



## Baron Winds Project

Case No. 15-F-0122

1001.11 Exhibit 11

Preliminary Design Drawings

## EXHIBIT 11 PRELIMINARY DESIGN DRAWINGS

The Preliminary Design Drawings, which are included in Appendix M of this Application, were prepared under the direction of a professional engineer who is licensed and registered in the State of New York using computer software (i.e., AutoCAD). These drawings are labeled "for permitting only not for construction".

### (a) Site Plan

The Preliminary Design Drawings in Appendix M include site plan drawings for the Facility, which depict existing and proposed 2-foot contours. Consistent with the Stipulations (executed on November 8, 2017) the 2-foot contours were generated through use of publicly available 10-meter resolution elevation data. The Preliminary Design Drawings have been prepared at a scale of 1" = 100', with the exception of those sheets associated with the Facility collection lines, which have been prepared at a scale of 1" = 200'. These drawings depict the following Facility components:

- Access roads;
- Turbine locations, and crane pads (typical turbine foundation details are confidential and will be provided under protective cover);
- Turn-around areas to be used during construction;
- Proposed grading (permanent contours);
- Electric collection lines – the required number of circuits for each collection line route are indicated on the site plans. Also, overhead and underground cable routes are differentiated with specific line-types;
- Approximate limits of disturbance for all Facility components (turbines, access roads, buildings, electric lines, substation, etc.) based on impact assumptions provided in Exhibit 22;
- Limits of disturbance for all Facility components (turbines, access roads, buildings, electric lines, etc.) based on preliminary grading requirements;
- Indication of permanent right-of-way (ROW) for all electric cable installations;
- Proposed locations that will utilize trenchless methods of electric cable installations (including layout of approximate laydown areas and trenchless installation distances);
- Applicant's proposed setbacks from occupied structures, property lines, existing overhead electric lines, and roads;
- Proposed locations of laydown areas to be used for equipment storage and parking areas;
- Collection substation outline, including access driveway and fence line;
- The existing Canandaigua substation, which will be the Facility's point of interconnection (POI) substation;
- Preliminary location of the operation and maintenance (O&M) building, access driveway, and parking area;
- Permanent meteorological towers; and

Please note that the outline of concrete batch plant, including access driveway and preliminary or typical equipment configuration, is provided in Appendix O (Concrete Batch Plant General Information).

The Preliminary Design Drawings also depict all delineated wetlands (the 100-foot adjacent areas are depicted on the Wetland and Stream Impact Drawings included as Appendix CCC) and streams. More detailed information about wetlands and streams, including a detailed drawing set specifically associated with proposed impacts, is included with Exhibit 22 of this Application as Appendix CCC. In addition, a soil types map is also included with the drawing sets for each area. See Exhibit 21 for more detailed information about soils within the Facility Site.

With respect to typical details for the O&M building, see Appendix N. With respect to the on-site concrete batch plant, as depicted on Figure 3-1, the Applicant currently anticipates this feature will be at the centrally located staging area adjacent to Davis Road. General information about the temporary concrete batch plant, including a graphic depicting a conceptual layout of the plant within this staging area, is included in Appendix O. In addition, the Applicant may need to obtain concrete from local or regional suppliers to supplement the on-site concrete batch plant. In the alternative, the Applicant may opt to rely solely on offsite suppliers for concrete.

The Preliminary Design Drawings are organized into six "Areas": Area-1; Area-2; Area-3; Area-4; Area-5; and Area-6. Generally, the drawing sets for each of these Areas are further organized as follows: area soils map, collection line circuit map, index map followed by individual plan and profile drawings for access roads/turbines, and index map followed by individual plan and profile drawings for electrical collection. For instance, the Area-1 drawing set includes:

- Drawing 1-001: Area 1 Soils Map
- Drawing 1-002: Area 1 Collection Line Circuit Map
- Drawing 1-100: Area 1 Index Map, Access Road Plan and Profile
- Drawings 1-101 through 1-111: Area 1 Access Road Plan and Profile
- Drawing 1-200: Area 1 Index Map, Collection Line Plan and Profile
- Drawings 1-201 through 1-205: Area 1 Collection Line Plan and Profile

(b) Construction Operations Plan

The Preliminary Design Drawings included in Appendix M depict the location of all anticipated construction staging/material laydown areas, and these areas will include construction preparation, construction equipment and worker parking areas, and the contractor trailers/offices.

With respect to notable excavations associated with the Facility, as indicated in (a) above, the Preliminary Design Drawings include plan and profile sheets, each of which indicates the anticipated cut and fill associated with notable Facility construction activities. Therefore, notable excavations are associated with areas anticipated to experience notable cut as identified on the profile drawings. Excess soil will be stockpiled along the construction corridors and used in site restoration.

(c) Grading and Erosion Control Plans

Unlike a conventional energy generating facility in which a large tract of contiguous acreage must be graded in order to properly site the facility, the footprint of a wind power project is relatively small, is more spread out, and is designed to fit within the existing land form. An erosion control plan was prepared consistent with the requirements of 16 NYCRR § 1001.11(c) and is provided in Appendix II. Publicly available contour data was obtained from Steuben County (10-meter contour intervals). Using AutoCAD software, a three-dimensional (3D) surface was created from which 2-foot contour intervals were interpolated. Existing and proposed contours (2-foot intervals) are depicted on the plan view sheets of the Preliminary Design Drawings, as well as the proposed locations of stormwater control measures (depicted as "stormwater key notes" and associated symbols on the design drawings). In addition, as indicated in Section (a) above, a soil types map is also included with the drawing sets for each region. See Exhibit 21 for more detailed information such as depth to bedrock, preliminary cut and fill calculations, a summary of test borings conducted at a sub-set of turbine locations and substation locations, etc. Exhibit 21 also includes an overview of the stand-alone Preliminary Geotechnical Assessment (included as Appendix KK).

(d) Landscaping Plan

Based on the Applicant's experience with wind power development, the only potential locations for landscaping plans would be associated with the collection and/or POI substation. As mentioned previously, the POI substation is existing and will not be under the Applicant's ownership. As indicated in the Visual Impact Assessment (VIA) prepared for the Facility, the collection substation is located in a field not proximate to visually sensitive receptors and is surrounded by existing forest vegetation (see Exhibit 24 for additional information). Therefore, the visual impact associated with the collection substation is anticipated to be essentially non-existent, and conceptual landscape screening plans are not proposed.

With respect to those areas where trees may be removed due to Facility construction and operation, see the Preliminary Design Drawings included as Appendix M, which depict the Facility footprint on recent aerial imagery. With respect to the anticipated acreage of tree removal, see Exhibit 22. An on-site inventory and survey of all trees to be removed is not included in the Application.

With regard to visual impacts at historic resources, based on field review and visual simulations prepared as part of the VIA for the Facility, it is anticipated that the Baron Winds Facility will not have a significant adverse visual impact on historic resources listed in or eligible for listing in the State/National Register of Historic Places (S/NRHP). Therefore, the Applicant has not proposed using vegetation as mitigation to address potential visual screening needs at historic resources or community or cultural sites (see Exhibit 20 for additional information on cultural resources).

(e) Lighting Plan

As indicated in the Preliminary Security Plan prepared for the Facility (see Exhibit 18 for additional information), security lighting is an important component of Facility security. Manufacturer cuts sheets for Facility lighting are not readily available to the Applicant at this time but will be provided with the Facility Exterior Lighting Plan in accordance with proposed Condition 60 (see Appendix D for the Applicant's Proposed Certificate Conditions). Below is an overview of the Applicant's proposed lighting program.

Security lighting will be installed at all wind turbines, at the substation, and the O&M building. Security lighting that fails will be promptly replaced and checking the functionality of security lighting will be a component of all maintenance inspections of substations and turbines in accordance with the Facility's inspection schedule.

Substation lights will be kept to the minimum necessary for security and maintenance safety. Substation lighting will be replaced with low-light video and/or camera surveillance monitoring or other security methods that do not require lighting whenever practicable. Substation lighting will be set on a motion detector or an auto-off switch, and hooded downward. The light will be the lowest intensity required to accomplish its safety purpose and will not be a sodium vapor light. Following Certification of the Facility, a lighting designer will be employed to design a lighting plan for the substation in order to avoid any redundant and ineffective lighting.

O&M building lights will be set on a motion detector and will be hooded downward. If motion detector lighting is not feasible, the light will be placed on an auto-off switch in which the light will automatically turn off after a specified period of time (i.e., the period of time needed to accomplish any nighttime safety or maintenance work). The light will be the lowest intensity required to accomplish its safety purpose and will not be a sodium vapor light

(f) Architectural Drawings or Typical Details

The Applicant has not yet decided whether to build a new O&M building or purchase/lease an existing structure. Typical architectural drawings of an O&M building are included in Appendix N. Note that these drawings are presented for

informational purposes only, because changes to the O&M building drawings may be necessary following Certification. If the Applicant opts to purchase an existing building to utilize for O&M purposes, the layout and architecture of the building will be typical to the area.

Appendix Q includes typical turbine foundation drawings; however, these drawings will be filed separately under confidential cover.

Finally, Appendix J contains typical substation drawings. As with the O&M building, these typical drawings may also change following Certification based on final design. Typical drawings of the improvements to the existing point of interconnection substation are provided in Appendix J.

(g) Typical Design Detail Drawings

The Preliminary Design Drawings and various appendices of this Application contain typical design details for all Facility components associated with the Facility, summarized as follow:

- Access roads (Preliminary Design Drawings, Appendix M)
- Turbine laydown areas (Preliminary Design Drawings, Appendix M)
- Horizontal directional drilling (Preliminary Design Drawings, Appendix M), including staging area/bore pits
- Buried collection lines (Appendix H), including single and multiple-circuit layouts with dimensions of proposed depth and level of cover, separation requirements between circuits, limits of disturbance for construction and operation, and required permanent ROW.
- Overhead collection lines (Preliminary Design Drawings in Appendix M and details in Appendix H), including typical elevation for overhead collection lines including height above grade, structure layouts, clearing width limits for construction and operation of the Facility, permanent ROW widths, average span lengths for each proposed layout, and structure separation requirements (for installations containing more than one pole, etc.) for all single and multiple-circuit layouts.
- On-site concrete batch plant (Appendix O). See Section (a) above for additional information about the need for, and possible location of, a concrete batch plant. In addition, please note that preliminary estimates indicated that 40 concrete truck trips per turbine foundation will be required, for an approximate total of 3,040 trips (6,080 round trip). See Exhibit 25 for additional information.
- Wind turbine foundations (Appendix Q; filed separately under confidential cover)
- Wind turbine brochures (Appendix K)
- Typical wind turbine technical and safety manuals (Appendix R; filed separately under confidential cover)

Descriptions and specifications of wind turbine towers and blades is provided in Exhibit 9, Table 9-1.

(h) Interconnection Facility Drawings

A single line drawing of the POI substation is included in the System Reliability Impact Study (SRIS), which is Appendix F to the Application and has been filed separately under confidential cover. Additional details on the POI substation will be available once the Facilities study is complete (which will be after the Certificate is issued by the Siting Board). The general arrangement of the POI substation is included in the Preliminary Design Drawings, and also in Appendix J.

(i) Engineering Codes, Standards, Guidelines, and Practices

The list of codes and standards that have been and will be considered during the design, construction, operation and maintenance of this Facility is extensive. The following is provided as a representative list of applicable codes and standards, which will be updated following Certification, during final design:

- The Aluminum Association (AA)
- American Association of State Highway and Transportation Officials (AASHTO)
- American Concrete Institute (ACI)
- American Institute of Steel Construction (AISC)
- American Society of Civil Engineers (ASCE)
- American Society of Mechanical Engineers (ASME)
- American Society for Testing and Materials (ASTM)
- American Welding Society (AWS)
- Concrete Reinforcing Steel Institute (CRSI)
- Edison Electric Institute Publications (EEI-AEIC)
- Federal Energy Regulatory Commission (FERC)
- Insulated Cable Engineers Association (ICEA)
- International Electro-technical Commission (IEC)
- Institute of Electrical and Electronics Engineers (IEEE)
- Mine Safety and Health Administration (MSHA)
- National Bureau of Standards (NBS)
- National Electrical Manufacturers Association (NEMA)
- National Electric Safety Code (NESC)

- National Electrical Testing Association (NETA)
- National Fire Protection Association (NFPA)
- National Institute of Standards and Technology (NIST)
- National Ready Mixed Concrete Association (NRMCA)
- Occupational Safety and Health Administration (OSHA)
- Portland Cement Association (PCA)
- Rural Electrification Administration (REA)
- Society of Automotive Engineers (SAE)
- Society for Protective Coatings (SSPC)
- Uniform Building Code (UBC)
- Underwriter's Laboratories, Inc. (UL)

(j) Flood Hazard Areas

The Special Flood Hazard Area (SFHA or "100-year floodplain") associated with Neils Creek crosses the central portion of the Facility Site (see Figure 4-7). A portion of the overhead collection line will span Neils Creek and the associated SFHA. However, the SFHA is narrow enough at the crossing (200 feet wide) that overhead collection line poles will be sited outside the 100-year floodplain. Although one pole is located slightly outside the 100-year floodplain, the electrical systems are already elevated to protect them from damage. As a result, no further protection measures are necessary or reasonable. No other Facility components will be sited within or adjacent to the 100-year floodplain.