

(2) Proposed Site Plan

Design Drawings including the proposed site plan indicating existing and proposed contours at 2-foot intervals are included in Exhibit 5 of this application at a scale of at least 1":200'.

(3) Excavation Techniques to be Employed

Excavation activities, such as vegetation clearing, grubbing, topsoil stripping and grading, will be primarily associated with the construction of the underground collection lines, access roads, the collection substation, POI switchyard expansion, laydown yards, panel areas, transformer stations, and the battery energy storage system (BESS) area. Excavation will be completed using conventional construction equipment, including but not limited to, bulldozers, track hoes, pan excavators, cable plows, rock saws, rock wheels, and trenchers. Excavation techniques may vary by Facility component as described below.

Although the exposed soil subgrade is anticipated to be relatively stable upon initial exposure, unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. Should unstable subgrade conditions develop, stabilization measures, such as the addition of replacement fill, will be employed. Erosion control and stabilization measures such as armored riprap, haybales, temporary sediment traps/basins and silt fences, may also be utilized where determined necessary. Temporary excavations will be shored, sloped or braced, as required by OSHA regulations, to provide stability and safe working conditions. All excavations will comply with applicable local, state, and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards. Erosion and sedimentation control measures will be installed and maintained in accordance with the Project's SWPPP to ensure drainage conditions during and after construction of the Facility are consistent with pre-construction conditions. An environmental monitor will ensure compliance with all applicable environmental regulations and guidelines, in accordance with 19 NYCRR Section 900-6.4(b).

Site Preparation

Facility construction will be initiated with the preparation of the Facility Site for widespread construction activities. Low growing brush and tree stands will be cleared (and grubbed where appropriate) from the locations of all proposed Facility components, access roads, temporary laydown yards, and electrical collection line routes, except those areas in which underground boring is proposed to avoid environmental sensitivities. Preparation of the Facility Site will also include cut and fill to achieve the final grades suitable for construction activities, equipment siting, and stormwater management. Cut and fill activities will include constructing access roads, flattening high slope areas, and reducing side slopes. The Applicant developed the grading plan using a maximum slope goal of 10% in the array areas and for access roads. This limit was selected to minimize risk associated with construction in high slope areas, and to ensure all construction equipment could traverse the entire site. Based on the preliminary design, approximately 240,490 cubic yards of cut will be required and used as onsite fill to achieve proposed finished grades. The area of earthwork is approximately 550 acres, which is approximately 43% of the Facility Limits of Construction Activity. Excavation techniques for specific Facility equipment/infrastructure are described below.

Temporary Laydown Yards

The Facility will utilize seven laydown yards (which include staging areas and construction parking) comprising approximately 30 acres during Facility construction. As seen in the design drawings included with Exhibit 5, laydown yards have been sited for accessibility to transportation routes, flat and clear surfaces with limited clearing and grading needed, and access to construction areas distributed throughout the Facility Site. Laydown yards will be constructed by first stripping and stockpiling the topsoil and grading and compacting the subsoil. Geotextile fabric and gravel will then be installed to create a level working area. At the end of construction, gravel and geotextile fabric will be removed, topsoil will be returned and regraded to closely replicate pre-construction contours, and the disturbed area will be re-seeded in accordance with the Facility Vegetation Management Plan.

Per Section 900-10.2(e)(4), the Facility Vegetation Management Plan will be submitted under separate cover as a pre-construction compliance filing.

Access Roads

Wherever feasible, access roads have been co-located with existing roads or previously disturbed corridors to minimize impacts to active agricultural areas, cultural resources, forests, and wetlands and streams. Where an existing road is unavailable or unsuitable, new 20-feet wide gravel surfaced access roads will be constructed or existing roads will be expanded and improved. Road construction will involve grubbing of stumps as needed, topsoil stripping, and grading, as necessary. Any grubbed stumps will be removed from the site, chipped, or buried in suitable upland areas within the Facility Site. Stripped topsoil will be temporarily stockpiled (and segregated from subsoil) along the road corridor for re-use. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with gravel or crushed stone. Geotextile fabric or grid may be installed beneath the road surface for additional support, if necessary.

PV Arrays and Fixed Racking

It is not anticipated that excavation will be required for the installation of PV array rack foundation piles. Piles will be driven to a minimum depth between 6.5 and 12 feet, with the final depth to be determined during the detailed design. In locations with shallow bedrock or refusal, pile locations will be pre-drilled, and the foundation piles will be grouted in place. Driven piles will also be utilized for the support of the inverter skids. Other equipment (MV transformers) foundations within the PV array are anticipated to be shallow mat-slab construction with an anticipated embedment depth of between 12 inches and 18 inches supported by free-draining granular fill or stone. A more detailed description of the support pile installation process is provided below in Section (b)(2).

Underground Electrical Collection Lines

The primary excavations required for the underground electrical collection lines include, but are not limited to, cable trenching and cable plowing. These direct burial methods utilize common industry equipment (e.g., trenchers, rock saws, cable plows, etc.) to open and prepare trenches for the installation of the underground electrical and communication lines. Generally, open trenches will be prepared up to 54-inches deep, for a single circuit. Most corridors within the Facility Site will require the installation of a single circuit, some corridors will contain multiple circuits, two to four, with in the same right of way corridor. Of the approximately 22 miles of underground collection right-of-way, approximately 2 miles contain two circuits, 0.8 miles contain three circuits, and 0.9 miles contain four circuits. These multiple circuit corridors may change during final design. Underground cables would be installed to a minimum depth of 48 inches in active agriculture lands, and 42 inches elsewhere. Where these minimum depths cannot be achieved due to shallow bedrock (e.g., less than 54 inches deep), the minimum depth to bedrock or the minimum permissible by code will be used, whichever is greater.[1] Cables may be installed via direct burial or conduit, and topsoil and subsoil will be segregated and stockpiled adjacent to the trench excavations for use in site restoration.

As underground collection line trenches can provide a conduit for groundwater flow, trenches will be backfilled with materials of similar permeability characteristics of the surrounding native soil. If higher permeability fill is used in trenches, consideration will be given to installing seepage collars and/or check dams to reduce the likelihood of migration of water through the trenches and maintain the flow of water to pre-construction conditions in accordance with the SWPPP and industry best practices.

At limited locations where the underground electrical collection lines cross streams, wetlands, pipelines, or public roadways, trenchless technologies (e.g., Horizontal Directional Drilling (HDD), jack-and-bore, etc.) may be used in order to comply with regulatory and or owner requirements (see Exhibit 5). Preliminarily there may be as many as 53 locations where trenchless conduit installation may be required. These crossings vary in length from approximately 80 to 200 feet to cross a public roadway, to over 900 feet to cross large, forested wetland complexes. Of the 53 preliminary crossings, 13 are proposed for crossing public roads, 31 are proposed for crossing wetlands or streams, and 9 are proposed for crossing existing oil and gas facilities. These locations may vary according to a final detailed system design.

Trenchless crossings use boring/drilling equipment set up on either side of the crossing, outside of sensitive or restricted areas such that no surface disturbance is required between the bore pits, and all existing vegetation and facilities within these areas (including mature trees) can remain in place. Trenchless conduit installation methods may impact the site due to a potential surface release of lubricant drilling mud, or an "inadvertent return." Such inadvertent returns are rare, and the drilling contractor will develop an Inadvertent Return Plan that will be submitted as a pre-construction compliance filing pursuant to Section 900-10.2(f)(5) of the 94-c regulations and implemented during construction. This plan will include a description of inadvertent return mitigation and response measures. Preliminary drawings showing typical trenchless separation and depth requirements are provided in Appendices 5-B and 5-C. For more information on proposed avoidance and mitigation of stream and wetland impacts, please refer to Exhibits 13 and 14.

[1] During the final design of the Facility, the Applicant may propose a reduced collection line burial depth, where collection lines are sited within the security fence of the Facility. If a reduced burial depth is proposed, the Applicant will update applicable supporting drawings and plans (e.g., typical details in the design drawings, the Decommissioning Plan, etc.) as needed, to support this design change.

Overhead Electrical Collection Lines

It is not anticipated that the construction of overhead collection lines will require significant grading or topsoil excavation. Overhead right-of-way will vary in range from 75 feet to 150 feet in width depending on local landowner or environmental constraints. The Project will perform vegetation clearing within the right-of-way but will limit grubbing and permanent soil disturbance to areas required for access and the siting of collection line pole footings. Given that overhead lines are proposed in environmentally sensitive areas across the Facility Site which are not suitable for trenched or trenchless installed underground lines, grubbing will be minimized to the maximum extent possible, and timber matting will be utilized to limit soil disturbance in wetland areas. Collection line poles will be directly embedded in pre-drilled foundations and backfilled with crushed aggregate or concrete. Pre-drilling is typically excavated using a drill augur to a depth of at least 6 ft. Final pole foundation details, including foundation depth and backfill material, will be finalized during final detail design. Collection line turning or corner structures may additionally include support guy wires, typically secured via helical screw anchors wherever soil conditions allow. Helical screw anchors do not require soil excavation and will only create limited soil disturbance at the point of placement associated with construction. If soil conditions do not allow the use of helical screw anchors (i.e. existing geotechnical conditions case refusal) and the anchors are not located within a designated wetland area, plate anchors with concrete backfill may be utilized. For areas with solid soil conditions or homogenous rock, rock anchors can be utilized in place of helical screw anchors or plate anchors.

Substation and Battery Energy Storage System

Construction of built facilities, such as the collection substation and BESS, will begin with stripping the topsoil and temporarily stockpiling for later use during landscaping (as appropriate), grading, and preparation of laydown areas for construction equipment, materials, and parking. Concrete foundations for major equipment and structural supports will be placed, followed by the installation of various conduits, cable trenches, and grounding grid conductors. The area will then undergo aggregate surfacing.

(4) Suitability for Construction

On behalf of the Applicant, Mott MacDonald (Mott) conducted a preliminary geotechnical investigation to obtain and review geotechnical data, identify geotechnical issues, and provide preliminary geotechnical recommendations for the proposed structures within the Facility Site. The results of the investigation are summarized in Mott's Geotechnical Investigation Report (see Appendix 10-A). As part of this evaluation, Mott:

- Investigated subsurface soil and bedrock conditions through sampling and limited geotechnical laboratory testing at 50 boring sites (B-01 to B-047 and B-SS-01 to B-SS-03), three rock coring exploration sites (B-

01, B-05, and B-17), and 21 electrical resistivity test sites (ERT-SS-1 and ERT-01 to ERT-20) that were representative of mapped soil and bedrock formations within the Facility Site.

- Collected and reviewed publicly available data regarding surface and subsurface soil, bedrock, and groundwater conditions.
- Analyzed the available data to determine the suitability of the site for construction.
- Developed a Geotechnical Investigation Report that includes discussions of:
  - Facility Area[2] Geology
  - Soil and Subsurface Soil
  - Bedrock Conditions
  - Groundwater conditions
  - Seismic Site Classification
  - Laboratory Testing
  - Chemical and Engineering Properties
  - Design and Construction Considerations and Recommendations

Based on Mott's findings, the Facility Area is generally suitable for the proposed development. According to the Geotechnical Investigation Report, soils encountered on site were found to be clays and silts in stiff to hard or dense conditions and are of average compressive strength. The subgrade conditions appear to be suitable for support of the proposed foundations based on an evaluation of bearing capacity and differential settlement. Bedrock was encountered in a limited number of borings, mostly in the northwest corner of the Facility Site, at depths as shallow as nine feet during the investigation. At these borings, the underlying bedrock material was determined to be weathered, indicating that installation of pile foundations may require pre-drilling through bedrock in some areas. See Table 10-1 for information regarding depth of bedrock. The Geotechnical Investigation Report recommends that a detailed investigation of pile load testing should be conducted prior to construction to confirm the strength and brittleness of the underlying bedrock and the drivability of proposed steel post foundations.

According to the Geotechnical Investigation Report, the native fine-grained soils found on site may be difficult to handle, place, and compact without proper moisture conditioning and protection. Native soils may be re-used across the Facility Site for fill in landscaped areas but will not be used under or above foundations or load-bearing structures. Imported structural fill will be placed in areas beneath foundations, access roads, and load-bearing structures. General backfill material, comprised of imported granular material with less than 15 percent fine grains,

[2] For the purposes of this Exhibit, results of the Preliminary Geotechnical Investigation are documented within the broader Facility Area, which is defined in the South Ripley Solar Preliminary Scoping Statement as "the land area being considered to potentially host the South Ripley Solar Project". The Facility Site is a smaller area comprised of portions of parcels within the Facility Area that have been sited to host Facility components.

may be used at all other fill locations throughout the Facility Site. Based on the type of soils (e.g., fine grained silts and clays), the degree of frost susceptibility is very high, with an estimated maximum frost penetration of approximately 48 inches, indicating a potential risk of frost heave if shallow foundations are built in the frost zone. In order to mitigate the high frost risk, foundations will be constructed below the depth of frost penetration in accordance with the 2020 Building Code of New York State.

The Geotechnical Investigation Report also found that onsite soils have low swell/expandable potential. However, moisture-sensitive soils are present near the ground surface within the Facility Area. Mitigation measures that may be implemented to properly prepare and protect subgrade surfaces and compacted fills containing moisture-sensitive soils include erosion and sediment controls in accordance with the SWPPP and subgrade surface slopes to facilitate proper drainage. See Section (b)(1) below, for a more comprehensive list of mitigation measures for moisture-sensitive soils. Chemical tests for soluble chlorides and soluble sulfates and pH tests indicated the onsite soils have low risk of soil corrosion to the proposed foundation elements, including steel and concrete, thus no mitigation for corrosive soils is anticipated (Appendix 10-A).

Subsurface hydrologic conditions indicate that dewatering may be required in some areas, as groundwater (indicated from soil moisture content) was encountered as shallow as three feet below grade during the preliminary geotechnical investigation. This shallow groundwater may be indicative of a perched layer and not representative of the regional groundwater table. Please see Figure 10-1 for groundwater depths observed during geotechnical investigations throughout the Facility Site.

Table 10-1. Summary of Geotechnical Study Bedrock Depths

Bore Number	Depth of Bore (ft)	Depth of Bedrock Encountered (ft)
B-01	15.5	10.5
B-02	8.5	8.5
B-03	10	10
B-04	20	Not Encountered
B-05	19	14
B-06	19.1	Not Encountered
B-07	20	Not Encountered
B-08	20	Not Encountered
B-09	20	Not Encountered
B-10	20	Not Encountered
B-11	20	Not Encountered
B-12	20	Not Encountered
B-13	15	15
B-14	20	Not Encountered
B-15	20	Not Encountered

Bore Number	Depth of Bore (ft)	Depth of Bedrock Encountered (ft)
B-16	20	Not Encountered
B-17	18.5	13.5
B-18	20	Not Encountered
B-19	20	Not Encountered
B-20	20	Not Encountered
B-21	20	Not Encountered
B-22	20	Not Encountered
B-23	20	Not Encountered
B-24	18.9	Not Encountered
B-25	20	Not Encountered
B-26	19.4	Not Encountered
B-27	18.9	Not Encountered
B-28	20	Not Encountered
B-29	18.5	Not Encountered
B-30	18.6	Not Encountered
B-31	20	Not Encountered
B-32	20	Not Encountered
B-33	20	Not Encountered
B-34	18.4	Not Encountered
B-35	20	Not Encountered
B-36	20	Not Encountered
B-37	20	Not Encountered
B-38	20	Not Encountered
B-39	20	Not Encountered
B-40	20	Not Encountered
B-41	19.4	Not Encountered
B-42	20	Not Encountered
B-43	20	Not Encountered
B-44	18.9	Not Encountered
B-45	18.7	Not Encountered
B-46	20	Not Encountered
B-47	19.3	Not Encountered
B-SS-01	20	Not Encountered
B-SS-02	20	Not Encountered
B-SS-03	18.4	Not Encountered

Notes: Borings terminated at depths less than 20 feet and have bedrock as “Not Encountered” are due to split spoon refusal but no mention of auger refusal was noted on boring logs. Please see Appendix 10-A for boring logs with complete boring details.

Additional detailed investigations will be conducted by the contractor prior to construction to confirm the preliminary findings. Exhibit 13 provides a detailed discussion of anticipated dewatering activities.

Trenchless construction locations are distributed throughout the Facility Site. Preliminary locations for use of trenchless technologies are depicted as “Boring Pits” in Appendix 5-A and as “Boring Areas” in Figure 10-2. The subsurface conditions at current trenchless boring locations are outlined in the below table.

Table 10-2. Subsurface Conditions at Bore Locations

Bore #	# of circuits	Length (ft)	Crossing	Nearest Geotechnical Bore	Nearest Geotechnical Condition
1	1	100	public road	B-SS-3	stiff clay to 10ft, refusal at 10ft, no groundwater encountered
2	1	197.7	wetland	B-04	stiff clay to 20ft, no groundwater encountered
3	1	185.9	wetland	B-06	stiff clay to 11.5ft, wet sand 11.5ft-16.5ft, wet clay 16.5ft-19.1ft, groundwater at 7ft
4	1	113.7	public road		
5	1	87.2	gas pipeline		
6	1	114.3	public road	B-05	stiff clay to 14 ft, refusal at 14ft, weak shale from 14ft -19ft, no groundwater encountered
7	1	93.8	public road	B-09	stiff clay to 20ft, no groundwater encountered
8	1	171.9	wetland		
9	1	126.5	wetland	B-07	stiff clay to 20ft, wet at 13ft, groundwater at 16ft
10	1	100	public road	B-08	stiff clay to 16.5ft, stiff silt 16.5ft to 20ft
11	1	233.5	wetland & stream	B-11	stiff clay to 8ft, stiff silt 8ft-16.5ft, stiff clay 16.5ft-20ft, no groundwater encountered
12	1	110.9	public road	B-12	stiff silt to 8ft, stiff clay 8ft-11.5ft, loose sand 11.5ft to 16.5ft, stiff clay 16.5ft to 20ft, groundwater at 15ft
13	1	192	wetland		
14	1	100	public road	B-14	stiff clay to 6ft, stiff silt 6ft to 11.5ft, medium dense sand 11.5ft-20ft, groundwater at 3ft
15	1	138.4	gas pipeline		
16	1	516.2	wetland		
17	1	938.4	wetland	B-15	stiff silt to 11.5ft, stiff clay 11.5ft-20ft, no groundwater encountered
18	1	419.5	wetland		
19	1	207.1	wetland	B-18	stiff silt to 4ft, stiff clay 4ft-11.5ft, hard silt 11.5ft-16.5ft, dense gravel 16.5ft-20ft, groundwater at 17ft
20	1	311.5	wetland		
21	1	91	stream		
22	1	138	stream		
23	1	115.6	stream	B-19	stiff clay to 11.5ft, stiff silt 11.5ft-20ft, no groundwater encountered
24	1	167.9	wetland	B-20	stiff clay to 6ft, hard silt 6ft-8ft, stiff clay 8ft-20ft, no groundwater encountered
25	1	147.6	stream		
26	1	216.4	wetland		
27	2	100	public road	B-22	stiff silt to 4ft, stiff clay 4ft-8ft, stiff/hard silt 8ft-20ft, groundwater at 6 ft
28	2	85	stream	B-25	stiff clay to 8ft, dense gravel 8ft-11.5ft, stiff silt 11.5ft-16.5ft, stiff clay 16.5-20ft, no groundwater encountered
29	1	163.9	gas pipeline	B-24	

Bore #	# of circuits	Length (ft)	Crossing	Nearest Geotechnical Bore	Nearest Geotechnical Condition
30	1	106.6	gas pipeline		stiff clay to 2ft, stiff silt 2ft-16.5ft, hard gravel 16.5ft-18.9ft, no groundwater encountered
31	2	430.6	wetland	B-26	stiff silt to 6ft, medium dense sand 6ft-8ft, stiff silt 8ft-11.5ft, hard clay 11.5ft-16.5ft, hard silt 16.5ft-19.4ft, no groundwater encountered
32	2	413	wetland	B-26	stiff silt to 6ft, medium dense sand 6ft-8ft, stiff silt 8ft-11.5ft, hard clay 11.5ft-16.5ft, hard silt 16.5ft-19.4ft, no groundwater encountered
33	1	150.2	public road	B-31	stiff clay to 4ft, stiff silt 4ft-11.5ft, dense sand 11.5ft-16.5ft, hard silt 16.5ft-20ft, groundwater at 5ft
34	4	252.2	wetland	B-31	stiff clay to 4ft, stiff silt 4ft-11.5ft, dense sand 11.5ft-16.5ft, hard silt 16.5ft-20ft, groundwater at 5ft
35	1	306.7	wetland	B-33	stiff silt to 6ft, stiff clay 6ft-11.5ft, hard silt 11.5ft-16.5ft, hard clay 16.5ft-20ft, no groundwater encountered
36	4	240	wetland	B-31	stiff clay to 4ft, stiff silt 4ft-11.5ft, dense sand 11.5ft-16.5ft, hard silt 16.5ft-20ft, groundwater at 5ft
37	4	921	wetland	B-35	stiff clay to 4ft, hard silt 4ft-20ft, no groundwater encountered
38	3	151	public road	B-35	stiff clay to 4ft, hard silt 4ft-20ft, no groundwater encountered
39	1	121	public road	B-36	stiff silt to 4ft, stiff clay 4ft-6ft, dense sand 6ft-8ft, hard silt 8ft-20ft, groundwater at 12ft
40	3	100	gas pipeline	B-35	stiff clay to 4ft, hard silt 4ft-20ft, no groundwater encountered
41	1	105	gas pipeline	B-43	stiff silt to 4ft, dense fine sand 4ft-6ft, stiff silt 6ft-20ft, no groundwater encountered
42	2	126.4	gas pipeline	B-43	stiff silt to 4ft, dense fine sand 4ft-6ft, stiff silt 6ft-20ft, no groundwater encountered
43	1	152	wetland	B-43	stiff silt to 4ft, dense fine sand 4ft-6ft, stiff silt 6ft-20ft, no groundwater encountered
44	1	109	stream	B-44	stiff clay to 11.5ft, dense fine sand 11.5ft-18.9ft, no groundwater encountered
45	1	315.7	stream	B-44	stiff clay to 11.5ft, dense fine sand 11.5ft-18.9ft, no groundwater encountered
46	1	412.4	gas pipeline & public road	B-44	stiff clay to 11.5ft, dense fine sand 11.5ft-18.9ft, no groundwater encountered
47	1	80	gas pipeline	B-45	stiff clay to 2ft, stiff silt 2ft-4ft, stiff clay 4ft-11.5ft, hard silt 11.5ft-18.7ft, groundwater at 12ft
48	1	219.2	wetland	B-45	stiff clay to 2ft, stiff silt 2ft-4ft, stiff clay 4ft-11.5ft, hard silt 11.5ft-18.7ft, groundwater at 12ft
49	1	82	gas pipeline	B-45	stiff clay to 2ft, stiff silt 2ft-4ft, stiff clay 4ft-11.5ft, hard silt 11.5ft-18.7ft, groundwater at 12ft
50	1	358.6	wetland	B-46	stiff silt to 2ft, stiff clay 2ft-6ft, hard silt 6ft-8ft, hard clay 8ft-11.5ft, hard silt 11.5ft-20ft, no groundwater encountered
51	1	107	public road	B-39	stiff clay to 4ft, stiff silt 4ft-20ft, no groundwater encountered
52	1	451.3	wetland	B-39	stiff clay to 4ft, stiff silt 4ft-20ft, no groundwater encountered
53	1	155	stream	B-39	stiff clay to 4ft, stiff silt 4ft-20ft, no groundwater encountered

No blasting operations are anticipated to be required for construction of the Facility.

Before construction commences, a site survey will be performed to stake out the exact location of proposed Facility components. Once site surveys are complete, a detailed geotechnical investigation will be performed by the contractor to verify subsurface conditions and facilitate proper development the Facility.

(5) Preliminary Blasting Plan

No blasting is anticipated in the construction of the Facility. As detailed in the Geotechnical Investigation Report, the depth of bedrock and its observed poor rock quality conditions indicate blasting would likely not be necessary. Shallow bedrock at several locations may prevent the installation of driven steel piles or ground screws to a sufficient depth. At these locations, pre-drilling would be performed to set and install pile foundations. Based on the preliminary geotechnical investigation, the Applicant assumes that any bedrock or boulders encountered during construction of associated structures or collection lines will be able to be ripped with an excavator or broken with a pneumatic hammer.

(6) Potential Blasting Impacts

As detailed in Section 5, blasting is not anticipated to be used in the construction of the Facility.

(7) Mitigation Measures for Blasting Impacts

As detailed in Section 5, blasting is not anticipated to be used in the construction of the Facility.

(8) Regional Geology, Tectonic Setting, and Seismology

The Facility Site is located in the northwestern part of Chautauqua County which is situated within the Cattaraugus Hills sub-region of the glaciated Allegheny Plateau physiographic province, an area that is characterized by fairly flat-topped divides separated by broad glacial valleys. The Allegheny Plateau is underlain by a thick sequence of nearly flat lying sedimentary rock. The area has gone through a long period of erosion by both water and ice, resulting in broad uplands separated by deep and steep valleys. Glaciation of the Allegheny Plateau within Western New York occurred during the late Wisconsin Glacial Episode, approximately 50,000 to 15,000 years ago. The presence of terminal moraines remains as evidence of this glaciation. Additionally, sediment deposited from the glacial retreat created rolling hills, deep valleys, and the large area of fertile soil that currently supports agriculture in the area (USGS, 1994; NYSDOT, 2013). Likewise, glacial till is the predominate soil type found within the Facility Area.

The Geologic Map of New York, Niagara Sheet, classifies the underlying bedrock as part of the Ellicott and Dexterville Formations of the Upper Devonian geologic period which is primarily comprised of shales and siltstones

(NYSM/NYSGS, 1970). Based on rock coring explorations during the preliminary geotechnical investigation, shale bedrock was inferred to be the main, underlying formation within the Facility Area and no karst features were identified. Since karst geology is known to form in limestone bedrocks, there are likely no karst formations in the vicinity of the Facility. Furthermore, based on the USGS Karst Map of the Conterminous United States (USGS, 2020), the Facility is not located in karst or potential karst areas.

Chautauqua County is considered to have low tectonic activity and low probability of earthquake occurrence. Areas of New York State with higher probabilities of earthquake occurrences are located in the northern (St. Lawrence River Valley), western (Buffalo-Attica regions), and southern (New York City region) portions of the state.

The New York State Seismic Hazard Map indicates that the Facility is situated in a location with low risk of significant seismic activity (USGS, 2014). The USGS Earthquake Hazards Program does not list any young faults or faults that have had displacement in the Holocene epoch within the vicinity of the Facility Site (USGS, 2018). The closest fault system, the Clarendon-Linden Fault, is located approximately 100 miles east of the Facility (USGS, 2021). There are no topographic linear features identified as brittle structures by the New York State Museum (NYSM) within the Facility Site. The nearest brittle structure is approximately 16 miles to the southeast of the Facility Site (NYSM, 1977). Likewise, according to the Geotechnical Investigation Report, seismicity within the Facility Area is low and liquifiable soils are not present.

(9) Facility Impacts on Regional Geology

The Facility is not anticipated to result in any significant impacts to the regional geology. To the extent practicable, Facility components will be designed, sited, and constructed in a manner that avoids or minimizes temporary and permanent impacts to physiography, geology, and soils. Prior to construction, the Applicant will carry out targeted subsurface investigation activities to inform final design and construction considerations.

Only temporary, minor impacts to geology are expected as a result of construction activities. For example, cut and fill may be required where PV panels, associated structures, laydown yards, and access road sites are not located on completely level terrain, and as noted earlier, blasting is not anticipated for this project. Depth to bedrock is known to be variable within the Facility Site and some PV panel supports are anticipated to require drilling into the bedrock (see Appendix 10-A).

Potential impacts associated with trenchless boring activities, especially within sensitive karst regions, may include increased sediment discharge, the creation of open voids in soils, sedimentation within caves, water quality deterioration, landform destruction, and sinkhole development. Bore depths for trenchless construction will consider site-specific factors such as soil type and bedrock composition to minimize the potential for inadvertent release and karst impact. As noted previously, the assessment of the Facility Site did not identify any karst features, and the closest primary aquifer is approximately 17 miles from the site. In the unlikely event that karst features are identified, bore depths and trenchless construction will be set at the minimum depth necessary to prevent an inadvertent release and impacts to karst areas and groundwater quality. Detailed designs are required to establish such minimum depths. Therefore, it is not anticipated trenchless operations will result in any potential impacts to regional geologic features. Please refer to Exhibit 13 for a more detailed discussion of potential impacts to groundwater.

Overall, Facility components will be designed, sited, and constructed in a manner that avoids and minimizes temporary or permanent impacts to physiography, geology, and soils, to the extent practicable. As previously noted, the Facility is not located within a known or potential karst area. Accordingly, when operational, Facility impacts to regional geology will be negligible.

(10) Impacts of Seismic Activity on Facility Operation

As described in Section (a)(8), given there are no faults or young faults within approximately 100 miles of the Facility, seismic activity-related impacts anticipated within or immediately adjacent to the Facility Site are not anticipated. Similarly, Facility operations are considered at low risk of impacts from seismic activity. However, to further minimize potential impacts from seismic activity, the Facility will be designed to resist the effects of earthquake motions in accordance with Section 1613 of the 2020 Building Code of New York State or ASCE 7. Additionally, Facility components are designed with emergency electrical shut offs in case of emergency, such as a large seismic event. Furthermore, the Applicant has developed a Safety Response Plan (Appendix 6-B) to outline procedures to follow during construction or operation activities in the event of an emergency.

(11) Soil Types Map

Soil types at the Facility Site were mapped using data from the United States Department of Agriculture (USDA) National Resource Conservation Service (NRCS) Web Soil Survey (WSS). See Figure 10-3 for a map delineating soil types within the Facility Site.

(12) Characteristics of Each Soil Type and Suitability for Construction

According to the Soil Survey Geographic (SSURGO) database and NRCS WSS (Soil Survey Staff, NRCS, & USDA, 2020), 25 soil series are documented within the Facility Site. The Erie-Langford and Busti-Chautauqua units, which consist of soils formed in loamy glacial till, comprise approximately 70% of the Facility Site. The general characteristics of the soil series present within the Facility Site are provided in Table 10-1.

It is important to note that the USDA NRCS SSURGO is the most comprehensive set of information published by the National Cooperative Soil Survey but not all areas have been field-verified. Therefore, this Exhibit supplements the federal soils data with site-specific soils information gathered during site investigations conducted by the Applicant. These data have been compiled and summarized in the Geotechnical Investigation Report (Appendix 10-A). These investigations included a site visit to characterize surficial features, an assessment of the general constructability of the soil types found onsite, and a preliminary subsurface investigation.

Table 10-3. Soil Series Identified Within the Facility Site and Their Characteristics

Soil Series	Texture	Percent Slope	Hydrologic Soil Group[3]	Percent Organic Matter	Corrosivity		Acres within Project Area
					Steel	Concrete	
Alden	Mucky to gravelly silt loam texture	0% to 3%	C/D	Unknown	High	Low	75.8
Ashville	Silt-loam to gravelly silt loam texture	0% to 3%	C/D	Unknown	High	Low	205.7
Busti	Silt-loam to gravelly silt loam texture	3% to 15%	C/D	7%	High	Moderate	431.6
Canandaigua	Silt loam texture	0% to 3%	C/D	15%	High	Low	81.2
Chadakoin	Silt-loam to gravelly silt-loam texture	3% to 50%	B	Unknown	Moderate	High	257.5
Chautauqua	Silt loam to gravelly loam texture	8% to 25%	C/D	Unknown	High	Moderate	382.7
Chenango	Gravelly loam, very gravelly fine sandy loam, very gravelly loamy sand texture	3% to 15%	A	1%	Moderate	High	7.2
Dalton	Silt loam to gravelly silt loam texture	0% to 3%	D	Unknown	High	Moderate	12.1
Darien	Silt loam to gravelly silty clay loam	8% to 15%	C/D	15%	High	Low	28.8
Erie	Silt-loam texture	0% to 15%	D	10%	High	Moderate	898.7

Soil Series	Texture	Percent Slope	Hydrologic Soil Group[3]	Percent Organic Matter	Corrosivity		Acres within Project Area
					Steel	Concrete	
Fluvaquents-Udifluvents	Gravelly silt loam texture	0% to 5%	A/D	15%	High	Moderate	46.9
Fremont	Silt loam texture	0% to 8%	D	Unknown	High	Moderate	4.2
Holderton	Silt loam to gravelly loamy coarse sand	0% to 3%	B/D	1%	High	Moderate	0.7
Langford	Silt-loam texture	3% to 15%	D	10%	High	Moderate	679.6
Mardin	Channery silt loam texture	8% to 15%	D	Unknown	High	High	9.0
Schuyler	Silt loam texture	3% to 15%	C/D	Unknown	High	Moderate	11.5
Towerville	Silt loam in texture	35% to 50%	C/D	Unknown	High	Moderate	12.3
Valois	Gravelly silt loam texture	3% to 15%	B	2%	Moderate	High	2.5
Volusia	Channery silt loam texture	0% to 8%	D	5%	High	Moderate	231.2

Source: SSURGO Database and NRCS WSS (Soil Survey Staff, NRCS, & USDA, 2020).

[1]Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission. Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission. Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission. Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high-water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission. Dual Designation. If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Suitability and limitations of existing soils and depth to bedrock with respect to construction of the Facility is addressed in Section (a)(4) of this Exhibit and in the Geotechnical Investigation Report. The generalized stratigraphy of the Facility Area, as determined from field data, from the ground surface down consists predominantly of silty glacial till transitioning to clay and underlain by shale bedrock. These soils are generally suitable for construction with adequate preparation and protection as discussed further in Section (a)(4) below.

Groundwater was observed during the geotechnical field investigation and has been identified as a potential consideration for Facility construction. Depending on foundation elevation and bedrock conditions within excavations, groundwater may or may not need to be considered in the design and construction of foundations. Construction dewatering may be required for surface water control and for excavations that encounter perched groundwater conditions, groundwater, or seepage.

Dewatering methods will involve pumping the water to a predetermined vegetated discharge point, away from wetlands, waterbodies, and other sensitive resources. The use of sumps and pumps is a common and economical method of dewatering and when combined with measures/devices to slow water velocities and trap suspended sediment will be adequate given the conditions within the Facility Site. All dewatering activities will be conducted in accordance with the Facility SWPPP and in accordance with the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities. See Exhibit 13, Section (a)(3) for an additional discussion of groundwater on site and how water will be managed during construction. As detailed in the Geotechnical Investigation Report, final geotechnical investigations will be conducted by the contractor prior to construction to inform whether long-term dewatering will be necessary. It is not anticipated that the Facility will include any components located below grade that will require continuous dewatering.

(13) Bedrock Analyses and Maps

Figure 10-4 of this Application shows depth to bedrock and depth to the high-water table across the Facility Site relative to Facility components based on publicly available data (i.e., USDA NRCS SSURGO). It is important to note that the public data may represent mapped bedrock and high-water table depth different than the site-specific bedrock depth and high-water table depth measured during geotechnical investigations. Please refer to the Geotechnical Investigation Report in Appendix 10-A for the results of on-site borings including vertical soil profiles. Additionally, the Geotechnical Investigation Report contains maps, figures, and a more detailed discussion of subsurface conditions across the Facility Area, including types of underlying bedrock formations.

The typical stratigraphy, as determined from field data, consists of approximately 6 inches of topsoil underlain primarily by glacial till silts and clays which typically transitioned into shale bedrock at depths as low as 9 feet below existing grade. Bedrock was encountered at 18 of the 50 borings with a majority of them hitting refusal at greater than 15 feet below ground surface. Therefore, although bedrock may be encountered at shallow depths under some of the PV panel locations, especially those in the northwest corner of the site (Borings B-01, B-02, B-03, B-05), bedrock is not anticipated be a concern for construction activities within the majority of the Facility Site. The bedrock encountered is anticipated to be structurally suitable for support of foundations for PV panels, support buildings, and access road construction. However, these locations will undergo additional subsurface investigation prior to construction to confirm site conditions. As discussed in Exhibit 10(5) and (6), blasting is not anticipated, and a blasting plan will not be prepared as part of Facility construction. Additionally, in accordance with the 2020 Building Code of New York State, foundation bases will be placed below the frost penetration depth, which is estimated to be at least 48 inches deep across the Facility Site.

(b) Foundation Suitability Evaluation

Foundation construction will be primarily associated with the collection substation, POI switchyard, energy storage building, equipment pads, and PV mounts where necessary. Construction will occur in several stages and typically includes excavation, pouring of concrete mud mat, rebar and bolt cage assembly, outer form setting, casting and finishing of the concrete, removal of the forms, backfilling and compacting, and site restoration. Excavation and foundation construction will be conducted in a manner that will minimize the size and duration of excavated areas required to install foundations. In addition, foundations will be constructed and inspected in accordance with applicable building codes and industry standards, including the 2020 Building Code of New York State and in conformance with all pre-construction site-specific studies.

(1) Preliminary Engineering Assessment

Based on the Geotechnical Investigation Report (Appendix 10-A), several foundation types can be utilized; the exact type will be determined by additional, site-specific subsurface evaluations. Foundations such as sonotubes, spread footings, or similar systems may be used for equipment pads and associated support structures. Panels may be installed with a variety of pile types, including driven posts such as W6x9 H-piles, augered piles (with or without pre-drilling), rock socketed piles, or ground screw piles, however standard driven W6x9 H-piles are anticipated to be the preferred foundation solution for PV racking for the specific geotechnical conditions in the Facility Site and will be used wherever the depth to bedrock allows. These piles are similar to those used for highway signs or guide rails and are significantly smaller when compared to those used in typical pile foundations of bridges or buildings. Installation of these piles may involve drilling where shallow bedrock is encountered but will not involve excavation. Where driven piles encounter refusal above the required embedment depth, oversized holes will be drilled using vibratory extractors, down-the-hole (DTH) hammers, and auger drills, and the support will be installed and backfilled with cement grout. Pile depths typically range from 6.5 to 12 feet below the ground surface. However, the final design length of driven supports is not known at this time and will be primarily dependent on the embedment/lateral capacity required to resist live loading (e.g., the combination of wind and ice loads).

The supports will be structurally designed to resist the compression, uplift, and bending forces anticipated within the Facility Site. Although soils within the Facility Site are likely to have low uplift potential, frozen soils may still exert heaving force on the supports. If the anchorage of the piles and the deadweight of the structures are not enough to resist these forces, they can cause uplift. Driven piles will be designed to be long enough to counteract potential heave forces in the seasonal frost zone. Thawing soils typically have significantly less strength than frozen or fully thawed soils. Strong frost heaving is likely to be associated with expandable soils. The Geotechnical Investigation Report states that onsite soils have low swell/expandable potential. However, moisture-sensitive soils are present near the ground surface within the Facility Area. Technical specifications will be prepared that require material and installation detail submittals, and proof of experience in driven support installation. See the

Geotechnical Investigation Report for a full discussion of pile construction considerations. All techniques will adhere to applicable building codes and standards.

Switchgear, transformers, battery energy storage containers, the O&M building, and other electronic equipment are expected to be supported on shallow mat-slab foundations. Based on the anticipated types of structures and the expected magnitude of loading, some soils within the Facility Site will require surface compaction to improve conditions for shallow foundation matting. As applicable, shallow mat-slab foundations are anticipated to include strip or spread footings underlain by a Non-Frost Susceptible (NFS) material or structural fill placed on either the native material or compacted fill placed for site grading. Alternately, the slab may be designed to allow movement due to frost action." Further, it is anticipated that there will be pole-mounted equipment inside the collection substation, and large diameter drilled shafts for dead-end overhead collection line structures within the POI switchyard.

The following measures will be implemented to properly prepare and protect subgrade surfaces and compacted fills containing moisture-sensitive soils:

- Erosion and sediment control measures will be properly installed and maintained in accordance with the SWPPP to intercept and direct surface water away from subgrade surfaces;
- Subgrade surfaces will be sloped and seal-rolled, as appropriate, to facilitate proper drainage;
- Preparation of the work site in the event of inclement weather will be implemented to avoid moisture collection on subgrade surfaces;
- Areas of exposed subgrade soils will be minimized to the maximum extent practicable;
- Construction traffic will be restricted to properly constructed roads identified for haul routes;
- Disturbed subgrade soils will be removed and replaced with compacted controlled fill material;
- In place moisture contents will be maintained with two percent wet/dry of the optimal moisture content as determined by the Modified Proctor Test (ASTM D1557).

(2) Pile Driving Assessment

As discussed above, pile foundation types anticipated for the Facility are similar to foundations used for highway signs or guide rails and are insignificant compared to those used in typical large-scale applications such as bridge or building pile foundations. Accordingly, any potentially impacts associated with installation are anticipated to be commensurately smaller.

As described in the Geotechnical Investigation Report, steel H-piles may be used where subgrade conditions allow, or via concrete ballast support at grade. In areas of shallow bedrock, pre-drilling may be required prior to installation of H-piles or similar post foundations. Steel piles are recommended to be driven or embedded to a minimum of depth ranging from 6.5 to 12 feet depending on the pile specifications and anticipated Facility component loading. However, prior to construction, a detailed geotechnical investigation and pile load testing will be conducted by the contractor to confirm pile capacity and the drivability of the posts. Additionally, the planned string inverters and other lightly loaded equipment within the collection substation are expected to be supported by driven steel piles.

It is anticipated that approximately 140,000 piles will be driven during the construction of the Facility. These piles are anticipated to be approximately 14-22 feet in length. Assuming an 8-hour workday, driving these piles would take approximately 80 days utilizing 10 pile installation crews.

The pile driving process will be performed under the direction of a Geotechnical Engineer. The load carrying capacity of the piles will vary when installed by different methods (e.g., driving vs pre-drilled, grout filled holes). Production pile testing will be performed on piles installed using each installation method to confirm their capability to carry the foundation loads. Actual pile lengths will be determined by full-scale pile load testing at the time of construction. The Geotechnical Engineer will document the pile installation process, including soil, rock, and groundwater conditions encountered; consistency with expected conditions; and details of the installed pile. The contractor will submit a pile driving plan and a pile hammer-cushion combination to the engineer for evaluation prior to pile installation. Each pile will be observed and checked for buckling, crimping and alignment and penetration resistance, depth of embedment, and general pile driving operations will be recorded by the Geotechnical Engineer.

As previously noted, pile foundations used to support PV panels are light capacity as compared to piles typically used in the construction of bridges and buildings. High-speed impact hammers are the most widely used application for driving light capacity piles. Vibratory driver extractors, DTH hammers, and auger drills (for pre-drilling or installing ground screws) may also be used for this project as supplemental tools to the impact hammer.

Vibrations generated by high-speed hammers are typically low and confined to the immediate work area and should not affect structures on neighboring parcels given property line and residence setbacks. The American Association of State Highway and Transportation Officials (AASHTO) has set maximum recommended vibration limits, set in units of inches per second for peak particle velocity (PPV), for preventing damage to existing structures from construction or maintenance activities. The recommended limits near a residential structure are between 0.2

and 0.5 PPV (inches/second), and 0.1 PPV (inches/second) near historic sites or other critical locations. Table 10-4 below outlines additional standards and reccomendations for vibrational pile driving impact limits in relation to different structure types.

Table 10-4. Peak Particle Velocity Recommendations for Pile Driving

Organization / Researcher	Type of Structure	Limiting PPV (Repeated)
AASHTO (1990)	Historic sites or other critical locations	0.1
	Residential buildings, plastered walls	0.2-0.3
	Residential buildings in good repair with gypsum board walls	0.4-0.5
	Engineered structures, without plaster	1.0-1.5
Chae (1978)	Structures of substantial construction	2
	Relatively new residential structures in sound condition	1
	Relatively old residential structures in poor condition	0.5
Swiss Association of Standardization (1981)	Class I: buildings in steel or reinforced concrete, such as factories, retaining walls, bridges, steel towers, open channels, underground chambers and tunnels with and without concrete alignment	0.5
	Class II: buildings with foundation walls and floors in concrete, walls in concrete or masonry, stone masonry retaining walls, underground chambers and tunnels with masonry alignments, conduits in loose material	0.3
	Class III: buildings as mentioned above but with wooden ceilings and walls in masonry	0.2
	Class IV: construction very sensitive to vibration; objects of historic interest	0.12
Dowding (1996)	Historic and some old buildings	0.5
	Residential structures	0.5

Vibrational impacts due to pile driving during construction of the Facility are expected to be negligible, and not exceed the reccomended limits by following the following setback requirements:

- Residential Structures (max PPV = 0.2): minimum distance from pile drivers of 16 feet
- Historic sites or other critical locations (max PPV = 0.1): minimum distance from pile drivers of 24 feet

Given the nature of the vibrations associated with pile driving, and the temporary and relatively short timeframe for the activity, no impacts due to pile-driving vibrations are anticipated for neighboring properties.

(3) Mitigation Measures for Pile Driving Impacts

As discussed above in Exhibit 10(b)(2), vibrations generated from high-speed impact hammers are relatively low and coupled with the limited timeframe of pile driving activities and implementation of Facility setbacks from neighboring properties, allowing for grater attenuation, there are no anticipated impacts to surrounding properties from vibrations associated with pile driving for the construction of the Facility. Therefore, no mitigation as a result of pile driving vibration impacts is anticipated. Although vibrations from pile driving are anticipated to adhere to standards at neighboring structures, vibrational monitoring will be conducted for all pile driving that occurs within 100 feet of wells and utilities and will continue until monitoring results indicate that peak particle velocity is within acceptable limits. Please see Exhibit 7 for more detail regarding noise and vibration during construction. In addition, the Applicant's Complaint Management Plan, which will be prepared and provided to the public prior to construction in accordance with 19 NYCRR 900-10.2(e)(7), will detail methods to register vibration or noise complaints and the Applicant's commitment to responding to and resolving complaints. While not anticipated, should structural damages occur due to pile driving as a result of the Project, the Applicant will work with the property owner to provide compensation to address the damages.

(4) Vulnerability to Earthquake and Tsunami Events

As previously indicated, the Facility is considered to have minimal vulnerability associated with seismic events based on a review of publicly available data. Based on the 2014 New York State Hazard Map (USGS, 2014), the Facility Site is located in an area of relatively low seismic hazard, with a 2% or less chance that an earthquake exceeding magnitude 2.5 on the Richter scale will occur within a 50-year window. The USGS Earthquake Hazards Program does not list any young faults, or faults that have had displacement in the Holocene epoch within the vicinity of the Facility Site (USGS, 2018).

The components of this Facility will be evaluated, designed, and constructed to resist the effects of earthquake motions in accordance with the American Society of Civil Engineers (ASCE) and section 1613 of the 2020 Building Code of New York State. The Geotechnical Investigation Report indicates that the site class of soils throughout the Facility Area is Site Class D (stiff soil). The soils encountered during the subsurface explorations are not susceptible to liquefaction. The Report lists the applicable parameters for design based on the seismic site classification and in accordance with ASCE 7-10.

The Facility is located approximately 7.5 miles from the nearest large water body (Lake Erie), the lowest point of elevation within the Facility Site (approximately 1,100 ft) is 530 ft above the elevation of Lake Erie at the Ripley beach line (approximately 570 ft), and as mentioned previously the Facility Site is located in an area of relatively low seismic hazard. Therefore, vulnerability associated with tsunami events is not a potential risk for the Facility Site and will not be discussed in this Application.

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