TRELINA SOLAR ENERGY CENTER

Case No. 19-F-0366

1001.11 Exhibit 11

Preliminary Design Drawings

Contents

Appendices

Exhibit 11: Preliminary Design Drawings

This Exhibit will track the requirements of proposed Stipulation 11, dated June 19, 2020, and therefore, the requirements of 16 New York Codes, Rules and Regulations (NYCRR) § 1001.11.

This exhibit contains Preliminary Design Drawings (Civil Construction Plans) and supporting documentation, which were developed under the direction of a licensed Professional Engineer in the State of New York. The plans were prepared using AutoCAD Civil 3D design software and are generally presented at a scale of 1 inch equals 100 feet, with the exception of those intended to provide an overview of the Project Area. The drawings are labeled appropriately as "Preliminary – Not for Construction Purposes."

The Project proposes to install fixed or tracker racking systems. As the technology is rapidly evolving for solar panel technology, and the market conditions at the time that procurement decisions need to be made are unknown at this time, the Trelina Solar Energy Center, LLC (Applicant) is proposing in this Application to evaluate both types of racking systems, with the final decision to be made and detailed in the Compliance Filing. Only selected elements of the Trelina Solar Energy Center (Trelina Solar Energy Center or Project) would change based upon the type of array racking system used, but all changes would be within the Component fence line and to the same land uses shown in the Proposed Layout. Using one racking system versus the other, therefore, would not cause any new, significant, adverse environmental impacts. The location of interior access roads and inverters, depending upon the final locations, could differ from that shown in the Appendix 11-1. Land coverage ratios will also be adjusted but are not expected to be substantially or significantly different.

Accordingly, the drawings, plan and maps provided as Appendix 11-1 depict the use of tracker racking systems which require a similar Project footprint as the fixed-tilt racking. As part of the alternative layout evaluation, Exhibit 9 presents a site plan depicting a fixed racking system which depicts a slightly smaller Limit of Disturbance (LOD) for the Project.

11(a) Site Plan

The Civil Construction Plans include a Site Plan for the Project (Appendix 11-1), a Landscaping Plan (Appendix 11-2), and a Collector Substation Design (Appendix 11-3), which all together depict the following Project components:

(1) Proposed solar panels, associated mounting features (any concrete pads, foundations, etc.), inverters, and low to medium voltage transformers and any proposed meteorological stations;

(2) Access road travel lanes, including estimated linear distances and road widths;

(3) Proposed grading (temporary grading for construction purposes and permanent contours for final grading);

(4) Electric cable collection lines and number of circuits per proposed electric cable route; overhead and underground cable routes will be differentiated with specific line-types;

(5) The existing electric transmission line (which the Project will interconnect to) and any known existing utilities (including pipelines, as indicated in stipulation 12(c)) and associated rights-of-way (ROW) within the Facility site;

(6) Approximate limits of disturbance for all Project components (panels, access roads, buildings, electric lines, substations, etc.);

(7) Clearing limits for all Project components (panels, access roads, buildings, electric lines, shading vegetation, etc.);

(8) Indication of road crossings for electric cable installations. No off-site permanent ROW is proposed;

(9) Outline of collection and interconnection switchyard/substations, tap line including access driveway, setbacks, and fence line;

(10) Proposed locations of electric cable installations for crossing of streams, waterbodies, roads, etc. and where proposed, any proposed locations of such crossings that will use trenchless methods of installation, including the approximate laydown area (outline of approximate workspace needed) and approximate trenchless installation distances;

(11) No energy storage system(s) is proposed;

(12) Laydown, staging, and equipment storage areas including access driveways and designated parking areas;

(13) No Operation & Maintenance (O&M) facilities are proposed;

(14) Fencing and gates, including clearing associated with fencing;

(15) Property lines and zoning setbacks;

(16) Existing utility equipment locations and easement limits of those existing locations, including electric transmission and distribution lines, cable and telecommunication lines, and other features as applicable (gas pipelines, municipal water, municipal sewer lines, based upon publicly available information, information from participating landowners, and any that are identified during field visits);

(17) Site security features, including perimeter fencing; and

(18) Planted screening locations, if applicable.

The "Overall Site Layout and Key Sheet" included as part of the Civil Construction Plans depicts the proposed locations of the solar arrays, access roads, collection lines, collection substation, laydown and staging areas, and other features as outlined above. The detailed Site Plan and Grading & Drainage Plan drawings (1" = 100') show the proposed locations of Project components relative to mapped streams and wetlands. Soil types and bedrock are depicted on Figures 21-2 and 21-3 in Exhibit 21 relative to Project components.

The Applicant intends to deploy a module similar to the Jinko Solar Eagle 72HM G2 380 – 400 Watt Mono Perc Half Cell Module. A specification sheet for the modules has been included in Appendix 2-1. The Applicant is proposing the use of fixed or tracker racking systems, which will be installed with minimal ground disturbance via driven posts. The drawings, plan and maps provided as Appendix 11-1 depict the use of tracker racking systems which will have a similar Project footprint as the fixed-tilt racking. Aside from driven posts, the only foundations proposed for the Project will be concrete for select components of the collection substation and the switchyard.

11(b) Construction Operations Plan

Specific details relating to construction and operation elements of the Project, such as Project laydown areas, which includes staging, equipment storage, and parking areas, are included in the Preliminary Design Drawings (Appendix 11-1). Material staging areas, construction equipment and worker parking areas (all included as part of designated laydown areas), and points of ingress

and egress are shown on Sheets C.300 through C.314. Grading limits, grade breaks, silt fences, conceptual drainage tiles and filtration basins are indicated on the Grading & Drainage Plan also shown on Sheets C.300 through C.414. Construction details and typical drawings are shown on Sheets C.600 through C.604. Sheets E.650 through E.652 show trench details. Final details relating to Project construction, including final locations of construction trailers/offices and any concrete batch plant locations, as necessary, are not certain at this time as an Engineering, Procurement, and Construction (EPC) Contractor has not yet been selected for the Project. The construction trailers/offices will be located entirely within the currently indicated laydown areas for the Project. Though not anticipated to be required, if necessary for Project construction, concrete batch plants will be located within either the indicated laydown areas or the substation yard.

During construction, the EPC will hire a contractor to plow snow off construction access roads as needed. Snow will be pushed off the access roads and windrowed at each respective edge of the road. The EPC will determine where to push and store snow based upon safety considerations and conditions encountered at that time.

11(c) Grading and Erosion Control Plan

Soils information, site grading, stormwater management, and erosion control measures for both the construction phase and permanent installations are shown in the Grading & Drainage Plans on Sheets C.300 through C.414 and described on Sheets C.609 and C.610. Erosion control details and typical drawings are shown on Sheets C.605 through C.608. These plans depict existing and proposed topography at 1-foot contour intervals. Existing topography was derived from a Light Detection and Ranging (LiDAR) survey contracted by the Applicant and completed in spring 2019. Soil types and boundaries were obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey database for Seneca County, New York. Refer to Exhibit 21 for more detailed geotechnical information including boring reports, depth to bedrock, earthwork volume calculation, etc. Exhibit 21 also references a copy of the Geotechnical Engineering Report prepared by Terracon Consultants, which is also included as Appendix 21-1.

General areas of cut and fill are indicated on Grading & Drainage Plans and estimated cut and fill quantities have been detailed in the Civil Construction Plans. Topsoil will be segregated from common fill (subsoils) and an Environmental Monitor, with an understanding of normal agriculture practices, will be on-site during construction to oversee topsoil separation, as necessary. Additionally, the Applicant will comply with the New York State Department of Agriculture and Markets (NYSDAM) guidance document “Guidelines for Solar Energy Projects – Construction

Mitigation for Agricultural Lands" (dated October 18, 2019), to the maximum extent practicable for requirements specific to construction, restoration, monitoring, and decommissioning. Thus, topsoil anticipated to be stripped will be stripped, graded, replaced, and revegetated to further minimize impacts to agricultural areas. No retaining walls will be necessary during construction.

A Preliminary Stormwater Pollution Prevention Plan (SWPPP) has been included in Appendix 23-3. The preliminary design conforms to the requirements of the New York State Stormwater Management Design Manual (2015). The erosion and sediment control measures shown on the site plans have been designed in conformance with the New York State Standards and Specifications for Erosion and Sediment Control (2016). No stormwater impacts are anticipated to occur as a result of the Project and construction activities will comply with the requirements of the New York State Pollution Discharges Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001, or that are in effect at time of construction). Anticipated erosion and sediment controls and stormwater management practices (SMPs) have been detailed in the SWPPP and the Civil Construction Plans. A Final SWPPP will be prepared to detail the proposed post-construction stormwater control practices and the stormwater design calculations.

11(d) Landscaping Plan

Preliminary Landscape Plans, including drawings depicting proposed landscaping, including areas of trees to be planted, berms, walls, fences, and other landscaping improvements, are provided in Appendix 11-2. Areas of trees to be retained or removed are shown on Preliminary Design Drawing Sheets C.400 through C.414 (Tree Clearing Plans) and described on Sheet C.610. The Preliminary Landscape Plans indicate the location of proposed vegetative screening in relation to Project components and adjacent sensitive receptors and includes general landscape and seeding notes showing planting details, identifying and quantifying the types of tree and shrub species that are proposed, and showing a seed mix for the grass type to be planted within the solar array.

The limits of clearing existing trees are shown on the Site Plan and Grading & Drainage Plan drawings. Clearing is kept to the minimum needed for construction and to prevent shading.

Similar to other projects in New York and in regions that receive snow accumulations, the Applicant intends to hire a local contractor to plow access roads across the Project. Snow will be pushed off the permanent access roads and windrowed at each respective edge of the road. The

O&M personnel will determine where to push and store snow based upon safety considerations and conditions encountered at that time.

11(e) Lighting Plan

The collection substation and switchyard outdoor lighting systems will be designed to provide adequate illumination for security, emergency egress within the Point of Interconnection (POI) facilities, and an indication of the position of disconnect switch blades. The illumination levels shall meet levels identified in the National Electric Safety Code (NESC).

Lighting is only proposed at the Project interconnection facilities and is only for security, safety, and maintenance purposes; no lighting is proposed within the solar arrays. A lighting plan for the collection substation and switchyard is provided as Appendix 11-3 and includes the type, number, and location of exterior lighting fixtures and indicates measures to be taken to prevent or mitigate, to the maximum extent practicable, unnecessary light trespass beyond the Project property line. The lighting plan includes photometrics and manufacturer cut sheets. The collection substation and switchyard will normally be unoccupied. All lighting will be activated manually turned on by a switch. Lighting will be installed facing downward to minimize potential impacts to the surrounding public. Lighting has been designed to eliminate unnecessary light trespass beyond the collection substation and switchyard, will be equipment or pole structure mounted, and will not exceed a 3.4 foot-candle average. During unoccupied periods, lighting will not be illuminated. The collection substation and switchyard will use full cut-off fixtures, no drop-down optics, and task lighting wherever feasible, as specified in the Lighting Plan.

11(f) Architectural Drawings

There are no habitable buildings proposed as part of the Project. Cross-sections of the collection substation and POI switchyard interconnection equipment, as well as fencing and relevant site security features are provided in the POI facility site plan drawings included in Appendix 11-3. These drawings identify the arrangement of the previously noted features, as well as the length, width, height, material of construction, color and finish of relevant components, and the type of fencing to be installed around Project components. Additionally, a floor plan and interior lighting plan for the proposed collection substation control rooms is included. As noted above, the control rooms are not habitable structures and they do not require running water and are not meant for human occupation.

11(g) Design Detail Drawings of Underground and Overhead Facilities

The Appendices to this Exhibit contain typical design details associated with the Project, including the proposed depth and level of cover for buried collection lines and overhead interconnection facilities indicating height above grade, descriptions and preliminary specifications of all major components. The following information is also included:

(1) Collection lines for the Project will be installed underground. The Civil Construction Plans include the following components regarding underground installations:

   (i) Single and multiple-circuit layouts;

   (ii) Co-located installations with dimensions of proposed depth and level of cover;

   (iii) Separation requirements between circuits;

   (iv) Clearing width limits for construction; and

   (v) Operation of the facility, limits of disturbance, and required permanent ROW.

(2) The only overhead line proposed for the Project is the approximately 120-foot transmission line connecting the POI switchyard to the existing transmission line. The Civil Construction Plans (Appendix 11-1) and/or Collector Substation Design (Appendix 11-3) include the following components regarding aboveground installations:

   (i) Elevation plans for overhead facilities (collection and transmission lines) including height above grade, structure layouts, clearing width limits for construction and operation of the facility, and permanent ROW widths;

   (ii) Average span lengths for each proposed layout; and

   (iii) Structure separation requirements (for installations containing more than one pole, etc.) for all single and multiple-circuit layouts.

(3) The solar arrays will be fastened to posts driven into the ground. Typical details of the post installation have been provided on Sheet C.603 of the Civil Drawing Set within the Civil Construction Plans.

(4) A circuit map indicating overhead and underground installations, and number of required circuits proposed per collection line run is included in the Collection System Drawing Set (Appendix 11-3).

(5) A typical collector trench and typical details associated with trenchless installations including typical staging areas, construction machinery arrangements, and bore pits are identified on the Civil Construction Plans;

(6) Energy storage systems are not proposed as part of the Project, and as such, no elevation plans of energy storage systems will be provided; and

(7) Technical data sheets associated with solar panels representative of those to be used for this Project have been provided in Appendix 2-1.

11(h) Interconnection Facilities

For the interconnection facilities, the plans and drawings required by subsections (a) through (g) have been included in Appendices 11-1 and 11-3 to this Exhibit, as well as a profile of the centerline of the overhead interconnection line at an exaggerated vertical scale.

11(i) Engineering Codes, Standards, and Guidelines

Below is a detailed list of engineering codes, standards, guidelines, and practices that the Applicant intends to conform to during the planning, designing, construction, operating, and maintaining of the Project, electric collection system, collection substation, POI switchyard and tap line, and associated structures, as applicable:

- American National Standards Institute (ANSI)
- Institute of Electrical and Electronics Engineers (IEEE)
- Insulated Cable Engineers Association (ICEA)
- American Society of Mechanical Engineers
- National Electric Code (NEC)
- NESC
- National Electric Manufacturers Association
- National Fire Protection Association (NFPA)
- Uniform Fire Prevention and Building Code (Uniform Code)
- United Laboratories

- American Iron and Steel Institute
- American Institute of Steel Construction
- International Building Code 2006
- American Association of State Highway and Transportation Officials (AASHTO) Standard for Aggregates
- American Society of Civil Engineers (ASCE) 7-10 Minimum Design Loads for Buildings and Other Structures
- Federal Occupational Safety and Health Administration (OSHA) 1910.269
- American Concrete Institute (ACI)
- New York State Energy Conservation Construction Code (Energy Code)

11(j) Wetland Boundaries

Wetlands identified within the Project Area are referred to as "delineated wetlands." The Applicant is coordinating with the New York State Department of Environmental Conservation (NYSDEC) and USACE for boundary verification, but this verification has not yet occurred prior to Application filing. The boundaries of delineated wetlands were recorded with a Trimble Geo 7000 XH Global Positioning System (GPS) unit with reported sub-meter accuracy or a Juniper Geode GPS/Global Navigation Satellite System (GLONASS) Sub-meter Receiver. See Section 22(i)(1) and Appendix 22-5 for a detailed description of how these delineated wetlands were identified within the Project Area. Wetlands in inaccessible areas within 100 feet of the limits of disturbance were estimated and are referred to as "predicted wetlands".

The Civil Construction Plans depict all delineated wetlands. See Figure 22-3 depicting delineated wetlands within the Project Area and subsequent 100-foot area from the limits of disturbance. Shapefiles provided to the NYSDEC and the New York State Department of Public Service (NYSDPS) with the Application include delineated wetlands and predicted wetlands.

11(k) Site Plans including Vegetation, Ground Disturbance, and Wetlands

As referenced above, the Civil Construction Plans depict all Project components; proposed grade changes and conceptual locations for stockpile areas; the limits of ground disturbance and vegetative clearing; and all field-delineated wetlands, predicted wetland boundaries and New York State (NYS) regulated 100-foot adjacent areas and NYS regulated wetlands located within 100 feet of all areas to be disturbed by construction at a scale of 1 inch equals 50 feet.