Exhibit B

Project Description and Schedule

Nolin Hills Wind Power Project
February 2020

Prepared for

Capital Power
RESPONSIBLE ENERGY FOR TOMORROW

d/b/a Nolin Hills Wind, LLC

Prepared by

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Acronyms and Abbreviations

APLIC	Avian Power Line Interaction Committee
Applicant	Nolin Hills Wind, LLC
ASC	Application for Site Certificate
BPA	Bonneville Power Administration
CFR	Code of Federal Regulations
EFSC	Energy Facility Siting Council
FAA	Federal Aviation Administration
GE	General Electric
GSU	general step-up
kV	kilovolt
met tower	meteorological data collection tower
MW	megawatt
O&M	operations and maintenance
OAR	Oregon Administrative Rule
ORS	Oregon Revised Statute
Project	Nolin Hills Wind Power Project
SCADA	Supervisory Control and Data Acquisition
UEC	Umatilla Electric Cooperative
UPS	uninterruptible power supply

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1.0 Description of Proposed Project – OAR 345-021-0010(1)(b)(A)(i)

Exhibit B was prepared to meet the submittal requirements in Oregon Administrative Rule (OAR) 345-021-0010(1)(b), which states:

> **OAR 345-021-0010(1)(b)**
>
> *(b) Exhibit B. Information about the proposed Project, construction schedule and temporary disturbances of the site, including:*
>
> *(A) A description of the proposed energy Project, including as applicable:*
>
> *(i) The nominal electric generating capacity and the average electrical generating capacity, as defined in ORS 469.300;*

Nolin Hills Wind, LLC (the Applicant) proposes to construct the Nolin Hills Wind Power Project (Project), a wind energy project with a nominal generating capacity of approximately 350 megawatts (MW) and up to 117 average MW of energy, in Umatilla County, Oregon (see Figure C-1 in Exhibit C). The Project comprises up to 116 wind turbine generators, depending on the turbine model selected and the final layout during the micrositing process. If larger turbines are selected, fewer turbines will likely be installed. Power generated by the Project will be transmitted by 34.5-kilovolt (kV) electrical collector lines that will extend up to approximately 99 miles total in length, located primarily underground with overhead segments where needed. The Applicant proposes to construct up to two on-site Project substations to increase the voltage from the 34.5-kV collection system to 230 kV. The Project will interconnect to the regional grid via either publicly owned and operated transmission lines to be constructed locally by the Umatilla Electric Cooperative (UEC), or a new 230-kV transmission line anticipated to be constructed, owned, and operated by the Applicant to the proposed Bonneville Power Administration (BPA) Stanfield Substation.

Other Project components include site access roads, one operations and maintenance (O&M) building, meteorological data collection towers (met towers), and temporary construction yards. These facilities are all described in greater detail in Section 7.0.

1.1 Definition of Site Boundary

The Site Boundary establishes the perimeter of the site, within which all Project facilities will be located. The Site Boundary encompasses approximately 48,077 acres of private land near the town of Nolin in Umatilla County, Oregon.

The Applicant has established micrositing corridors within the Site Boundary. Micrositing corridors are the specific, continuous areas of land within the Site Boundary where the construction of facility components has been planned. The micrositing corridor is a minimum of 1,000 feet in width along turbine string corridors, and wider in some locations. The width of the micrositing corridors around the site access roads and collector lines is a minimum of 300 feet in width. The micrositing corridor around the 230-kV transmission line is also approximately 300 feet in width and will contain all 230-kV transmission line components and associated site access roads. Wider areas of the micrositing corridor will encompass the Project substations, met towers, the O&M Building, and construction yards. The micrositing corridor excludes areas, where appropriate, to avoid impacts to sensitive cultural, biological, or environmental resources, such as wetlands or Category 1 habitat. The total micrositing corridor includes approximately 13,868 acres within the Site Boundary.

The micrositing corridors have been surveyed in accordance with Oregon Department of Energy requirements for the Application for Site Certificate (ASC), and impact calculations and analyses will be based on a worst-case, or most conservative, scenario customized for each resource under an Energy Facility Siting Council (EFSC) standard. The Applicant will demonstrate as part of the ASC that the proposed Project meets all applicable standards for a wind energy facility.

The Applicant anticipates that the Project will begin construction in spring 2021, pending issuance of a Site Certificate from EFSC, with commissioning completed and commercial operation targeted for the end of 2022.

1.2 Turbine Options

To allow flexibility in the choice of wind turbines at the time of construction, the Applicant has analyzed impacts using two different turbine models, while limiting the total maximum generating capacity to 350 MW. This approach will allow the Applicant to select the most appropriate turbine model available at the time the turbines are acquired, so long as the turbines selected result in no greater impact than allowed for in the Site Certificate and satisfy all the pre-construction conditions of the Site Certificate. This flexibility is required because turbine manufacturers offer new turbine models with improved technology and retire older models approximately every one to two years.

Turbine Option 1 utilizes up to 58 Siemens-Gamesa 6.0-MW turbines. Turbine Option 2 utilizes up to 116 General Electric (GE) 3.03-MW turbines. Analyzing impacts for two turbine types allows for the representation of a range of turbine technologies and associated impacts that are currently available or forecasted across all turbine vendors. These two turbine options define the maximum number and provide boundaries on the size of wind turbines for the Project (see Section 2.1). The ultimate number of wind turbines, and the specific model and manufacturer used, will be determined near the time of construction. These preliminary Project options have involved significant engineering design work guiding the placement of turbines and supporting facilities while minimizing their impacts, and while representative of the final layout, do not necessarily indicate the specific location for each turbine, the final turbine model, or the final location of all the supporting Project facilities. For this reason, the analysis of the impacts of facility construction and operation assumes both turbine options could be implemented and focuses on the largest potential impact to each resource. The turbine type with the greatest potential impact may not be the same for each analysis. The final layout will be determined prior to construction and will reflect additional survey data, final engineering design, and the Applicant's ongoing process of avoiding and minimizing impacts.

1.3 Grid Interconnection

The Applicant anticipates that the Project will connect to the BPA transmission system via new and upgraded UEC transmission lines from the northern Project substation to the existing UEC Cottonwood Substation, or via a new overhead 230-kV transmission line to the proposed BPA Stanfield Substation north of the Umatilla River. From the Cottonwood Substation, an existing UEC 230-kV transmission line with capacity for the additional power generated by the Project would carry that power north to BPA's McNary Substation. The UEC Cottonwood route is currently considered the primary option, with the BPA Stanfield route as a backup option. The final decision regarding which route will be used will be made by the Applicant based on the final project construction schedule, BPA and UEC system requirements, anticipated costs, and other factors such as transmission agreements. Both transmission line routes are shown on Figures C-4 and C-5 in Exhibit C.

If the UEC Cottonwood route is selected, that line would be owned and operated by UEC. Upgrades and additional infrastructure to their network are expected to be handled by UEC and will be authorized either through local Umatilla County permitting or through EFSC review (to be determined prior to submittal of the Final ASC). If maintained for EFSC authorization, the UEC transmission line will be subject to EFSC review pursuant to applicable EFSC standards. This Preliminary ASC has conservatively included the UEC transmission line as part of the Project and addressed its potential impacts in the applicable exhibits per EFSC standards. Since UEC is concurrently proceeding with County permitting for the transmission line, the Final ASC will be updated as needed pending completion of the local process. If the BPA Stanfield route is used, the necessary new transmission line is anticipated to be constructed, owned, and operated by the Applicant. The impacts of the BPA Stanfield route are included as part of this Project, with evaluation pursuant to applicable EFSC standards. Both 230-kV transmission line routes are described further in Section 7.1.2 of this exhibit.

2.0 Major Components, Structures, and Systems – OAR 345-021-0010(1)(b)(A)(ii)

> *(ii) Major components, structures and systems, including a description of the size, type and configuration of equipment used to generate electricity and useful thermal energy;*

Major components, structures, and systems associated with the proposed Project are summarized below:

- Wind turbine generators, including the nacelle, blades, rotor, and tower;
- Turbine foundations; and
- Generator step-up (GSU) transformers and transformer foundations, and associated switchgear.

The analysis presented in this ASC is a worst-case scenario with respect to each impact analyzed. For any given impact, the turbine model that causes the greatest impact to the resource under consideration has been evaluated and presented in the respective exhibit. For example, the scenic resource analysis focuses on the tallest turbine model and, alternatively, the soil impact analysis applies the layout with the greatest number of turbines. In this manner, this ASC will ensure that the Project meets all EFSC standards for a Site Certificate and will allow the Applicant flexibility in micrositing turbines within the Site Boundary.

2.1 Turbine Options

A wind turbine generator consists of a three-bladed rotor, attached to a nacelle that is mounted on a tubular tower. In operating mode, the rotor is located on the upwind side of the tower. The Applicant is considering wind turbine models with specifications that have the following maximum ranges:

- Nominal power ranging from 3.03 MW to 6.0 MW;
- Rotor diameter ranging from 459 to 558 feet; and
- Tower heights ranging from 266 to 377 feet. The combined tower and rotor height (maximum blade tip height) ranges from 496 feet to 656 feet.

The potential Project impacts are based on a range depicted by two representative wind turbine models: Option 1, the Siemens-Gamesa 6.0 MW turbine; and Option 2, the GE 3.03 MW turbine. Table B-1 shows the key characteristics for each turbine option. The use of two turbine options defines a representative range of turbine technical specifications and maximum impact parameters for the Project. The Project's total nominal generating capacity will be 350 MW. Figures C-4 and C-5 in Exhibit C show representative turbine locations for Option 1 and Option 2, respectively.

Table B-1. Wind Turbine Model Representative Option Characteristics

Turbine Model	Generating Capacity	Tower Height (feet)	Rotor Diameter (feet)	Total Maximum Blade Tip Height (feet)	Minimum Blade Tip Clearance (feet)	Total Maximum Number of Turbines
Option 1 (Siemens-Gamesa)	6.0 MW	377	558	656	98	58
Option 2 (GE)	3.03 MW	266	459	496	36.5	116

2.2 Configuration

Turbines will be spaced as required by manufacturers to minimize the turbines' turbulence (or wake effect) on downwind turbines and to optimize energy output. Turbines will be connected via electrical collection and fiber-optic communication lines, feeding turbine output into one of the two on-site substations. The collection and communications lines will be placed primarily underground, but may include some overhead segments where avoidance of subsurface risk and sensitive features is necessary, where underground cabling is not feasible, or where overhead segments are otherwise determined appropriate to connect to the Project substations. At the on-site substations, power will then be "stepped up" and fed into the proposed 230-kV transmission line. Aviation lighting will be mounted on turbines per Federal Aviation Administration (FAA) requirements.

2.3 Components and Specifications

Wind turbine generators are composed of three major components: the nacelle, the blades, and the tower (see Figure B-1). The nacelle sits atop the turbine tower. It houses the gearbox, generator, and control systems for the turbine, and is where the turbine blades attach to the hub. Access to the nacelle is via a ladder inside the turbine tower, which is accessible by a locked doorway at the base of the tower. The nacelle is mounted to the turbine tower on a geared plate that allows the turbine to rotate horizontally, orienting the nacelle such that the rotor faces into the wind to maximize its capture of the available wind resource. The roof of the nacelle is designed to be removable or opened from within to accommodate major maintenance activities such as the replacement of a gearbox. The floor of the nacelle acts as a pan to contain any potential spills of gearbox or hydraulic fluid.

Turbine blades are attached to the rotor hub, which is mounted to the front of the nacelle. A rotor blade is composed of laminated fiberglass and carbon fiber, and typically is constructed as a single piece (although it is possible that blades may be fabricated in two pieces for ease of transport and assembly at the Project). The rotor diameters under consideration by the Applicant are listed in Table B-1.

When operating, the rotor turns at a rate between 4.9 and 12.5 revolutions per minute. The area covered by the rotating blades is referred to as the rotor swept area. The turbine begins generating electricity at wind speeds of approximately 7 to 9 miles per hour, although this wind speed varies by turbine size and manufacturer. At wind speeds greater than about 55 miles per hour, the turbine shuts down; the blades are feathered so they do not catch the wind, brakes are applied to slow and stop the rotor, and once stopped, the rotor may be locked to prevent damage to the turbine from excessive wind speeds.

A turbine tower is a cylindrical steel structure tapered from the base to the top, on top of which is mounted the nacelle. Tower heights vary by turbine model and manufacturer. Specifications for heights under consideration for use at the Project appear in Table B-1, with the potential for taller towers for other turbine types that have a smaller rotor diameter. A self-diagnosing controller is located inside the base of the tower. The interior of a tower is accessible by a locked door above ground level via a short stairway, and the tower may feature either an internal ladder or elevator lift system providing protected access to the nacelle. Towers will be fabricated in sections and assembled on-site. A typical turbine tower will be approximately 15 feet across at the base, tapering to 12 to 14 feet across at the nacelle. Each tower will arrive at the Project in three to five sections, to be assembled on-site.

The turbines will be marked and lighted according to FAA standards (FAA Advisory Circular 70/7460-1L), but no other lighting will be used on the turbines. FAA standards call for painting the turbines and towers white or light gray, making them visible to pilots from the air. Flashing red aviation lighting will be mounted atop turbines. For turbines greater than 499 feet in height, the FAA requires all turbines to have two lights placed on the nacelle (one on each side). Under current FAA standards, all of the lights will be programmed to flash in unison, allowing the entire Project to be perceived as a single unit by pilots flying at night. The specific location, operation, and type of aviation lighting system will be determined in consultation with FAA prior to commencing operation of the Project.

2.4 Turbine Foundations

Each turbine will be secured to a foundation. Typical wind turbine foundations are reinforced concrete, spread-footing, or plate foundations. Other foundation types such as pile or caisson-type foundations may be considered based on site-specific soil conditions. The actual foundation type and design for each tower will be determined after on-site geotechnical studies; however, for the purposes of the ASC, the Applicant assumes that typical spread-footing or bedrock foundations will be used (Figures B-2 and B-3). Typical spread-foot foundations reach a depth of 10 feet below grade and can be as large as 80 to 85 feet in diameter. The center of the foundation will be approximately 6 feet thick, tapering to approximately 2 feet thick at the outer edges. An 18-foot-diameter pedestal, upon which the turbine tower is mounted, projects from the center of the footing to above ground level.

Where indicated by site-specific geotechnical investigation, bedrock foundations may be installed. This involves stripping the topsoil and subsoil to the top of the bedrock. Mechanical methods are used to remove bedrock to the design depth of the turbine foundation. Holes are drilled to the rock anchor bolt design depth. The concrete pad is then installed and the rock anchor bolts are placed to secure the concrete pad foundation.

Construction of each turbine will require the temporary disturbance of an area around the foundation to accommodate foundation excavation and soil storage, and to provide a stable area for the staging and assembly of turbine and tower components and the operation of construction cranes and other heavy equipment (Figure B-4). This temporary disturbance area is approximated by a 300-foot radius (600-foot diameter) circle around the turbine, about 6.5 acres in size. Permanent disturbance of the foundations is approximated by a 4-foot radius (82-foot-diameter) circle, or about 0.12 acres in size. Following erection of the turbines, the construction yards will be reclaimed through regrading to pre-construction contours, restoration of topsoil as needed, soil decompaction if necessary, and seeding or planting to restore habitat, as appropriate. The Applicant will coordinate with landowners for final restoration requirements in agricultural areas.

2.5 Generator Step-Up Transformer and Transformer Foundations

A GSU transformer is installed at each turbine to step up the output voltage from the turbines' 690 volts to the voltage of the collector system (34.5 kV). Some turbine models include a GSU inside the turbine. If the output of the GSU is less than 34.5 kV, or a transformer is not included in the turbine, then a pad mount transformer is required to step up the voltage to match the collector system. Typically, the pad mount transformer is a rectangular box with a footprint approximately 8 feet by 11 feet located adjacent to the base of the turbine tower (Figure B-4). Support for the transformer will be provided by a concrete pad or foundation 2 to 6 feet thick. The thickness and extent of the pad mount transformer foundation is dependent upon soil conditions at the site, and will not be determined until after the geotechnical study is conducted (see Exhibit H for information related to site-specific geotechnical study).

3.0 Site Plan and General Arrangement – OAR 345-021-0010(1)(b)(A)(iii)

(iii) A site plan and general arrangement of buildings, equipment and structures.

A site plan is included in Exhibit C, Figures C-4 and C-5.

4.0 Fuel and Chemical Storage Facilities – OAR 345-021-0010(1)(b)(A)(iv)

(iv) Fuel and chemical storage facilities, including structures and systems for spill containment.

During construction of the Project, small quantities of chemical materials may be utilized in the temporary construction yards (i.e., central and distributed staging areas), and stored at the O&M Building or in an oil storage shed. Such materials may include cleaners, insecticides or herbicides, paint, or solvents. None will be present in substantial, reportable quantities; the amounts present (if any) will be no greater than household quantities.

Fuels will be the only hazardous material that may be stored in substantial quantities on-site during construction. The Applicant anticipates that up to approximately 500 gallons of diesel fuel and 200 gallons of gasoline may be kept on-site for the refueling of construction equipment. These both will be stored in the temporary construction yards. Most fuel will be delivered to the construction yards by a licensed specialized tanker vehicle on an as-needed basis. There will be no substantial quantities of lubricating oils, hydraulic fluid for construction equipment, or other hazardous materials maintained on-site during construction. Lubricating oil and hydraulic fluids for construction equipment will be brought in on an as-needed basis for equipment maintenance by a licensed contractor using a specialized vehicle, and waste oils removed by the same maintenance contractor. Hydraulic oils for the turbines and dielectric oils for the transformers will similarly arrive on an as-needed basis and transferred into the receiving components; none will be stored on-site.

During operations, chemical storage will include up to 10 lead-acid batteries in the control room within the O&M Building as a backup uninterruptible power supply (UPS) system. Each battery weighs 56 kilograms and contains sulfuric acid within its maintenance-free sealed leakproof exterior. Sulfuric acid is considered an extremely hazardous material by the U.S. Environmental Protection Agency under 40 Code of Federal Regulations (CFR) §355. As required by regulation, secondary containment will be employed, and the Applicant will include sulfuric acid as part of its annual Emergency Planning and Community Right-to-Know Act report to local emergency responders. The batteries will be replaced at least every 5 years, if not earlier as indicated by UPS system controls. Replacement of batteries will be handled by a qualified contractor and adhere to applicable regulations for transport and disposal, including but not limited to 49 CFR §173.159.

There will be no substantial quantities of fuels or oils on-site during operations, except as contained in qualified oil-filled equipment, including the turbine gearboxes and substation transformers. Lubricating oil (5 gallons per turbine per year) will be brought in on an as-needed basis for periodic oil changes in the turbine gearboxes by a maintenance contractor using a specialized vehicle, and waste oils will be removed in the same way. Small quantities of gear oil will likely be maintained on-site for occasional top-offs; it is anticipated that less than 10 gallons will be stored in the O&M Building at any given time. A full gear oil change will be done as-needed by a specialized contractor and used oils will be removed for recycling. Small quantities (2 to 3 gallons) of pesticides or herbicides, paint, solvents, or cleaners may also be kept on-site; when not in use these will be stored in the O&M Building. Sorbent materials will be maintained on-site to capture any small spills that may occur.

Secondary containment is optional for the transformers and for the turbine gearboxes, as these are classified as qualified oil-filled operational equipment under the Environmental Protection Agency's Amended Spill Prevention, Control, and Countermeasure Rule issued in 2006 (EPA-550-F-06-008). Per this amended rule, instead of providing secondary containment for qualified oil-filled operational equipment, an owner or operator may prepare an oil spill contingency plan and a written commitment of manpower, equipment, and materials to quickly control and remove discharged oil; the plan must include an inspection or monitoring program for the equipment to detect a failure and/or discharge. Alternatively, the transformers may be installed on foundations that provide secondary containment, or sorbent materials may be kept on-hand to capture minor leaks. The Applicant plans to install secondary containment for the substation transformers, and the specific design will be determined prior to construction of the substations. The nacelles and turbine foundation will effectively function as secondary containment for the turbine gearboxes, such that no additional secondary containment systems are needed for the turbines.

As further described in Exhibit I, the Applicant will prepare and maintain a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) to outline preventative measures and practices to reduce the likelihood of an accidental spill, and to expedite the response to and remediation of a spill should one occur.

5.0 Fire Prevention and Control – OAR 345-021-0010(1)(b)(A)(v)

(v) Equipment and systems for fire prevention and control.

The greatest risk of fire will occur during construction of the Project, when welding and metal cutting for foundation rebar frames will take place, and vehicles and construction equipment may be used in areas of tall, dry grass. To prevent fires from occurring, the construction contractor will implement a number of systems and procedures. These will include requirements to conduct welding or metal cutting only in areas cleared of vegetation, and to keep emergency firefighting equipment on-site when potentially hazardous operations are taking place. Construction workers will be prohibited from parking vehicles in areas of tall dry vegetation, to prevent fires caused by contact with hot mufflers or catalytic converters.

The risk of fire during the operational phase of the Project is low. While incidents of wind turbine fires have occurred, these incidents are rare, and have generally been traceable to poor maintenance or electrical malfunction. The risk of turbine fires will be minimized through proper maintenance of the turbine and its critical mechanical and electrical components. Lightning protection systems are built into the turbine blades and tower to electrically ground the entire structure and to eliminate the potential for lightning-caused fires. With proper maintenance and safety checks, the electrical collection system and 230-kV transmission line are unlikely to cause a fire.

6.0 Sections Not Applicable to the Proposed Project – OAR 345-021-0010(1)(b)(A)(vi)(vii)(viii)

(vi) For thermal power plants:

(I) A discussion of the source, quantity and availability of all fuels proposed to be used in the Project to generate electricity or useful thermal energy.

(II) Process flow, including power cycle and steam cycle diagrams to describe the energy flows within the system.

(III) Equipment and systems for disposal of waste heat.

(IV) The fuel chargeable to power heat rate.

(vii) For surface facilities related to underground gas storage, estimated daily injection and withdrawal rates, horsepower compression required to operate at design injection or withdrawal rates, operating pressure range and fuel type of compressors.

(viii) For facilities to store liquefied natural gas, the volume, maximum pressure, liquefication and gasification capacity in thousand cubic feet per hour.

Wind turbines do not generate waste water or solid waste during operation. Small quantities of waste water and solid waste are generated by the O&M Building, the details of which are covered in Exhibit V. The Project is not a thermal power plant. The Project will generate wind power; no waste heat will be generated. The Project does not involve underground gas storage. The Project does not propose the storage of liquefied natural gas. Therefore, this rule is not applicable.

7.0 Major Supporting Facilities – OAR 345-021-0010(1)(b)(B)

> *(B) A description of major components, structures and systems of each related or supporting Project;*

Related or supporting facilities consist of the 34.5-kV electrical collector lines, up to two on-site Project substations, a 230-kV transmission line, communication and Supervisory Control and Data Acquisition (SCADA) systems, an O&M building, met towers, access roads, and additional construction areas such as temporary staging areas and one or more concrete batch plants.

7.1 Electrical Collection System

The Project's collection system carries power generated by the Project's turbines at 34.5 kV. Power will be initially generated at 690 volts by the Project's turbines, then stepped up to 34.5 kV through the nacelle-mounted or pad mount transformers and conducted onto the 34.5-kV electrical collector lines. The collector lines will then carry the power to one of the two on-site Project substations, in which the voltage will be stepped up from 34.5 kV to 230 kV. Power will be transmitted from the southern substation via a new overhead 230-kV transmission line to the northern substation. From the northern substation, the Project will either directly connect to the regional grid via UEC transmission lines that will be constructed, owned, and operated by UEC, or the Applicant will construct a new 230-kV transmission line to the proposed BPA Stanfield Substation.

7.1.1 Collector Lines

A step-up transformer is required at each turbine to increase the generator output voltage to equal the collector system voltage (see Section 2.5). Electrical connections will be made at the switchgear inside the turbine tower before connecting tothe transformer, then from the transformer to the collector lines. The 34.5-kV collector lines will consist of three wires, or phases; each cable will be an insulated, stranded metal conductor in a size range of 1/0 – 4/0 American wire gauge, nearly 3 inches in diameter.

The 34.5-kV collector lines will typically run in trenches no less than 3 feet deep in tilled ground installed below grade, with junction splice boxes positioned intermittently along the lines for maintenance access.

It is possible that some of the collector lines will need to be installed on above-ground overhead structures in situations where a buried cable would be infeasible, such as for long "home run" stretches, and at stream or canyon crossings. In such instances, overhead collector lines will be supported by a wooden structure. Each support pole will be buried up to approximately 12 feet in the ground, and will extend to a height of up to approximately 100 feet above ground, depending on the terrain. The structures will be spaced approximately 150 to 300 feet apart, depending on specific site conditions. The total length of underground collector lines will be approximately 59 to 90 miles for turbine Options 1 and 2, respectively; overhead collector lines will total an estimated 15.6 miles for Option 1 and 9.1 miles for Option 2.

For the purposes of the ASC, the Applicant assumes a temporary impact corridor approximately 35 feet wide for the buried and overhead collector lines. There will be permanent impacts only in the locations of the support poles for the overhead collector lines. Aside from the pole footprints, there will be no permanent impacts associated with the collector line corridor for aboveground segments. Temporary impacts from collector line construction will be restored and revegetated following construction. Exhibit C presents the temporary and permanent impacts of the collector lines for each turbine option.

7.1.2 Transmission Lines

A single circuit 230-kV transmission line supported by H-frame or monopole structures (or other form as needed for specialized locations) will run approximately 6.8 miles between the two Project substations (Figures C-4 and C-5). The 230-kV Project substation connector line will be designed to maintain a minimum conductor-to-ground clearance of 25 feet (minimum 35 feet over national highways; varies with location per safety codes) and the structures will be typically 100 to 140 feet tall and spaced approximately 600 feet apart on average depending on the terrain. The 230-kV transmission line will be designed following Avian Power Line Interaction Committee (APLIC; 2006) recommendations to prevent electrocution of birds. APLIC-recommended measures are intended to protect raptors, cranes, and other large birds from accidental electrocution and are sufficient to protect even the largest birds that may try to roost on the Project 230-kV transmission line. The engineering options for the 230-kV transmission line structures are discussed in detail in Exhibit AA, including example drawings. Based on pre-submittal design work and consultation with the Oregon Department of Fish and Wildlife, the transmission line route between substations was modified to avoid potential impacts to Category 1 Washington ground squirrel habitat.

In addition to the Project substation connector, the Project will require construction of a transmission line that ties into the regional electric grid and follows one of the two routes described in Section 1.3 (see Figures C-4 and C-5 in Exhibit C). Under the current primary option being considered, the UEC Cottonwood route, the Project will tie into the regional electric grid via a transmission line emanating from the proposed northern Project substation and extending approximately 17.2 miles to the existing UEC Butter Creek Substation, from which an existing 115-kV UEC transmission line, to be upgraded to incorporate a 230-kV line, will carry power generated by the Project approximately another 7.7 miles north to the UEC Cottonwood Substation. The upgrade will consist of replacing the existing support poles with new structures that can support restringing the existing 115-kV transmission line and adding a 230-kV transmission line. The total length of the Cottonwood route, including both the new and upgraded segments, will be approximately 24.9 miles. After the Cottonwood Substation, power from the Project will be transmitted over an existing 230-kV line north to the BPA McNary Substation. The UEC lines will be constructed by UEC and may be permitted locally through Umatilla County; however, as described earlier, they are conservatively included in this Preliminary ASC to analyze the maximum potential Project impacts. Once a final decision is made by UEC regarding the permitting process, the Applicant will update the Final ASC accordingly.

Alternatively, if the BPA Stanfield route is ultimately selected by the Applicant, a new overhead 230-kV transmission line will extend approximately 4.1 miles from the proposed northern Project substation to the proposed BPA Stanfield Substation. The route will be designed as described above to follow APLIC recommendations, and engineering options for the structures are the same as noted above. The Stanfield route leads north following County Road 1350 from the northern Project substation, then turns northwest parallel to an existing BPA transmission line. Approximately 1.5 miles upriver from the community of Nolin, the transmission line will span the Umatilla River and continue in parallel with the existing transmission line to the Stanfield Substation. This route is 4.1 miles total in length, of which 2.8 miles parallel the existing BPA line. Details of the infrastructure needed at the Stanfield Substation will be negotiated with BPA and may include a transformer, which would be installed within the BPA fence line and would not be subject to this site certificate.

7.1.3 Project Substations

The Project will include two substations, in total occupying approximately 16.4 acres. The Project substations will be placed strategically within the Site Boundary, to aggregate the power being transmitted by the 34.5-kV collector lines. The proposed substation locations are shown on Figures C-4 and C-5 in Exhibit C.

Each substation will be enclosed by a security wire mesh fence to prohibit unauthorized access. Substation equipment will include transformers, transmission line termination structures, a bus bar, circuit breakers and fuses, control systems, meters, diesel generator, and other equipment. The area within the fence line will be graded approximately flat, with a bed of crushed rock applied for a durable surface.

7.2 Meteorological Towers

The Project includes up to three permanent met towers spaced throughout the Project. The met towers are required to measure the wind speeds around the Project separate from the wind turbines for verification of the wind turbines' performance. The met towers will be either a freestanding, non-guyed design or guyed wire towers, depending on landowner input, with a maximum height of up to approximately 541 feet to match the hub height of the selected turbine. The foundation of each permanent met tower will be a square concrete pad approximately 24 feet by 24 feet (Figure B-5). In addition, an access road will be constructed to reach each met tower. Exhibit C presents the temporary and permanent impacts of the met towers and access roads associated with each turbine option. FAA lighting may be installed on the met towers, depending on the overall lighting scheme for the Project, to be determined prior to operation and in consultation with FAA.

7.3 Communication and SCADA System

A communication system consisting of fiber optic and copper communication lines will connect the turbines and Project substations to the O&M Building. These communication lines will run with the collector lines, either buried or overhead, depending on site-specific conditions. Where buried, the communication lines are placed above the collector lines in the trench, and where overhead, run alongside the collector lines. This communication system allows each turbine and Substation to be monitored by a SCADA system, installed in the O&M Building. This system monitors each turbine and the met tower data for variables such as meteorological conditions, critical operating parameters, and power output. The turbines are controlled and monitored via the SCADA system, and can be controlled remotely. SCADA software is tuned specifically to the needs of each wind project by the turbine manufacturer or a third-party SCADA vendor.

7.4 Operations and Maintenance Building

The Project includes one O&M Building. The O&M Building will be a one- or two-story structure of approximately 6,000 square feet. The fenced area around the O&M Building will occupy 7.6 acres. Immediately adjacent to the building and within this acreage will be a parking lot for employees, visitors, and Project equipment. The O&M Building will consist of a warehouse, maintenance bay, control room, office, break room, kitchen, bathroom with shower, utility room, server room, and storage room. Electricity and telephone service will be provided to the O&M Building from local providers using overhead or underground lines. A backup UPS system will be stored in the control room, which includes up to 10 lead-acid batteries (see Section 4.0). Water will be provided by an on-site well. Water use is estimated at 50 to 100 gallons per day per worker, for a total of less than 5,000 gallons per day. The kitchen, toilets, and shower will drain into an on-site septic system, also located within the fenced area, to be permitted for the building prior to construction through Umatilla County.

The O&M Building will be located adjacent to the northern substation (see Figures C-4 and C-5).

7.5 Access Roads

Turbine components will be delivered to the Project site via truck. The primary transportation route will follow I-84, then turn south on US Highway 395, and then west on County Road 1350 (Coombs Canyon Road) to reach local roads within the Site Boundary (see Exhibit U for the transportation analysis). Multiple county roads within the Site Boundary will be used to access new and existing roads within the Project area (see Exhibit U). Some components may be transported first by rail to Stanfield, Hermiston, or similar regional rail center/distribution center, then by truck to the site following the transportation route described above.

Access to the turbine sites, construction yards, substations, and O&M Building will be via a network of existing or new site access roads to be constructed or improved by the Applicant as part of the

Project's construction within the Site Boundary. To minimize impacts to agricultural operations, grazing lands, and wildlife habitat, existing private roads and farm access tracks will be utilized to the greatest extent practicable. During construction, some roads may need temporary widening and an additional shoulder for turnaround areas for larger vehicles. These areas will be reclaimed upon completion of construction. All existing public roads used to access the Project will be left in "as good or better" condition than that which existed prior to the start of construction.

All newly constructed and improved site access roads will be graded and graveled to meet load requirements for heavy construction equipment, as necessary. Most site access roads will be initially constructed to be wider than needed for operations, to accommodate the large equipment needed for construction. Following turbine construction, the site access roads will be narrowed for use during O&M. The additional disturbed width required during construction will be restored following the completion of construction by removing gravel surfacing, restoring appropriate contours with erosion and stormwater control best management practices, decompacting as needed, and revegetating the area appropriately. For purposes of impact assessment, a temporary impact corridor 82 feet in width and a permanent impact corridor of 16 feet in width are used; these corridors will encompass the site access roads, as well as most crane paths, cut and fill slopes, and any necessary drainage or erosion control features. Where crane paths do not follow roads, they may temporarily disturb a 75-foot-wide corridor.

The 230-kV transmission lines will be constructed and maintained using only large trucks rather than heavy construction cranes. Generally, construction is expected to take place during the dry time of year when the ground surface is hard enough to support those vehicles. However, to conservatively estimate maximum potential impacts, a temporary disturbance corridor along the transmission line route is assumed to be up to 108 feet wide along the length of the transmission line, which includes any potential temporary access improvements. During operations, maintenance trucks will be driven off-road over open land to reach the transmission line.

The total mileage of the site access roads will vary depending on the turbine option chosen for the Project. The Option 1 layout will require approximately 38 miles of site access roads, of which approximately 29 miles will be new permanent access roads, and 9 miles will be temporary improvements to existing roads. The Option 2 layout will require approximately 63 miles of site access roads, of which about 44 miles will be new permanent access roads and 19 miles will be temporary improvements to existing roads. Exhibit C presents the areas of temporary and permanent disturbance associated with the site access roads for each turbine option.

7.6 Construction Yards

During construction, the Applicant will establish one central temporary staging area within the Project Site Boundary, to facilitate the delivery and assembly of material and equipment. The construction laydown yard will be located off County Road 1350, adjacent to the northern substation location. The staging area will contain field construction offices; will be used to store construction equipment when not in use; will be used for storage of construction supplies and materials; may contain temporary concrete batch plants; and may be used for assembly of some

Project components. Typically, turbine and tower components will be delivered directly to each turbine site rather than being received and stored at the construction yards. The staging area will be a graded area, surfaced in gravel, of approximately 30 acres and will be signed as private, no trespassing with on-site security staff. The temporary staging area may also be fenced along the perimeter. The staging area will be restored to pre-construction conditions unless an agreement with the landowner leads to some or all the area being retained after construction. Restoration of a construction yard will typically involve removal of gravel surfacing; regrading to pre-construction contours; restoration of topsoil as needed; soil decompaction if necessary; and seeding and/or planting to restore agricultural or habitat lands as appropriate. The Applicant will coordinate with the landowner for final restoration requirements in agricultural areas.

In addition to the central temporary staging area, 8 to 11 smaller temporary staging areas (less than 1,000 square feet each) will be distributed throughout the Project site to support construction. All together, these areas will entail less than 0.5-acre total of temporary disturbance. Construction staging at each turbine tower site was described above in Section 2.4, Turbine Foundations.

The Applicant anticipates that the construction contractor will utilize an on-site temporary concrete batch plant instead of sourcing concrete from existing suppliers. Therefore, for the purposes of the ASC, the Applicant assumes that one or two temporary concrete batch plants will be utilized during construction of the Project. The concrete batch plants will be located within the central temporary staging area, and therefore do not have associated independent impact areas. The permits for the use of temporary batch plants will be secured by the construction contractor through Umatilla County. In addition, each concrete batch plant requires a state air quality permit, which will also be held by the construction contractor or a qualified third-party contractor. These third-party permits are described in more detail in Exhibit E. The Applicant may at the time of construction choose to instead purchase concrete directly from a licensed third-party contractor and have it delivered directly to the site as required, thereby removing the need for on-site batch plants.

If on-site batch plants are used, the qualified third-party contractor will be responsible for identifying appropriate sources for rock and water and obtaining any needed permits, with support from the Applicant as-needed. The contractor will similarly be responsible for obtaining rock/gravel for road construction. Potential third-party permits are described in more detail in Exhibit E.

8.0 Approximate Dimensions of Major Structures – OAR 345-021-0010(1)(b)(C)

(C) The approximate dimensions of major Project structures and visible features.

8.1 Wind Turbine Dimensions

Table B-1 shows the typical configuration for a wind turbine, illustrating the range of dimensions for the total height, tower, rotor blade, and rotor diameter under consideration for the Project.

8.2 Operations and Maintenance Building Dimensions

As stated above, the Applicant plans to construct an O&M Building for the Project. The O&M Building will be located on approximately 7.6 acres and will consist of a building totaling approximately 6,000 square feet, and a warehouse, septic field, parking, access road, and water well. Temporary impacts during construction may occur along an area extending up to 50 feet outside the fence line.

8.3 Project Substation Dimensions

As stated above, two on-site Project substations are proposed to be installed. The northern Project substation will occupy an approximately 10.5-acre site, and the southern Project substation will encompass approximately 5.9 acres.

8.4 Transmission Line Dimensions

The single-circuit 230-kV transmission line between the southern and northern Project substations will be approximately 6.8 miles. As described earlier, the Applicant is considering two possible routes for an overhead single-circuit 230-kV transmission line to connect with the regional grid. The primary option, the UEC Cottonwood route, will be approximately 24.9 miles in length, of which approximately 17.2 miles will be a new 230-kV transmission line and approximately 7.7 miles an upgrade of an existing 115-kV UEC transmission line. The alternative BPA Stanfield route will be approximately 4.1 miles in length, of which approximately 2.8 miles will parallel an existing 500-kV transmission line.

The Project 230-kV overhead transmission lines will be supported by wooden H-frame or steel monopole structures approximately 100 to 140 feet tall and spaced approximately 600 feet apart on average, depending on the terrain.

9.0 Corridor Selection Assessment – OAR 345-021-0010(1)(b)(D)

(D) If the proposed energy Project is a pipeline or a transmission line or has, as a related or supporting Project, a transmission line or pipeline that, by itself, is an energy Project under the definition in ORS 469.300, a corridor selection assessment explaining how the applicant selected the corridors for analysis in the application. In the assessment, the applicant must evaluate the corridor adjustments the Department has described in the project order, if any. The applicant may select any corridor for analysis in the application and may select more than one corridor. However, if the applicant selects a new corridor, then the applicant must explain why the applicant did not present the new corridor for comment at an informational meeting under OAR 345-015-0130. In the assessment, the applicant must discuss the reasons for selecting the corridors, based upon evaluation of the following factors:

(i) Least disturbance to streams, rivers and wetlands during construction;

(ii) Least percentage of the total length of the pipeline or transmission line that would be located within areas of Habitat Category 1, as described by the Oregon Department of Fish and Wildlife;

(iii) Greatest percentage of the total length of the pipeline or transmission line that would be located within or adjacent to public roads and existing pipeline or transmission line rights-of-way;

(iv) Least percentage of the total length of the pipeline or transmission line that would be located within lands that require zone changes, variances or exceptions;

(v) Least percentage of the total length of the pipeline or transmission line that would be located in a protected area as described in OAR 345-022-0040;

(vi) Least disturbance to areas where historical, cultural or archaeological resources are likely to exist;

(vii) Greatest percentage of the total length of the pipeline or transmission line that would be located to avoid seismic, geological and soils hazards;

(viii) Least percentage of the total length of the pipeline or transmission line that would be located within lands zoned for exclusive farm use;

The proposed Project is not a pipeline or a transmission line as defined by Oregon Revised Statute (ORS) 469.300. The Project includes neither a pipeline nor transmission line that, by themselves, would be considered an energy Project under ORS 469.300(11)(a)(C).

The Project will require, as a related or supporting facility, a new overhead 230-kV transmission line. As described earlier, the proposed transmission line will follow one of two possible routes to connect with the regional grid, leading from the northern Project substation to either the existing UEC Cottonwood Substation or proposed BPA Stanfield Substation. The UEC Cottonwood route will be approximately 24.9 miles in total length, while the BPA Stanfield route will be approximately 4.1 miles in length. This transmission line does not fall within the definition of "energy Project" under ORS 469.300(11)(a)(C) because, while the proposed transmission line may be more than 10 miles in length and have a capacity of 230,000 volts, it is proposed in only one county and not sited within any city.

10.0 Transmission Line Length, Right-of-Way, and Power – OAR 345-021-0010(1)(b)(E)

(E) If the proposed energy Project is a pipeline or transmission line or has, as a related or supporting Project, a transmission line or pipeline of any size:

10.1 Length of Line

(i) The length of the pipeline or transmission line.

The proposed 230-kV transmission line route will be up to approximately 24.9 miles in length for the UEC Cottonwood route, or approximately 4.1 miles for the alternative BPA Stanfield route.

10.2 Right-of-Way

(ii) The proposed right-of-way width of the pipeline or transmission line, including to what extent new right-of-way will be required or existing right-of-way will be widened.

The 230-kV transmission lines will require the acquisition of an approximately 100-foot-wide right-of-way from private landowners, except in locations already under lease for the Project by the Applicant, or for the UEC Cottonwood route, where UEC already controls sufficient right-of-way width. The extent of right-of-way acquisition and/or widening required will be determined during final design by UEC or the Applicant, depending on the route selected and ultimate permitting of the transmission line (see Section 1.3, Grid Interconnection). Both routes parallel existing roads and transmission lines to the extent practicable. The necessary legal documents granting the rights-of-way will be finalized and recorded with Umatilla County prior to beginning construction of the 230-kV transmission line(s).

10.3 Public Right-of-Way

(iii) If the proposed transmission line or pipeline corridor follows or includes public right-of-way, a description of where the transmission line or pipeline would be located within the public right-of-way, to the extent known. If the applicant proposes to locate all or part of a transmission line or pipeline adjacent to but not within the public right-of-way, describe the reasons for locating the transmission line or pipeline outside the public right-of-way. The applicant must include a set of clear and objective criteria and a description of the type of

evidence that would support locating the transmission line or pipeline outside the public right-of-way, based on those criteria.

Public right-of-way will be used to the extent it: a) is available for the addition of a 230-kV transmission line, b) allows for the minimum separation distance required for safety between transmission lines, c) provides for an efficient route to connect to the regional grid, and d) supports compliance with local land use regulations (see Exhibit K). As noted above, both the UEC Cottonwood route and BPA Stanfield route parallel existing roads and transmission lines to the extent practicable.

10.4 Pipeline Capacity

(iv) For pipelines, the operating pressure and delivery capacity in thousand cubic feet per day and the diameter and location, above or below ground, of each pipeline.

The Project does not contain a pipeline; therefore, this requirement is not applicable.

10.5 Transmission Line Power

(v) For transmission lines, the rated voltage, load carrying capacity, and type of current and a description of transmission line structures and their dimensions.

The Applicant proposes to construct two on-site Project substations to increase the rated voltage from the 34.5-kV collection system to 230 kV, for transmission along new and upgraded UEC transmission lines to the UEC Cottonwood Substation, or through a new overhead transmission line that will connect the Project to the proposed BPA Stanfield Substation. The type of current will be alternating current. The 230-kV overhead transmission line will be supported by H-frame or monopole structures. The structures will be approximately 100 to 140 feet above grade and spaced an average of approximately 600 feet apart.

11.0 Construction Schedule – OAR 345-021-0010(1)(b)(F)

(F) A construction schedule including the date by which the applicant proposes to begin construction and the date by which the applicant proposes to complete construction. Construction is defined in OAR 345-001-0010. The applicant must describe in this exhibit all work on the site that the applicant intends to begin before the Council issues a site certificate. The applicant must include an estimate of the cost of that work. For the purpose of this exhibit, "work on the site" means any work within a site or corridor, other than surveying, exploration or other activities to define or characterize the site or corridor, that the applicant anticipates or has performed as of the time of submitting the application.

Facility construction is targeted to commence in Spring 2021, pending issuance of a Site Certificate from EFSC. The completion of commissioning and start of commercial operation is targeted for the end of 2022. However, given that construction could conceivably be delayed by weather or other unforeseen circumstances such as market changes, the Applicant would like the flexibility to build the Facility in one or more phases, and requests a deadline for construction completion of 3 years later than the deadline for beginning construction, or 6 years from issuance of the site certificate. Additional engineering and geotechnical investigations may occur prior to issuance of the site certificate. As defined in ORS 469.300(6), surveying and exploration activities (such as geotechnical investigations) are excluded from the definition of construction work. No other construction work is anticipated to begin prior to issuance of the site certificate.

Figures

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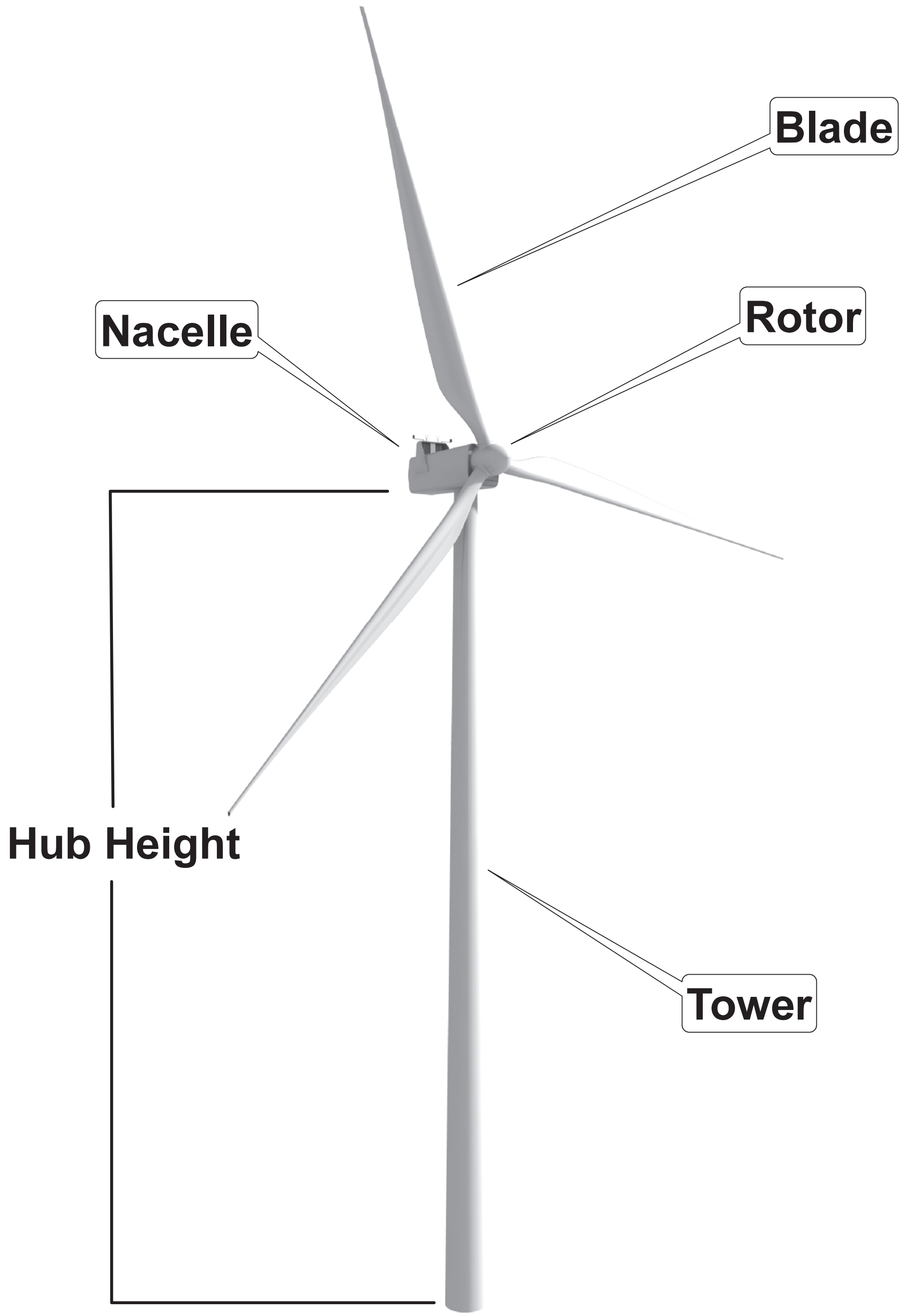

Nolin Hills
Wind Power Project

Figure B-1
Typical Wind Turbine

UMATILLA COUNTY, OREGON

TETRA TECH

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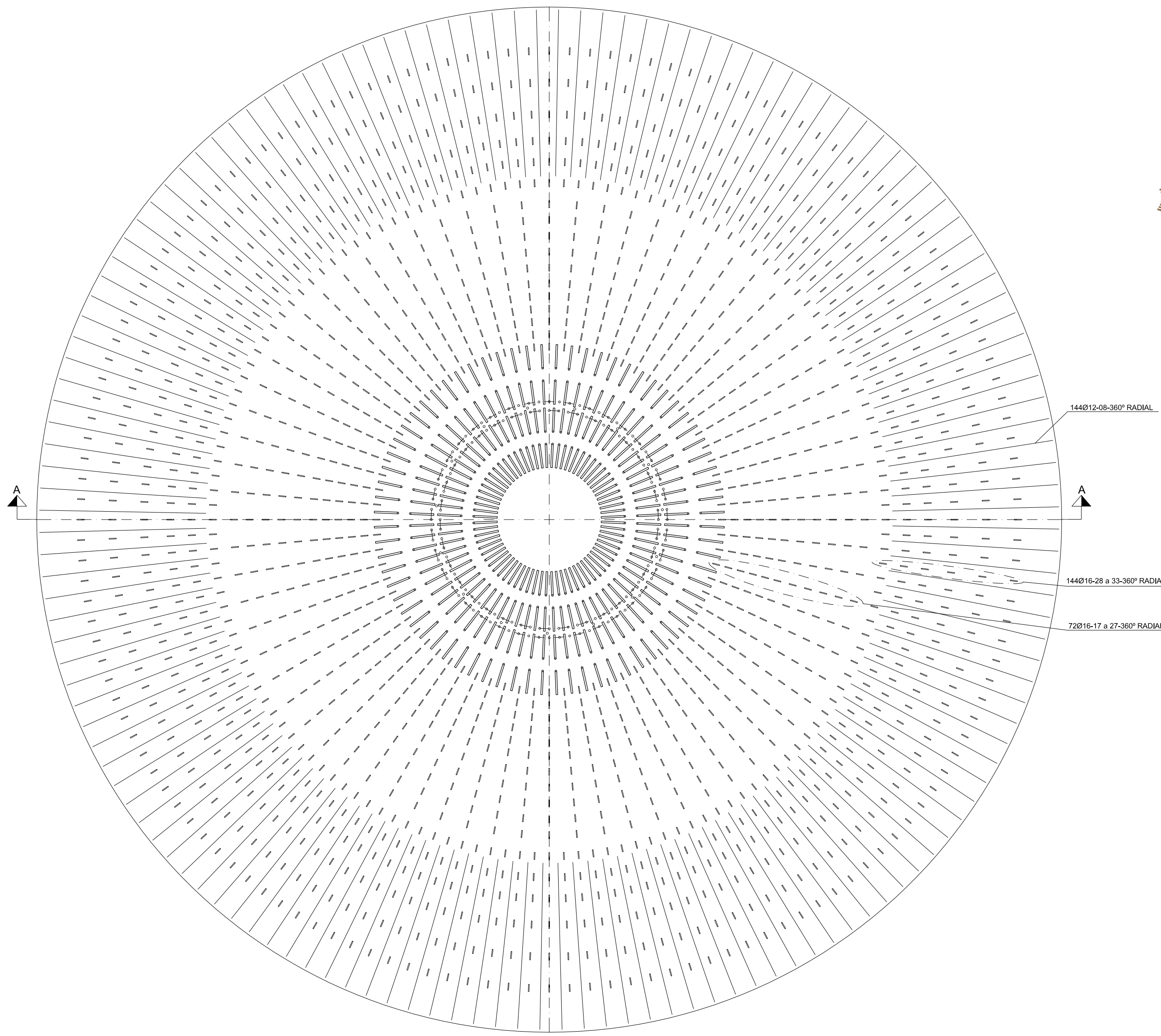
Nolin Hills Wind Power Project

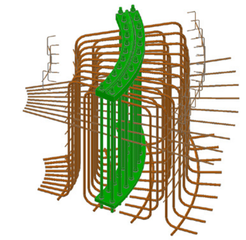
Figure B-2

Typical Spread-Footing Foundation

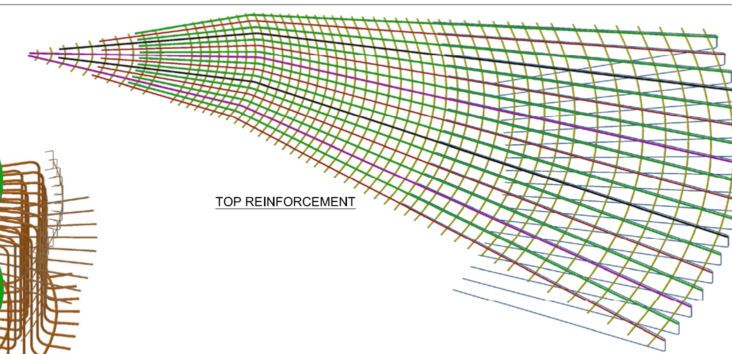
UMATILLA COUNTY, OREGON



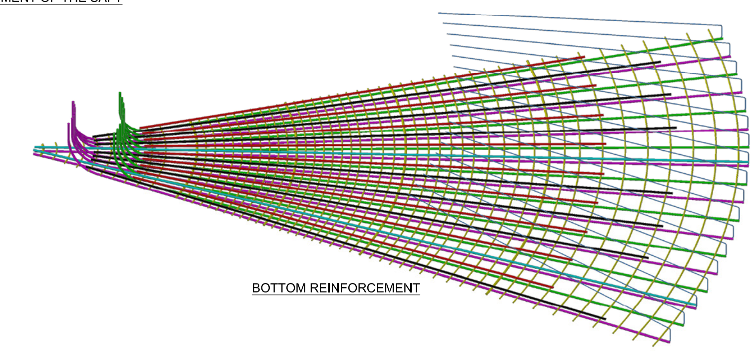
PUNCHING SHEAR REINFORCEMENT DETAIL, PLANT
1:50



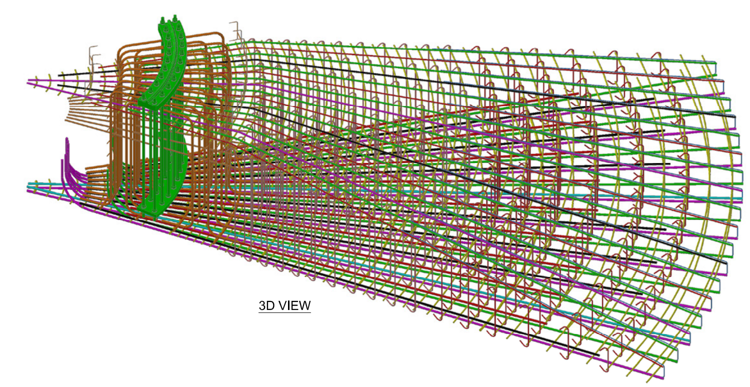
REINFORCEMENT OF THE SAFT



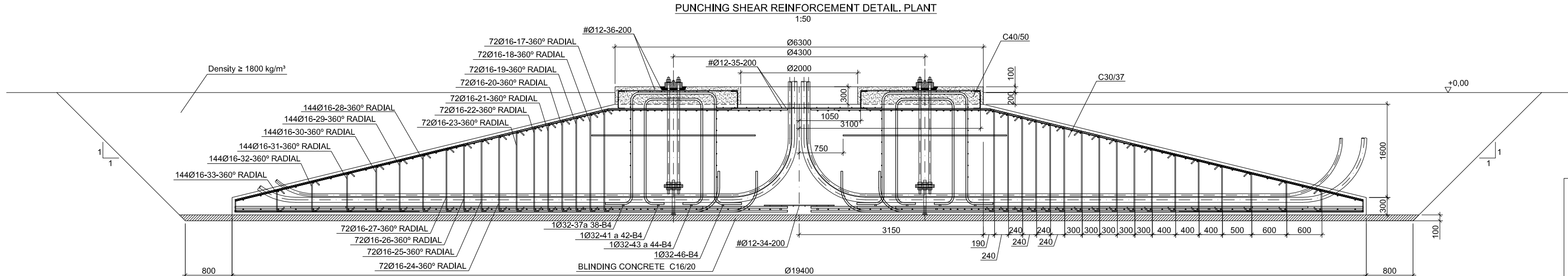
TOP REINFORCEMENT



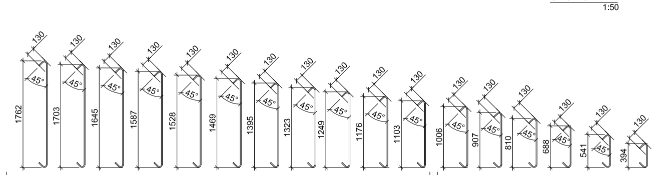
BOTTOM REINFORCEMENT



3D VIEW

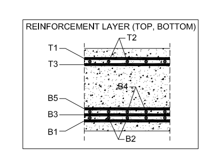


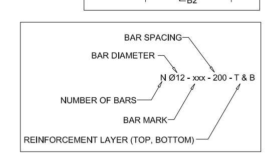
SECTION A-A
1:50



NOT VALID FOR CONSTRUCTION

NOTE:
QUANTITY AND TYPE COMPONENTS MAY CHANGE DEPENDING ON WIND TURBINE MODEL





ANCHORAGE AND LAP LENGTHS ACCORDING TO EC-2 (UNLESS SPECIFIED AT DRAWING)		Reinforcement in tension								Reinforcement in compression	Concrete Class	Condition
BAR DIAMETER, D [mm] STEEL B 500 A		8	10	12	16	20	25	32	40	D		
Anchorage length, l_{bd} [mm] Straight bars only		210	280	360	530	690	900	1150	1560	36D	C30/37	GOOD
		290	400	520	750	990	1280	1640	2230	51D	C30/37	POOR
Lap length, l_0 [mm]	100% lapped in one location (alfa6=1.5)	310	420	540	790	1040	1350	1720	2340	54D	C30/37	GOOD
		430	600	780	1130	1480	1920	2460	3340	77D	C30/37	POOR

MATERIALS ACC. TO EN 206-1

REINFORCEMENT: STEEL S500 (fyk=500 MPa)
CONCRETE:
LEAN CONCRETE:
C16/20 (fck = 16 MPa cylinder test)
MAXIMUN SIZE OF COARSE AGGREGATE: 20mm
CONSISTENCE: 50-90mm
FOUNDATION:
SLAB: C30/37 (fck = 30MPa cylinder test)
PEDESTAL: C40/50 (fck = 40MPa cylinder test)
MAXIMUN SIZE OF COARSE AGGREGATE:15mm
CONSISTENCE: 100-150mm
EXPOSURE CLASS: XC2
COVERING: 50mm

FILLING SOILS WITH APPROPIATE MATERIAL FROM EXCAVATION IN LAYER THICHNESS OF 300mm (DENSITY ≥ 1800kg/m³)

NOTES:

1- GROUND WATER LEVEL BELOW FOUNDATION BASE..
2- PLACE SPACERS BELOW BOTTOM REINFORCEMENT
3- WELDING IS FORBIDDEN
4- SOIL BEARING RESISTANCE 300 kPa (SLS)

FOUNDATION QUANTITIES:

STEEL S50 (aprox.) = 38.463 kg
CONCRETE SLAB C30/37 = 314.5 m³
CONCRETE PEDESTAL C40/50 = 8.4 m³

REV /REV	FECHA /DATE	REALIZADO /CREATED	MODIFICACION / MODIFICATION
C	23-05-16	KLF	AÑADIR NOTA DE TOLERANCIA / TOLERANCE REMARK ADDED
B	04-05-16	KLF	ACTUALIZAR CTO JAULA CIMENTACION / FOUNDATION CAGE ASSEMBLY UPDATED
A	13-04-16	KLF	CREACION DE PLANO / DRAWING CREATION

MATERIAL / MATERIAL — TOLERANCIAS GENERALES / GENERAL TOLERANCES — PESO / WEIGHT (kg)

	DIBUJADO DRAWN	COMPROBADO REVISED	APROBADO APPROVED
NOMBRE NAME	K.L.F.		MNP
FECHA DATE	23-05-2016	23-05-2016	23-05-2016

ESCALA / SCALE: 1/50
DENOMINACIÓN: EJEMPLO CIMENTACION AW3000 T87.5 V2
NAME: FOUNDATION EXAMPLE AW3000 T87.5 V2
PLANO Nº / DRAWING Nº: DG200624
REVISIÓN / REVIEW: C
HOJA Nº / SHEET Nº: 1-4
FORMATO / FORMAT: A1

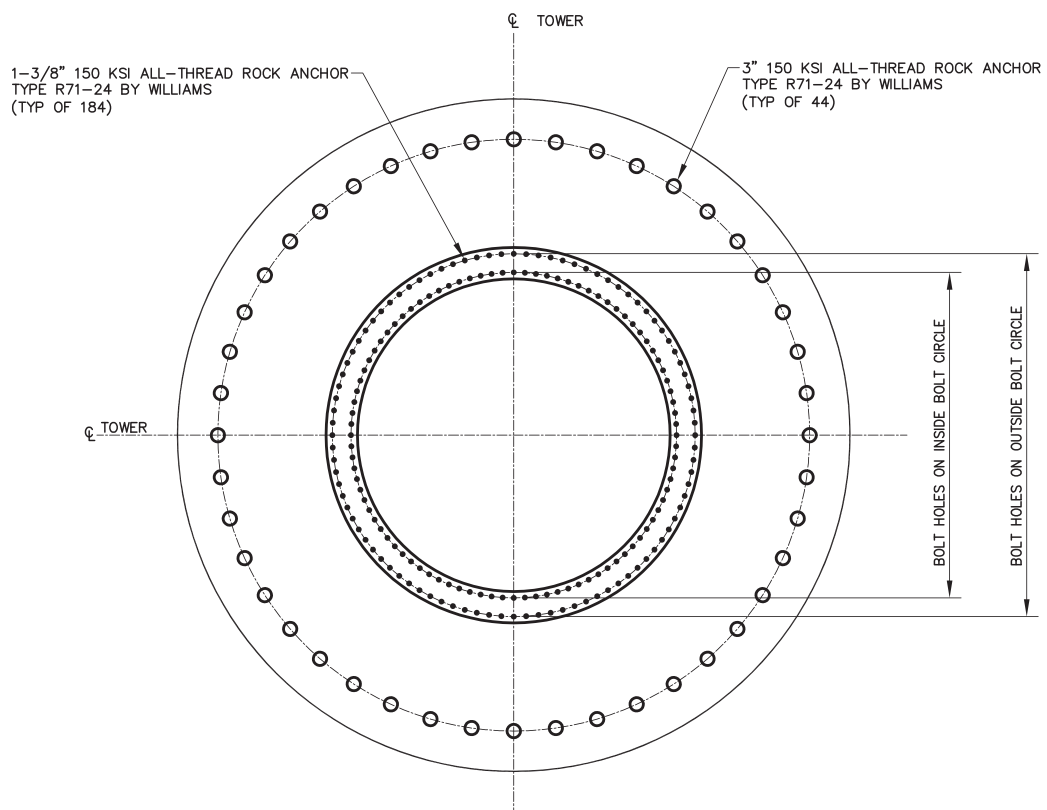
TETRA TECH

Nolin Hills Wind Power Project

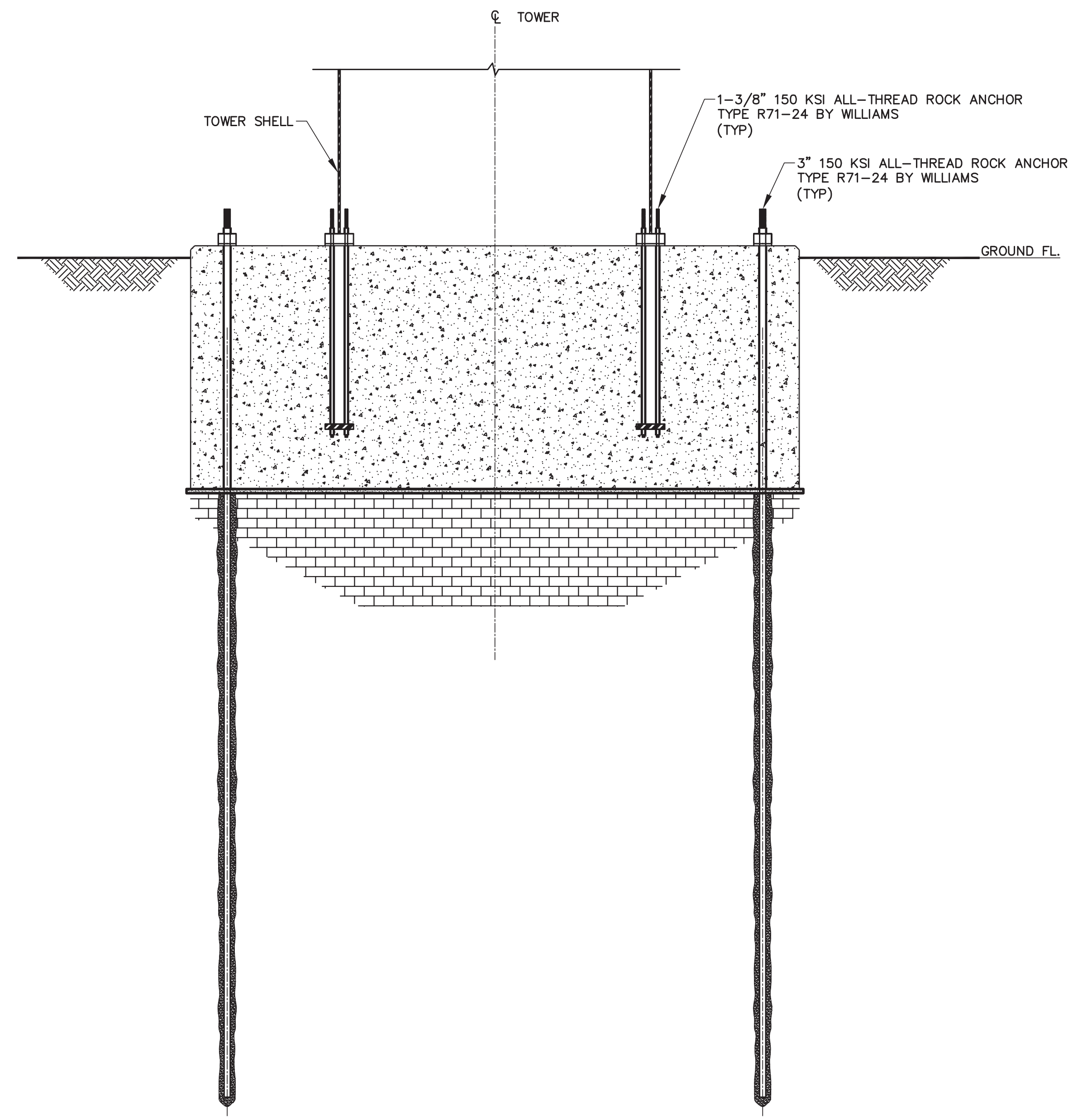
Figure B-3

Typical Bedrock Foundation

UMATILLA COUNTY, OREGON

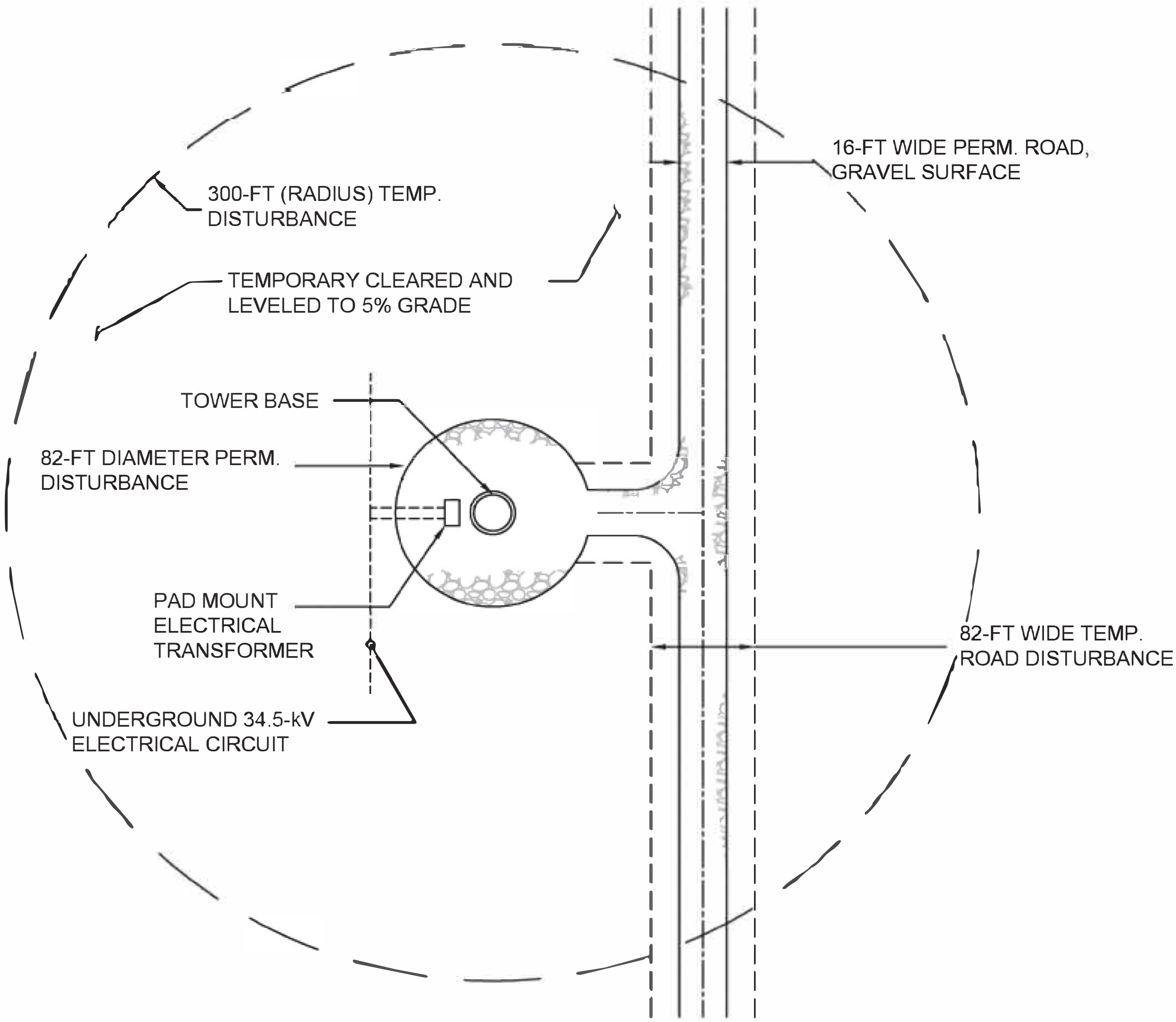


FOUNDATION PLAN



FOUNDATION SECTION

TETRA TECH



Nolin Hills
Wind Power Project

Figure B-4
Typical Turbine Site
Plan View

UMATILLA COUNTY, OREGON

TETRA TECH

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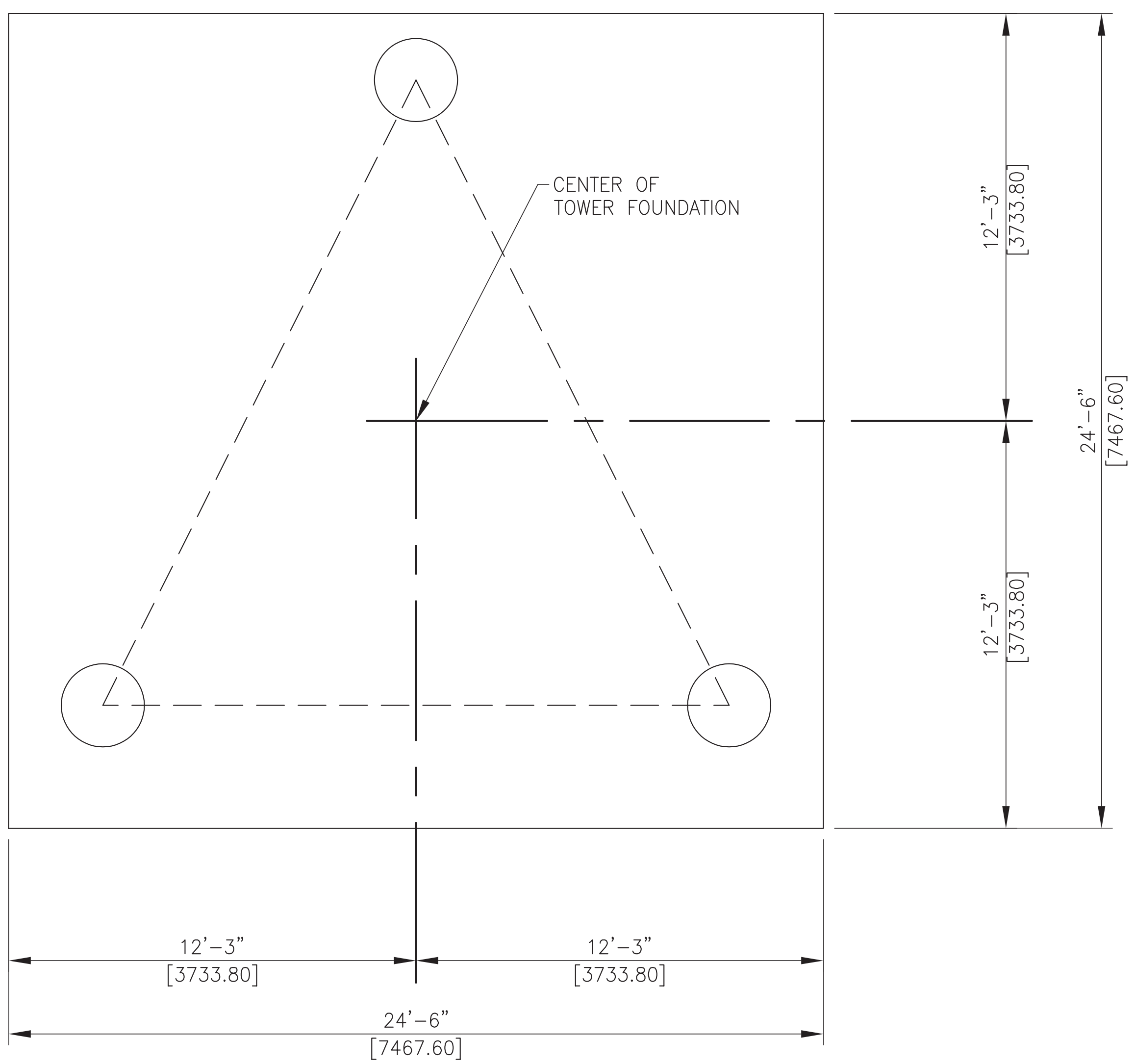
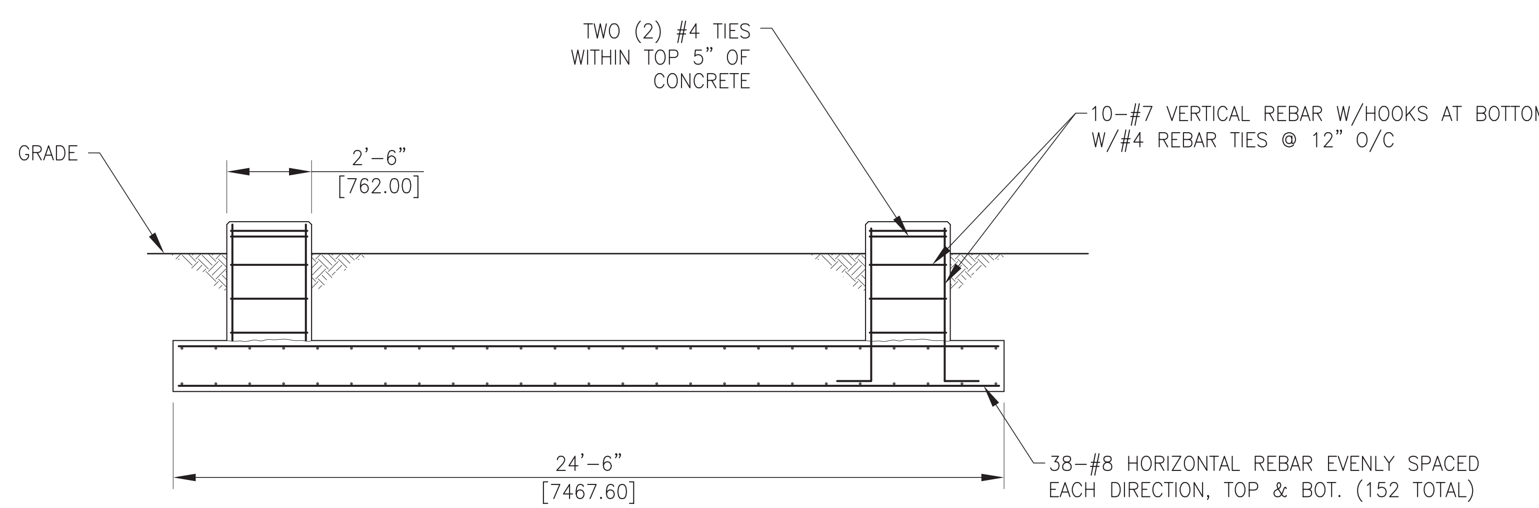
220 FT MODEL S3TL SERIES HD SELF SUPPORTING TOWER AT
90 mph WIND + 0.5in ICE PER ANSI/TIA/EIA-222-F-1996
ANTENNA LOADING



PLAN VIEW



ELEVATION VIEW

(35.53 Cu. YDS)

Nolin Hills
Wind Power Project

Figure B-5

Typical Met Tower Foundation

UMATILLA COUNTY, OREGON

NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000psi, IN ACCORDANCE WITHY ACI 318-05.
2. RABAR TO CONFIRM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINUMUM OF 3" CORNER COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMPHERED $\frac{3}{4}$"

TETRA TECH