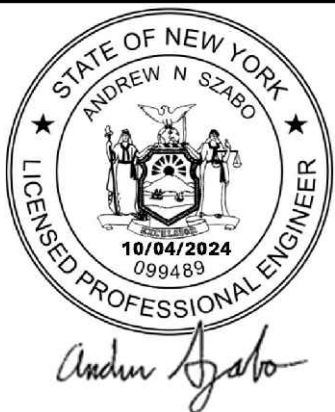




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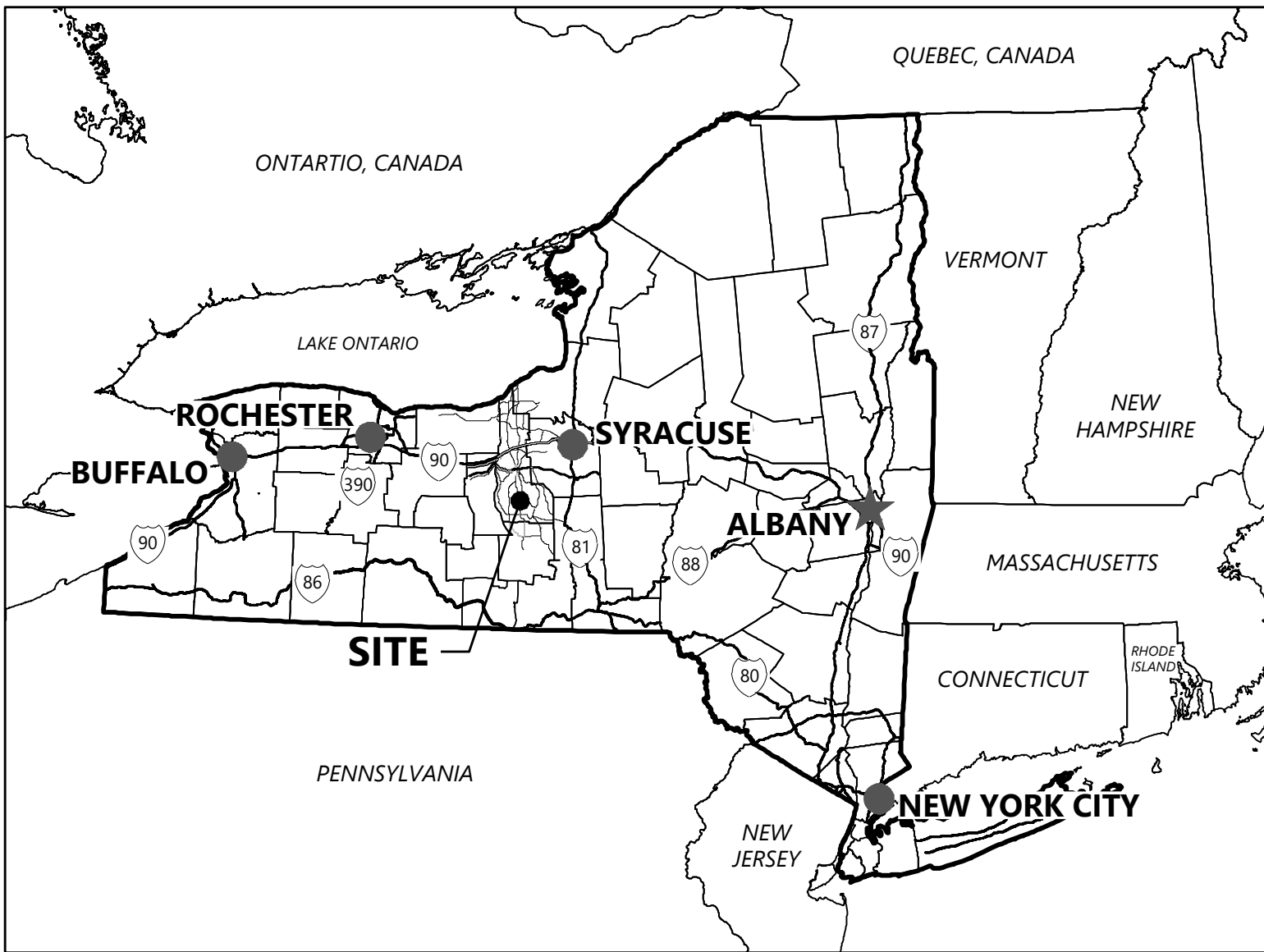
REVISIONS:					
#	DATE	COMMENT	BY	CHK	APR
A	03/15/2024	ISSUED FOR 30% DESIGN REVIEW	MR	SK	DS
B	10/4/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

Agricola Wind Project

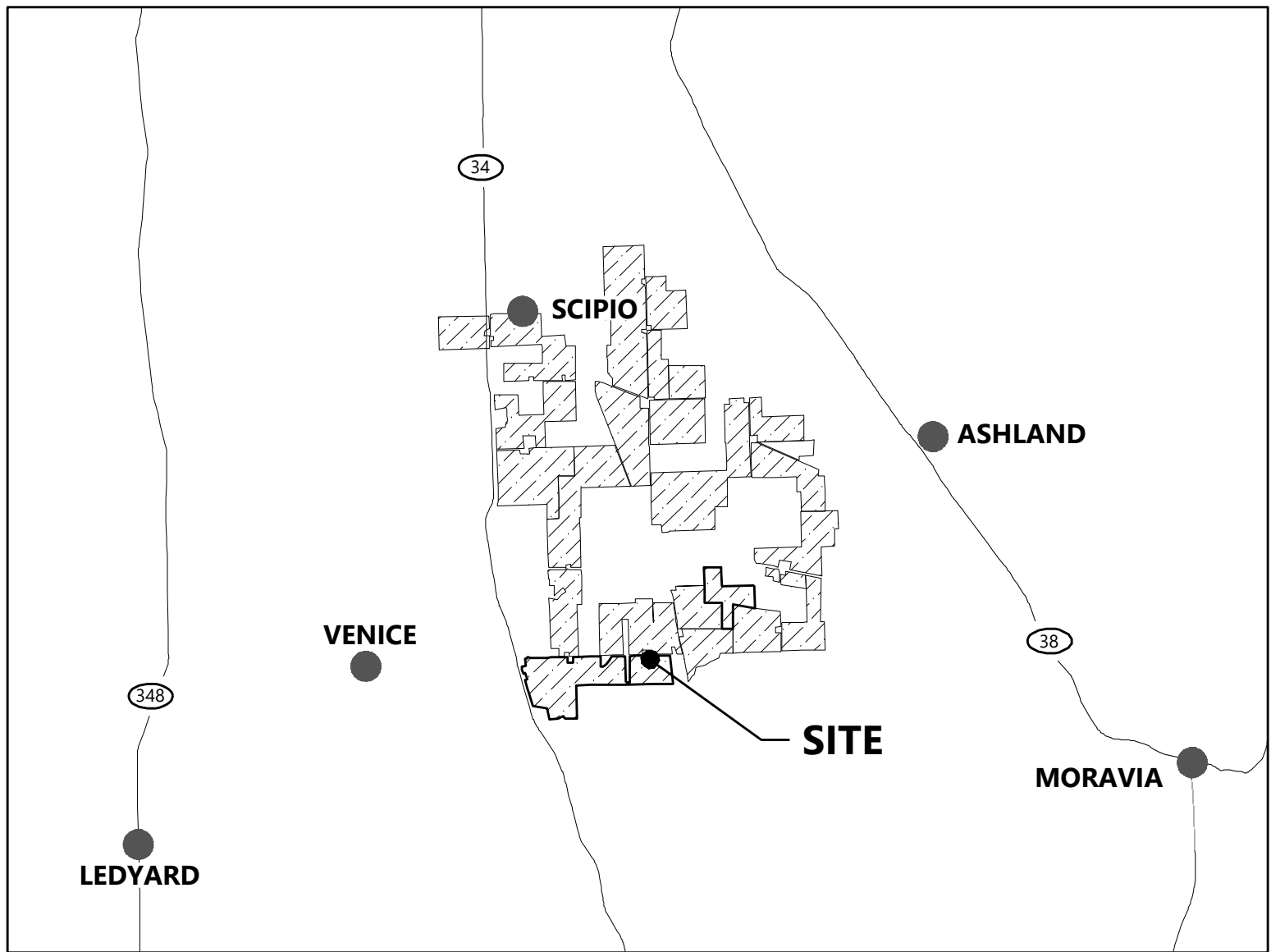
Cayuga County, New York

Electrical Construction Plans

REGIONAL MAP



VICINITY MAP



DATA SET INFORMATION			
Coordinate System	NSRS11.NY-CF		
BASE FILE	FILE NAME / NOTES	PROVIDER	DATE
AERIAL IMAGE	2023-12-13_Aerial	Westwood	12/13/2023
LAND CONTROL	Facility Site Parcel	Liberty	11/15/2023
BOUNDARY SURVEY	0042617V-SURV	Westwood	11/21/2023
TOPOGRAPHY	0042617V-DTM	Westwood	5/8/2023
TURBINE ARRAY	2024-8-1_Agricola Revised Wind Turbine Layout	Liberty	10/3/2023
UNDERGROUND COLLECTION	0042617E-WIRE	Westwood	11/30/2023
GEN-TIE	*	*	*
STREAMS/WETLANDS	2024-07-11_Wetland and Stream	EDR	9/15/2023
CULTURAL RESOURCES	*	*	*
BIOLOGICAL	*	*	*
FEMA INFO	*	*	*
TURBINE DELIVERY MANUAL	*	*	*
GEOTECHNICAL REPORT	AgricolaWind_PreliminaryGeotechReport_2024-07-17	Westwood	07/17/2024

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Daniel Zvirzdin	EDR	Environmental Project Manager	dzvirzdin@edrdpc.com	

Agricola Wind Project

Cayuga County, New York

Cover Sheet

NOT FOR CONSTRUCTION

DATE: 10/4/2024

SHEET: E0000

REV:

B

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Electrical Sheet Index	
SHEET NUMBER	SHEET TITLE
E0000	Cover Sheet
E0001	Sheet Index
E0010	Electrical Notes
E0020	Symbology & Abbreviations
E1000	Overall MV Site Plan
E1300	MV Collection Single Line Diagrams
E1301	MV Collection Single Line Diagrams
E1302	MV Collection Single Line Diagrams
E1303	MV Collection Single Line Diagrams
E6000	Overall Communication Site Plan
E6200	Fiber Single Line Diagram
E6201	Fiber Single Line Diagram
E6400	Met Tower Wiring Diagram
E6401	Fiber Splice Box
E7000	Sectionalizer Cabinet
E7001	Medium Voltage Splice
E7000	Foundation Conduit Details
E7003	Foundation Grounding Detail
E7600	Trench Details
E7601	Bore Details
E7602	Bore Crossings

Reference Sheet Index	
SHEET NUMBER	SHEET TITLE
AGCL-610	Overhead Plan and Profile
AGCL-611	34.5 kV Riser Detail
AGCL-612	34.5 kV Riser Detail
AGCL-613	34.5 kV Riser Detail

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STATE OF NEW YORK

ANDREW N. SZABO

10/04/2024

099483

LICENSED PROFESSIONAL ENGINEER

Andrew Szabo

PREPARED FOR:

Agricola Wind LLC

REVISIONS:

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Agricola Wind Project

Cayuga County, New York

Sheet Index

NOT FOR CONSTRUCTION

DATE: 10/4/2024

REV: B

SHEET: E0001

SECTION 1 - GENERAL PROVISIONS - ELECTRICAL

- A. The work included under Division 16 shall consist of furnishing labor and materials necessary for the complete installation of power and wind systems shown on the drawings. All work shall be complete and left in operating condition at completion of Contract.
- B. Include minor items that are obviously and reasonably necessary to complete the installation and usually included in similar work. Such items include bolts, nuts, anchors, brackets, sleeves, and minor offsets in conduit, junction boxes, etc. because of unforeseen obstructions.
- C. Some equipment and materials provided under other divisions may require composite work crews because of trade jurisdiction. It is the Contractor's or Subcontractor's responsibility to review all Contract Documents to determine where these composite crews are required.
- D. All temporary and permanent permits and licenses required in connection with this Division's work shall be the responsibility of the Contractor bidding that work.
- E. Installation shall meet or exceed current applicable codes, ordinances and regulations in effect at the site. If a Contractor or Subcontractor observes that the Contract Documents are at variance with governing codes and regulations, he shall promptly notify the Engineer in writing, who will respond to such variances in writing. If the Contractor performs work knowing it is not compliant with applicable codes, and does not notify the Engineer, the Contractor shall assume full responsibility and bear all costs attributable to correcting the non-complying work.
- F. The reference to Codes and Standards shall not permit a lower grade of construction where Contract Documents call for workmanship and/or materials in excess of those references.
- G. Where the terms "provide" or "shall be" are used in this Division or on the drawings, they shall be taken to mean "The Contractor shall furnish and install".
- H. If equipment or materials other than those specified in the design of this project are proposed to be used on this project, the Contractor and supplier shall check it for dimensional differences, electrical requirements and any other potential variances. This comparison shall be made for manufacturers specified as well as those proposed prior to requesting approval. The Contractor shall be responsible for any extra costs incurred as a result of Substitutions, including those of other contractors, such as might be due to (but not limited to) different electrical, mechanical and architectural requirements.
- I. Shop Drawings:
1. Carefully examine all shop drawings noting capacity, arrangement and physical dimensions and mark the drawings as being reviewed and approved prior to submitting to the Engineer. Where catalog data is submitted which includes items which do not apply to this project, those items shall be clearly marked out or relevant items clearly noted. Any deviations from the documents shall be so noted by the Contractor or equipment supplier. The intent and requirements of the drawings and specifications shall be adhered to at all times and are not waived or superseded in any way by the shop drawing submittal or review.
 2. Submit a minimum (1) electronic copy of shop drawings for review and approval. Contractor shall retain a final approved copy for incorporation in the Operation and Maintenance Manuals.
 3. If returned shop drawings are marked "NO EXCEPTIONS TAKEN", no additional submittal is required. If the shop drawing is marked "MAKE CORRECTIONS NOTED", the changes noted on the shop drawings are to be incorporated, with no further resubmittal required. If marked "REVISE AND RESUBMIT", changes noted on the shop drawings are to be made and the drawings resubmitted for review. If marked "REJECTED", the equipment submitted is unacceptable and different equipment or materials need to be submitted.
- J. No asbestos or PCB containing materials of any type shall be used on this Project except in cases where acceptable substitutions have not been found for asbestos materials as in high temperature applications.
- K. Consult the Contract Drawings and Specifications of all other Divisions and other trades for correlating information and layout work so that it will not interfere with other trades. Verify all dimensions and conditions. If conflicts occur such that resolution is not possible by the affected trades on the job, the Engineer shall be notified and a resolution will be worked out.
- L. Electrical equipment enclosures (switchboards, panelboards, transformers, relay cabinets, systems racks/cabinets, etc.) shall be vacuumed and wiped clean prior to energizing and again at substantial completion.
- M. Install material and equipment in accordance with Manufacturers' recommendations, instructions, and current N.E.C.A. standards.
- N. Install equipment and materials to provide required access for servicing and maintenance. Coordinate final equipment location with required access panels and doors. Allow ample space for removal of all parts that require replacement or servicing.
- O. Record Drawings: As work progresses, in a neat and legible manner, record all changes or deviations from the issued for construction contract drawings. Contractor shall submit Record Drawings to Engineer for review at completion of Work in the form of a digital CAD file . CAD file shall consist of individual circuit routing locations and labeled lines and points of all junction boxes, splice boxes and beginning and ends of all bores. The Record Drawings will become part of the Operation and Maintenance Manual package submitted to the Owner after the completion of the project.

SECTION 2 - BASIC MATERIALS AND METHODS

- A. All materials shall be new, as specified or approved, and in original packaging. Catalog numbers specified shall be verified with vendors prior to ordering material.
- B. All materials shall be listed by a NRTL (i.e. UL, ETL, etc.) and have an associated label unless special fabrication of material is required. Special fabricated material shall be fabricated using listed components and procedures.
- C. Where the word "provide" is used, it shall require the contractor to furnish and install material complete to a workable system.
- D. All work shall be tested in accordance with industry accepted standards. Before testing, a thorough visual inspection shall be made to detect connection problems, damaged components, poor workmanship, inappropriate overcurrent protection, debris, etc. Testing apparatus shall be certified or demonstrated to be accurate within reasonable limits. Competent personnel familiar with the test equipment shall perform all tests. If testing procedures employed are not satisfactory to the Engineer, outside testing will be done at the Contractor's expense.
- E. Contractor to identify all electrical equipment with engraved 1/4" white letters on black Norplex-Micarta plates unless noted otherwise noted. Inscriptions shall indicate the name, voltage, phase, wires, feeder size, feeder source and location of source, and the device number.
- F. All low voltage cables shall be bundled and labeled as to their function within terminal cabinets, wireways and cable trays.
- G. Branch circuitry shall match circuit numbers as shown on the drawings and as scheduled. Any required deviation shall be indicated on the as-built drawings.
- H. All opening into equipment shall be sealed with galvanized steel plates or screens to prevent entry of insects and rodents.

SECTION 3 - CONDUIT

- A. Conduit:
1. Conduit Size: As indicated on drawings.
 2. All PVC shall be Schedule 40 where not specifically noted otherwise on drawings.
 3. PVC conduit used above grade shall be UV resistant.
 4. HDPE - As indicated on the drawings. Minimum wall thickness shall be SDR 13.5 unless otherwise noted on drawings.
- B. Installation:
1. Conduit bend radius shall not violate the minimum bending radius of cable.
 2. When non-metallic conduit requires field bending, utilize a hot-bending appliance. Use of torches to bend conduit is unacceptable.
 3. Suitable end caps shall be used during installation of conduit.
 4. Accurate record of all conduit routing shall be documented.
 5. Store and protect products in accordance with manufacturers' instructions, with seals and labels intact and legible.
 6. The interior joint surface shall be smooth to prevent damage to the cables.
 7. Contractor shall seal around all conduits with duct sealant or as required on the drawings.
 8. When cable is pulled into ducts, suitable pulling lubricant shall be used.
 9. All underground raceways shall have proper granular soil around then so as to prevent damage to the raceway.

SECTION 4 - WIRING AND CABLE

- A. Approved direct burial cable assembly shall be used only where approved.
- B. Use suitable wire pulling lubricant for wiring of 4 AWG and larger.
- C. Neatly trim and lace wiring inside boxes, equipment, and panelboards.
- D. Clean conductor surfaces before installing lugs and connectors.
- E. For aluminum wiring, apply an oxide inhibitor as recommended by the vendor.
- F. Make taps and terminations to carry full ampacity of conductors with no perceptible temperature rise.
- G. Identification
1. Control wiring shall be marked at both ends as to its function.
 2. Spare conductors shall be identified as such.

SECTION 5 - MEDIUM VOLTAGE CABLES

- I. MV Cables for the system shall be MV-105 Listed single conductor, insulated, shielded and jacketed medium voltage type power cable with 100% insulation level, 105° C. continuous operation rating, 140° C. emergency rating, 250° C. short circuit rating. Allowable neutral temperature during short circuit shall be 350° C.
- J. Concentric neutral cables shall have XLPE jackets, as identified in these plans.
- K. Cable shall have ASTM B-609 aluminum conductors with Class B stranding in accordance with ASTM B-231, moisture blocked strands, an extruded semi-conducting shield layer (40 mil min.) over the conductor for stress control, direct-burial RHW-2, XLPE insulation and a concentric copper neutral.
- L. Cables shall be Manufactured by Okonite, Prysmian, Southwire, General Cable, WTEC, or approved equal.
- M. Cable terminations shall be Manufactured by 3M, Raychem/Tyco, Eaton/Cooper, Richards, or approved equal. Non-load break cable terminations shall be for aluminum cable and shall be IEEE 386 compliant.
- N. Complete installation shall be per National Electrical Code Articles 310 and 328. Do not exceed manufacturer's published maximum pulling tension or sidewall pressure. Provide sufficient slack in cable, ground and drain wires to permit elbow connectors to be moved to their respective parking stands.
- O. All cables shall be labeled at each end at an accessible location for viewing. Label shall indicate circuit, phase, and destination/origination. Labels shall be color coded by phase (black, red, blue) with the circuit and destination/origination written in black letters and secured with a minimum of (2) UV-resistant zip ties.
- P. Splices and terminations shall be made by an experienced journeyman who has been trained by the manufacturer in the proper installation of their product. No splices shall be allowed unless specifically noted.
- Q. Arrange phases at termination points, A-B-C from left to right or top to bottom as viewed from the front unless otherwise noted.
- R. Test all cables according to IEEE Standard 400. Each power cable over 1000V shall be given a continuity and a direct current high potential test or VLF test after installation and after terminations having been made, but before connections have been made to busses or apparatus. All single conductor cables shall be tested between conductors and ground with metallic shield and the other two conductors grounded to the same ground. Each conductor shall be successively tested in the same manner. Direct current voltages shall be applied with negative polarity to the cable conductor.
- S. In addition to any testing specified herein, perform testing consistent with the requirements of the applicable codes, NETA Acceptance Testing criteria, and the manufacturers' current quality assurance program.
- T. Direct burial wiring to meet spacing requirements as identified in these plans.
- U. 100% of existing and new MV collection underground segments shall be VLF testing for all segments.

SECTION 6 - LOW VOLTAGE BOXES

- A. Pull and junction boxes shall be code gauge steel, gasketed, painted, galvanized steel, PVC, or fiberglass. Covers shall be secured with screws.
- B. Outlet boxes shall be cast malleable iron with threaded hubs or PVC and be of high conductive metal to maintain maximum electric continuity.
- C. All outlets shall be equipped with outlet boxes approved for the use.
- D. Covers or plates for boxes shall conform substantially to the outlet of the boxes with no projecting edges or corners.
- E. Conduit fittings ("LB", "C", "T") or types approved for the location may be employed as required to facilitate pulling in conductors.
- F. Provide pull and junction boxes to facilitate pulling or splicing of conductors.
- G. Mount boxes to allow for maximum flexibility.
- H. Install grounding bushings with bonding conductor on all metallic feeder conduits entering box. Ground bushings and bonding conductors are not required on branch circuit conduits.

SECTION 7 - MEDIUM VOLTAGE SECTIONALIZING CABINETS

- A. Sectionalizing cabinets shall be designed for burial with the junction modules or bushings mounted above the ground line. Pedestals shall be in complete conformance with ANSI C57.12.28, Pad-mounted Equipment Enclosure Integrity Standard.
- B. Sectionalizing cabinets shall be Manufactured by Nordic, Cooper, Hubbell, G&W, Power Design Inc., Highline, Federal Pacific, Hoffman, S&C, or approved equal.
- C. Enclosure shall be 3/16" nominal thickness fire resistant, laminate, fiberglass, with munsell green gel coat finish. Enclosure access doors shall utilize stainless steel hinges and shall have provisions for padlocking. Doors shall have provisions for securing in the open position.
- D. Provide junction panels with wells to accommodate the size and quantity of load break or non-load break elbows indicated on drawings.
- E. Provide ground bar in unit for bonding of ground conductors and concentric neutrals.
- F. Provide fiberglass ground sleeve extending 36" below cabinet installed on a 6" clean gravel base to allow drainage.
- G. The parking stand operates together with the stand-off bushing to allow for parking of energized or grounded MV cable.

SECTION 8 - DISCONNECT SWITCHES

- A. All disconnect switches shall be NEMA heavy duty Type H.D., horsepower rated, and U.L. listed. Disconnects shall be Eaton, GE, Square D, or Siemens.
- B. Provide auxiliary disconnect contacts for control circuits when supplied from an independent source.
- C. Switch Interior - All switches shall have switch blades which are fully visible in the off position when the door is open. Switches shall be of dead-front construction with permanently attached arc suppressors hinged or otherwise attached to permit easy access to line-side lugs without removal of the arc suppressor. Lugs shall be UL listed for copper and/or aluminum cables and front removable. All current carrying parts shall be plated by electrolytic processes.
- D. Switch Mechanism - Switches shall have a quick-make and quick-break operating handle and mechanism which shall be an integral part of the box, not the cover. Switches shall have a dual cover interlock to prevent unauthorized opening of the switch door in the ON position or closing of the switch mechanism with the door open. Switches shall provisions for locking the switch in both the ON and the OFF positions by padlock.
- E. Enclosures shall be NEMA 3R enclosures otherwise specified. Raintight covers shall be securable in the open position. Enclosures shall be code gauge (UL 98) galvanized steel (NEMA 3R). They shall be treated with a rust-inhibiting phosphate and finished in gray baked enamel.
- F. Install disconnect switches in an accessible location as convenient as possible to equipment served.
- G. Switches shall be rated for the voltage and system type they are used for.

SECTION 9 - GROUNDING

- A. Provide complete grounding systems as described herein and as shown on the drawings.
- B. All grounding components shall be listed for the purpose they are installed for. Components shall be Manufactured by AMPACT, Burndy, CADWELD, ITT Blackburn, IlSCO, Lyncole, or approved equivalent.
- C. Ground rods shall be 5/8 inch diameter by 10 feet long copper clad steel. Connecting cables shall be #3/0 AWG stranded, copper or as indicated on drawings.
- D. All metallic conduits, supports, cabinets, non-current carrying parts of equipment, and metallic structures shall be solidly grounded to form a continuous permanent and effective grounded system.

- E. All wireways, metal enclosures, cable trays and similar parts of the electrical installation described herein shall be grounded.
- F. Low voltage neutrals shall be bonded to the grounding system only at the point of establishing utility service and when establishing a separately derived system such as at the secondary side of transformers or at inverters. MV cable concentric neutrals shall be bonded to the grounding system at all terminations and splice locations.
- G. Ground Rods:
1. Copper-clad steel
 2. 3/4-inch diameter, or as indicated on Drawings.
 3. Length, 10 feet or as indicated on Drawings.
- H. Mechanical Connectors to be used for connections with concrete encasement unless otherwise indicated on drawings
- I. WTG Grounding Wire
1. Stranded Copper
 2. Size as indicated on Drawings
- J. Trench Ground Wire
1. Copperclad Steel (40% Conductivity)
 2. Size as indicated on Drawings
- K. Verify that final backfill, and compaction has been completed before driving ground rods.
- L. Install products in accordance with manufacturer's instructions.
- M. Provide bonding to meet regulatory requirements
- N. Bare grounding conductors shall be laid slack approximately 18 inches below grade or as otherwise specified in drawings.
- O. Ground rods should as much as practical be located as shown on the grounding plan. Each ground rod should be driven in undisturbed earth.
- P. Grounding requirements must meet turbine manufacturer's requirements as well as the requirements in the bid and design documents.
- Q. After all grounding connections are made, but before connecting the power cables trench ground, resistance readings for the completed foundation ground shall be recorded using the Fall of Potential method. Results shall be conveyed to the Engineer.
- R. Refer to MET tower supplier for grounding details.
- S. Ground rods shall be equal to their length and shall be laid out in a triangular pattern.
- T. All grounding electrode connections shall be exothermic type or irreversible crimp type unless otherwise indicated.
- U. Bolted connections to ground bus bars shall be made using a (2) eyelet irreversible crimp connector on the ground conductor. Where two holes are not available on the ground bus bar, a single eyelet irreversible crimp connector can be used.
- V. All transformers shall be bonded to the grounding electrode system as well as building steel.
- W. Bond all cable tray and equipment racks to ground with a minimum #6 AWG ground conductor.
- X. The true resistance to earth of the turbine grounding system shall be tested by the fall of potential method and compared to manufacturer requirements.
- Y. Grounding/earthing design per turbine manufacturer documentation.

SECTION 10 - CABLE TERMINATIONS AND SPLICES

- A. Cable Splices:
1. Cold shrink splices shall be designed to meet or exceed IEEE 404 and ANSI C119.
 2. All manufacturer's recommendations and installation procedures shall be explicitly followed.
 3. The contractor shall be proficient with all requirements of the manufacturers splice installation procedures.
 4. Cable splicing shall be completed under weather conditions suitable for this type of work.
 5. The cable circuits shall be grounded at each splice location per installation drawings.
 6. No splices shall be allowed unless specifically noted or approved by Owner.
 7. Splicing of two different cable sizes is not allowed.
 8. Arrange phases at termination points, A-B-C from left to right or top to bottom as viewed from the front unless otherwise noted.
 9. Marker balls and GPS locations at all splices shall also be provided.
 10. All concentric shield wires shall be bonded and grounded at each splice
 11. Ensure splice has a watertight seal.
 12. A protective tent must be erected around the splicing location.
 13. If the temperature at the splicing location is below 40°F a heat source shall be located at the splicing location to heat the protective tent to 45°F
- B. Dead Break Elbow, Cable Connector, Accessories, 600 Amp:
1. At each termination there shall be enough cable for two additional terminations. This shall be accomplished through S-loop outside the equipment or service loops within a vault.
 2. Non-load break cable terminations shall be for aluminum cable and shall be IEEE 386 compliant.
 3. Install cable and accessories in accordance with manufacturer's instructions.
 4. Ground concentric neutrals and drain wires at each termination.
 5. Cable shall be always handled properly to avoid damage, and not be dragged across the ground or sharp projections.
 6. The ends of the cable shall be sealed at all times against moisture with suitable end caps.
 7. Complete installation shall be per National Electrical Code Articles 310 and 328. Do not exceed manufacturer's published maximum pulling tension or sidewall pressure.
 8. Provide sufficient slack in cable, ground and drain wires to permit elbow connectors to be moved to their respective parking stands.
 9. Avoid excessive bending of the cable. The ends of the cable shall be sealed at all times against moisture with suitable end caps. Where it is necessary to cut the cable, the ends shall be terminated or sealed immediately after the cutting operation.
 10. Heating equipment and/or enclosures will be used to maintain the cable, tools and installation materials at a temperature recommended by the manufacturer at all exposed locations, until each particular phase of installation is complete.
 11. Inspect cable for proper connections as shown on drawings.
 12. Inspect shield ground terminals for proper installation.
- C. Directional Fault Indicators:
1. Fault indicators shall be installed on the elbow per manufacturer's instructions. Care shall be taken to route the concentric neutral wires in the proper manner so as to avoid cancellation effects. (i.e. wires shall pass through the fault indicator either not at all, or in both directions).
 2. Install fault indicators in the locations shown on the drawings.
- D. Compression Lugs:
1. For connection of cable to padmounted transformers and low voltage connections at wind turbine (if applicable).
 2. Suitable for use with aluminum conductors.
 3. Install per manufacturer's recommendations.

SECTION 12 - SURGE ARRESTERS

- A. Surge Arresters:
1. 600 A, dead break with IEEE Std 386 interface.

2. For use on 34.5 kV RMS line-to-line system.
 3. MCOV rating as indicated on drawings.
- B. Installation:
1. Accordance with manufacturer's instructions.
 2. Install per manufacturers recommendations, owner's scope of work, and as shown on the drawings.
 3. Arrestor ground wires shall be bonded to local ground wire in equipment.

SECTION 13 - FIBER OPTIC CABLE

- A. Fiber Optic Cable:
1. The fiber optic cable shall be single mode, 9/125 micron cable with 12 strands.
 2. Single jacket, loose tube with water blocking material cable to be placed in an underground duct application.
 3. Fiber to be installed in 1.25" HDPE innerduct per the drawings.
- B. Fiber Optic Cable Termination sand Splice Enclosures:
1. Terminations shall be completed with either an approved fiber optic pigtail kit or with approved mechanical connectors and an approved fanout kit.
 2. Splice enclosure shall be mechanical sealed thermoplastic units.
- C. The fiber hand holes shall be a precast polymer concrete for underground construction.
- D. Fiber Optical Cable Installation:
1. Installation shall be done in a professional manner in accordance with the Drawings and Specifications.
 2. All material shall be stored so as to be protected from deteriorating effects of the elements.
 3. All fiber optic cable testing shall be performed with an Optical Time Domain Reflectometer (OTDR) in both directions. Testing shall be completed on each fiber optic cable and strand, from termination to termination.
 4. All manufacturer's recommendations and installation procedures shall be explicitly followed.
 5. Cable shall be installed with proper observance of cable's minimum bending radius during installation , and permanent , per the manufacturer.
 6. The contractor shall be proficient with all requirements of the installation procedures.
 7. Patch Panel Labeling: If the cable manufacturer has not color coded the individual strands then the strands shall be labeled with sequential numbers
 8. Every cable shall be labeled on both ends.
 9. The label on the cable shall be placed as close to the end of the cable where the sheathing has been stripped away. It shall be placed in a location easily viewable after the cable has been installed.
 10. Additional labeling shall be used as required to enable fast and reliable assembly and maintenance of network. Any additional labeling shall be standardized throughout the project, recorded, and documented.

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Agricola Wind LLC

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Agricola Wind
Project

Cayuga County, New York

Electrical Notes

NOT FOR CONSTRUCTION

DATE: 10/4/2024

SHEET: E0010

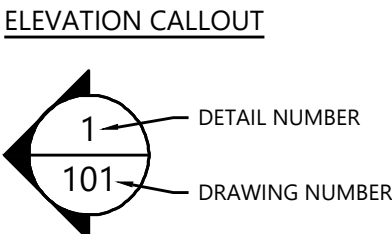
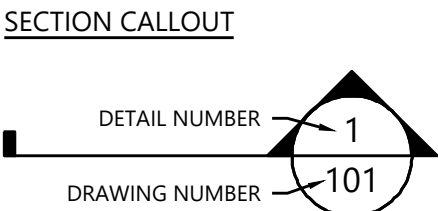
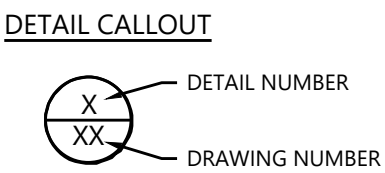
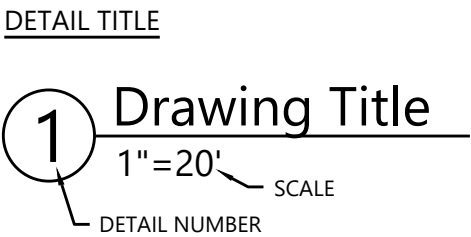
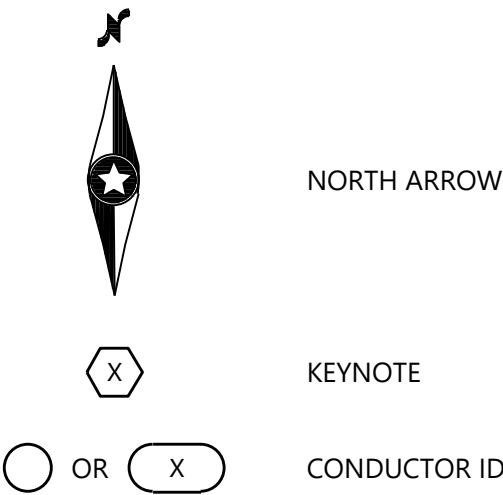
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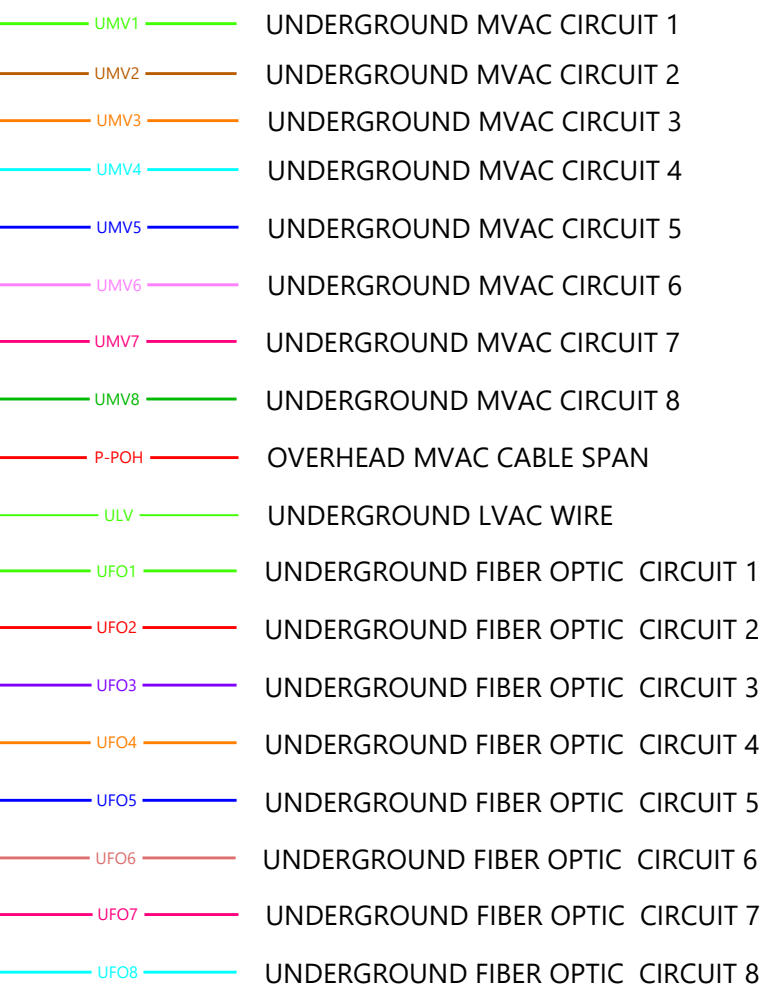
ABBREVEATIONS:

A, AMP	AMPERAGE	ELEC	ELECTRIC/ELECTRICAL	PLS	POLE - STEEL
A/E	ARCHITECT/ENGINEER	EMT	ELECTRICAL METAL TUBING	PLW	POLE - WOOD
AAT	AMBIENT AIR TEMPERATURE SENSOR	ENGR	ENGINEER	PNL	PANEL
ABAN	ABANDON	EOP	EDGE OF PAVEMENT	PROP	PROPERTY/PROPOSED
ABC	AGGREGATE BASE COURSE	EQ	EQUAL	PVC	POLYVINYL CHLORIDE
AC	ALTERNATING CURRENT	EQUIP	EQUIPMENT	PVMT	PAVEMENT
ACC	ASPHALTIC CONCRETE PAVEMENT	EST	ESTIMATE	PWR	POWER
ADDL	ADDITIONAL	EXC	EXCAVATION	QTY	QUANTITY
ADJ	ADJUSTABLE/ADJACENT	EXIST	EXISTING	R	RADIUS
AFCI	ARC FAULT CIRCUIT INTERRUPTER	F	FUSE	R&R	REMOVE AND REPLACE
AFF	ABOVE FINISH FLOOR	FBO	FURNISHED BY OTHERS	R&S	REMOVE AND SALVAGE
AFG	ABOVE FINISH GRADE	FG	FINISHED GRADE	RCB	RECOMBINER BOX
AGGR	AGGREGATE	FLR	FLOOR	RCPT	RECEPTACLE
AIC	AMPS INTERRUPTING CAPACITY	FLUOR	FLUORESCENT	RCT	REACTOR
AL	ALUMINUM	FOC	FACE OF CONCRETE/CURB	REF	REFERENCE
ALIG	ALIGNMENT	FT	FEET/FOOT	REL	RELAY
ALT	ALTERNATE	FUT	FUTURE	REQD	REQUIRED
ANE	ANEMOMETER	GEN	GENERAL	RET	RETAINING
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	GFI	GROUND FAULT INTERRUPTER	REV	REVISION
APRX	APPROXIMATE	GND	GROUND CONDUCTOR	RGH	ROUGH
APVD	APPROVED	GR	GRADE	RM	ROOM
ARCH	ARCHITECTURAL	GSW	GANG-OPERATED SWITCH	RMT	REVENUE METER
ASSY	ASSEMBLY	GVL	GRAVEL	RTU	RTU
ATS	AUTOMATIC TRANSFER SWITCH	HORIZ	HORIZONTAL	SA	SURGE ARRESTOR
AUTO	AUTOMATIC	HP	HORSE POWER	SAN	SANITARY
AUX	AUXILIARY	HPY	HORIZONTAL PYRANOMETER	SC	SEPARABLE CONNECTOR
AWG	AMERICAN WIRE GAUGE	HT	HEIGHT	SCHED	SCHEDULE
BAT	BATTERY	HZ	HERTZ	SD	STORM DRAIN
BITUM	BITUMINOUS	I, INV	INVERTER	SEC	SECTIONALIZER
BKR	BREAKER	ID	INSIDE DIAMETER	SHT	SHEET
BL	BASE LINE	IE	INVERT ELEVATION	SL	SLOPE
BLDG	BUILDING	IMC	INTERMEDIATE METALLIC CONDUIT	SOG	SLAB ON GRADE
BMP	BEST MANAGEMENT PRACTICE	IN	INCH	SPD	SURGE PROTECTOR DEVICE
BOC	BACK OF CURB	INS	INSULATOR	SPEC	SPECIFICATION
BRD	BOARD	INV	INVERT	SQ	SQUARE
BUS	BUS CONDUCTOR	JB	JUNCTION BOX (J-BOX)	SQ FT	SQUARE FEET
C	CONDUIT	JBM	JUNCTION BOX - MEDIUM VOLTAGE	STA	STATION
C&G	CURB AND GUTTER	JMP	JUMPER CONDUCTOR	STD	STANDARD
CAB	CABINET	KO	KNOCKOUT	STL	STRUCTURAL STEEL
CB, CBK	CIRCUIT BREAKER	KV	KILOVOLT	SW	SWITCH
CBL	CABLE	KVA	KILOVOLT AMPERE	SWBD	SWITCHBOARD
CCB	CONCRETE BLOCK	KVAR	KILOVOLT AMPERE REACTIVE	SWF	SWITCH - FUSED
CCTV	CLOSED CIRCUIT TELEVISION	KW	KILOWATT	SWG	MEDIUM VOLTAGE SWITCHGEAR
CE	CONCRETE EDGE	KWH	KILOWATT HOUR	SY	SQUARE YARD
CF	CUBIC FOOT/FEET	LAR	LIGHTNING ARRESTOR	SYS	SYSTEM
CHGR	BATTERY CHARGER	LATL	LATERAL	T&B	TOP AND BOTTOM
CIP	CAST-IN-PLACE	LBS	POUNDS	TB	TAP BOX
CL	CENTERLINE	LP	LOWPOINT	TC	TRACKER CONTROLLER
CLM	CELLULAR MODEM	LT	LIGHT	TEL	TELEPHONE
CLR	CLEAR, CLEARANCE	LTG	LIGHTING	TFH	TRANSFORMER - MAIN STEP-UP
CMB	COMBINER BOX	LV	LOW VOLTAGE	TFM	TRANSFORMER - INVERTER STEP-UP
CMP	CORRUGATED METAL PIPE	MA	MILLIAMPERE	TFS	TRANSFORMER - STATION SERVICE
CMT	CHECK METER	MATL	MATERIAL	THS	THERMAL SENSOR
CMU	CONCRETE MASONRY UNIT	MAX	MAXIMUM	TM	TRACKER MOTOR
CNT	CONDUIT	MBR	MAIN BREAKER	TOB	TOP OF BERM
CO	CLEANOUT	MCB	MAIN CIRCUIT BREAKER	TOC	TOP OF CURB
CONC	CONCRETE	MCC	MOTOR CONTROL CENTER	TOPO	TOPOGRAPHY
CONN	CONNECTION	MET	METERING STATION	TOS	TOP OF SLAB/TOE OF SLOPE
CONST	CONSTRUCTION	MFR	MANUFACTURER	TT	TORQUE TUBE
CONTR	CONTRACTOR	MIN	MINIMUM	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
CPC	CAPACITOR BANK	MLO	MAIN LUGS ONLY	TYP	TYPICAL
CT	CURRENT TRANSFORMER	MON	MONUMENT	UG	UNDERGROUND CABLE TERMINATION
CTR	CENTER	MPNL	METER PANEL	UNO	UNLESS NOTED OTHERWISE
CTRL	CONTROL	MTD	MOUNTED	UPS	UNINTERRUPTIBLE POWER SUPPLY
CU	COPPER	MTR	METER	UTIL	UTILITY
DAM	DATA ACQUISITION MODULE	NA	NOT APPLICABLE	V	VOLT
DAS	DATA ACQUISITION SYSTEM	NC	NORMALLY CLOSED	VA	VOLT AMPERE
DC	DIRECT CURRENT	NDS	NIGHTTIME DISCONNECT SWITCH	VT	VOLTAGE TRANSFORMER
DCA	DISCONNECT - AC	NO	NORMALLY OPEN	W	WATT
DCD	DISCONNECT - DC	NTS	NOT TO SCALE	W/	WITH
DCF	DISCONNECT - FUSED	OC	ON CENTER	W/O	WITHOUT
DCH	DISCONNECT - HIGH VOLTAGE	OHC	OVERHEAD CONDUCTOR	WP	WEATHERPROOF
DCM	DISCONNECT - MEDIUM VOLTAGE	PAP	PLANE OF ARRAY PYRANOMETER	WS	WEATHER STATION
DCI	COMBINER INPUT AT INVERTER	PB	PUSHBUTTON	WSS	WIND STOW SWITCHES
DEMO	DEMOLITION	PCC	PORTLAND CONCRETE PAVEMENT	WTG	WIND TURBINE GENERATOR
DIA	DIAMETER	PEN	ROOF PENETRATION	WVA	WEATHER VANE
DISC	DISCONNECT	PF	POWER FACTOR	XFMR	TRANSFORMER
DTL	DETAIL	PH,Φ	PHASE	XSECT	CROSS SECTION
DWG	DRAWING	PIL	SUPPORT PILE		
EA	EACH	PL	PROPERTY LINE		
EL	ELEVATION	PLC	PROGRAMMABLE LOGIC CONTROLLER		

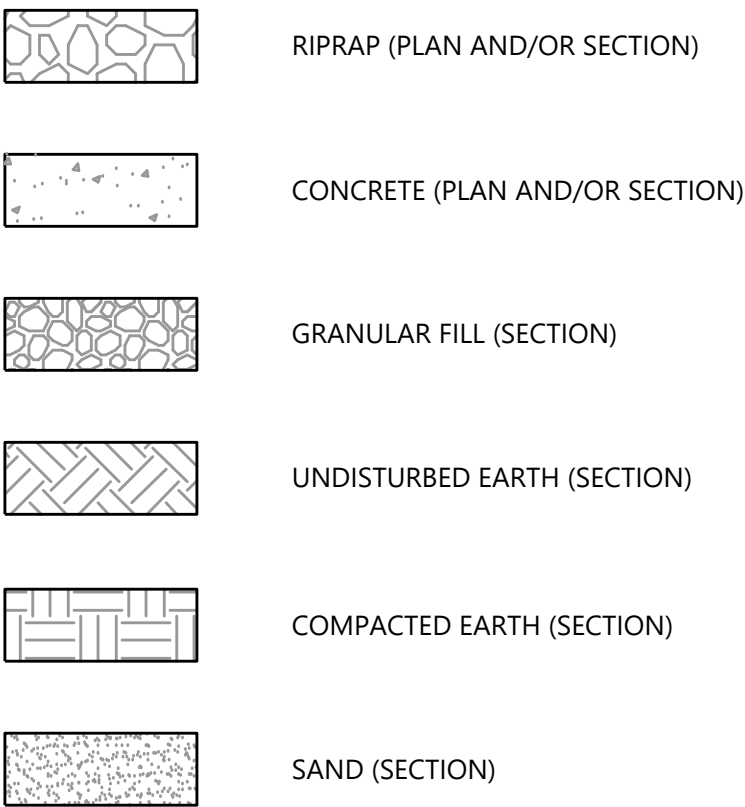
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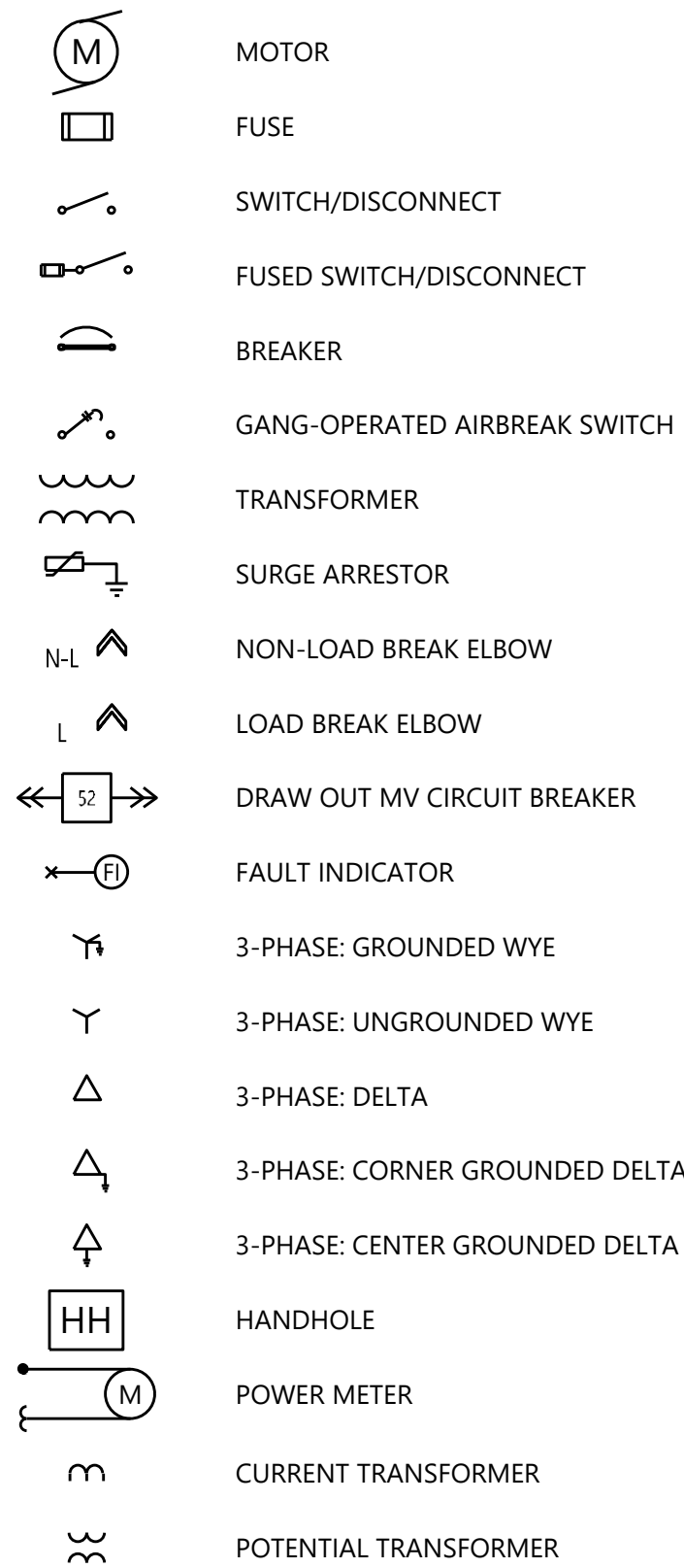
PLAN LINE SYMBOLOGY:



MATERIALS IN PLAN/SECTION:

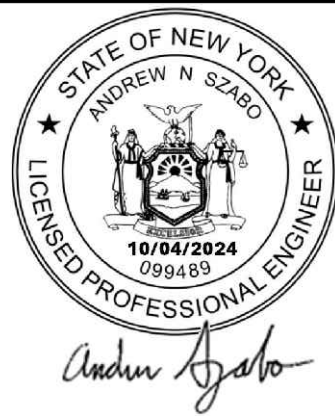


ELECTRICAL SYMBOLOGY:



NOTES:

1. THIS IS A STANDARD SYMBOLOGY AND ABBREVIATION SHEET. ALL SYMBOLS AND ABBREVIATIONS ARE NOT NECESSARILY USED ON THIS PROJECT.
2. SYMBOLS AND ABBREVIATIONS, SHOWN ON THIS PLAN, APPLY TO THIS ENTIRE SET OF PLANS.
3. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.



PREPARED FOR:

Agricola Wind LLC

REVISIONS:					
#	DATE	COMMENT	BY	CHK	APR
A	03/15/2024	ISSUED FOR 30% DESIGN REVIEW	MR	SK	DS
B	10/4/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

Agricola Wind
Project

Cayuga County, New York

Symbology &
Abbreviations

NOT FOR CONSTRUCTION

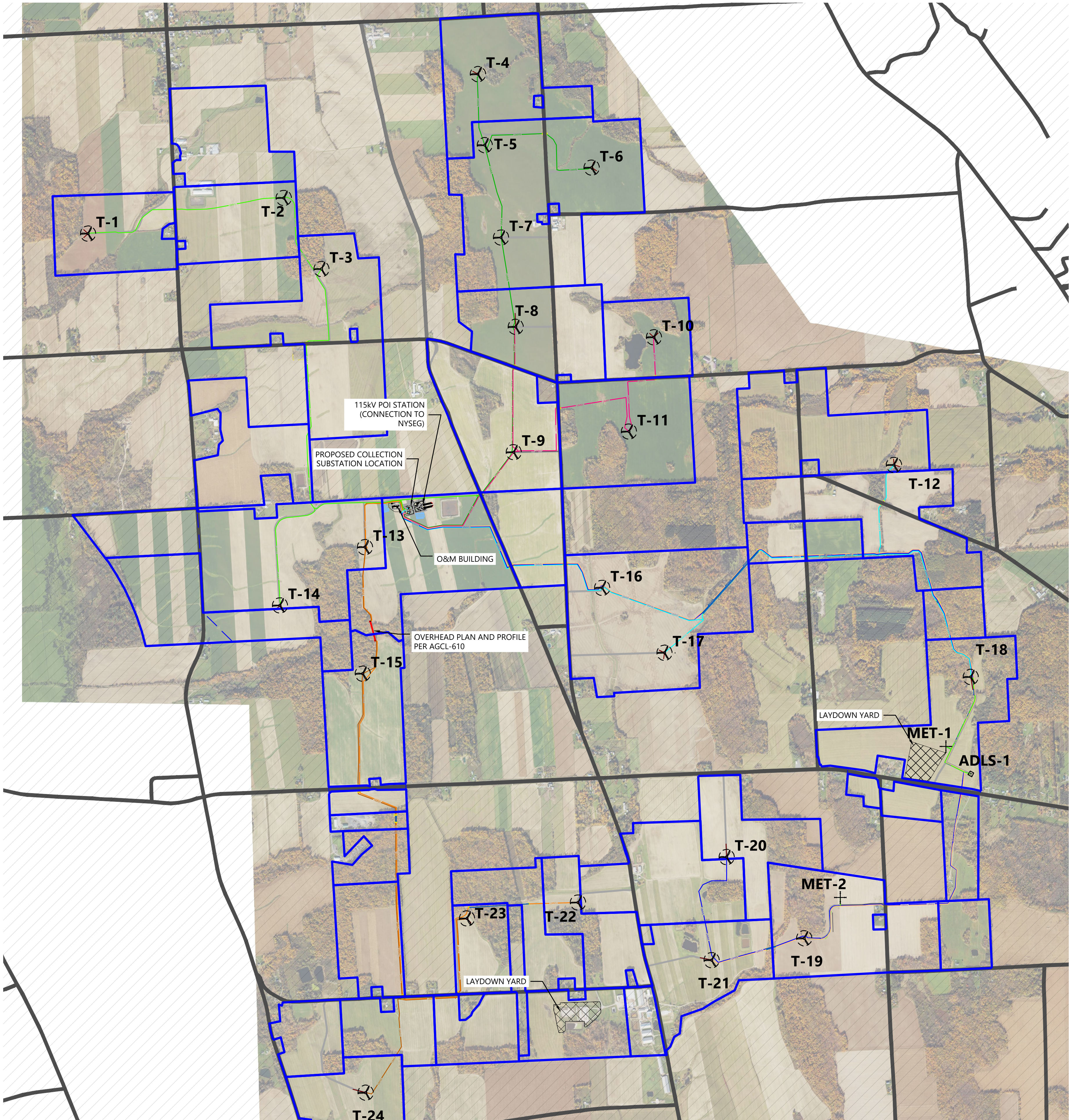
DATE: 10/4/2024

SHEET: E0020

REV:

B

9/10/2024 10:17 AM, CADD, Electrical/002457720 - E1000 Overall MV Site Plan.dwg, 10/4/2024, 3:18 PM, Stan, Ketting



LEGEND:

- T-#** WIND TURBINE
- MET-#** MET TOWER LOCATION
- ADLS-#** ADLS TOWER
- UNDERGROUND MVAC CIRCUIT 1
- UNDERGROUND MVAC CIRCUIT 2
- UNDERGROUND MVAC CIRCUIT 3
- UNDERGROUND MVAC CIRCUIT 4
- UNDERGROUND MVAC CIRCUIT 5
- UNDERGROUND MVAC CIRCUIT 6
- UNDERGROUND MVAC CIRCUIT 7
- UNDERGROUND MVAC CIRCUIT 8
- OVERHEAD MVAC CABLE SPAN
- UNDERGROUND LVAC WIRE
- WETLAND CABLE CROSSING POINT
- ROAD CABLE CROSSING POINT
- CROSSING ID CALLOUT
- PROPOSED ACCESS ROAD
- PROPOSED LAYDOWN YARD
- PROJECT LIMITS/ NON-PARTICIPATING LAND

Westwood
Surveying & Engineering

Phone (952) 937-5150 12701 Whitewater Drive, Suite #300
Fax (952) 937-5822 Minnetonka, MN 55343
Toll Free (888) 937-5150 www.pc.com
Westwood Surveying and Engineering, P.C.

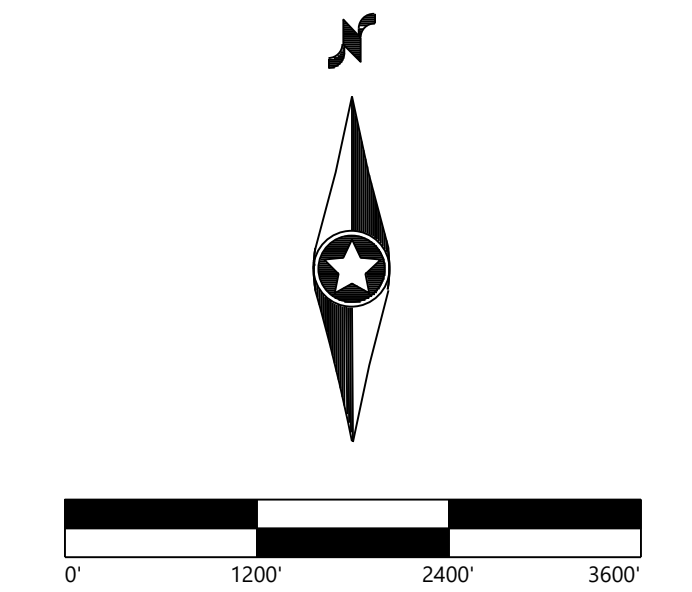
Andrew N. Szabo

PREPARED FOR:

Agricola Wind LLC

REVISIONS:

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Agricola Wind Project

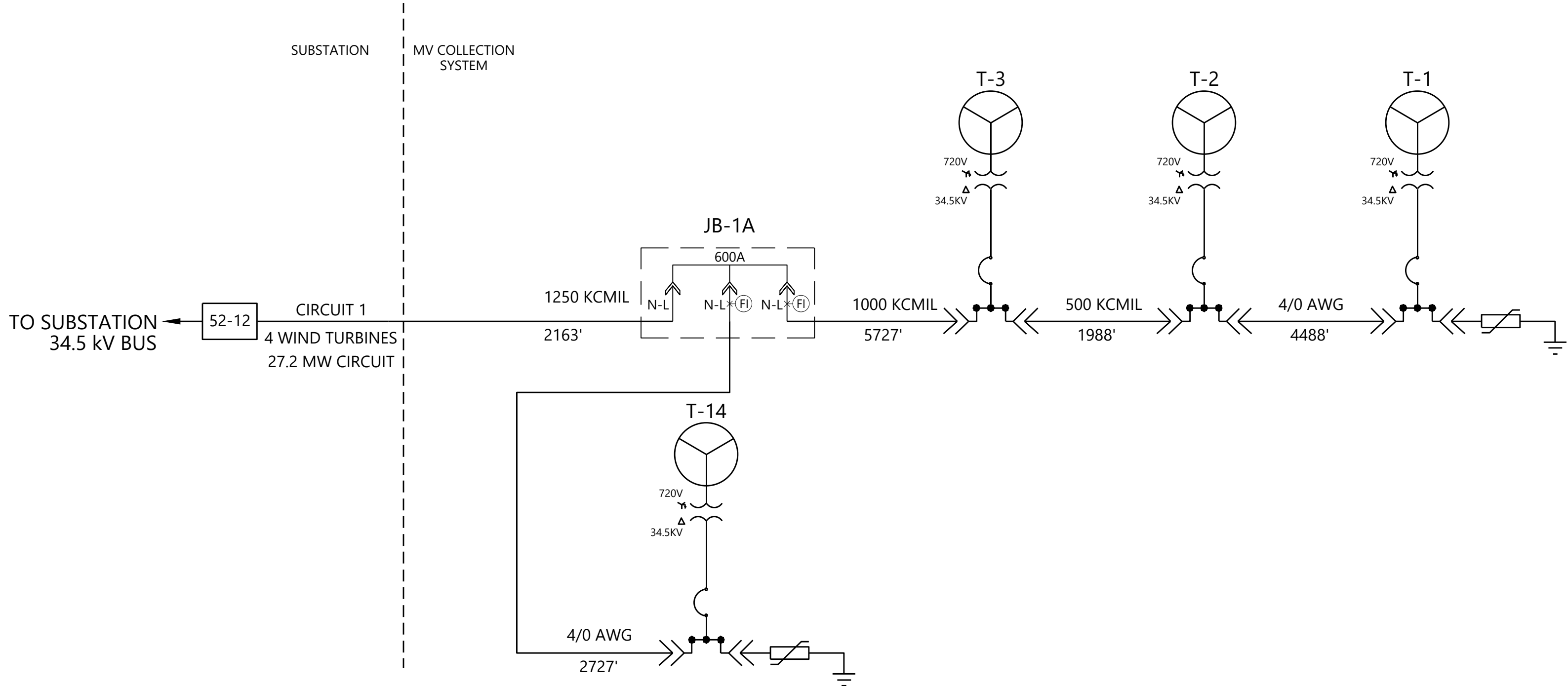
Cayuga County, New York

Overall MV Site Plan

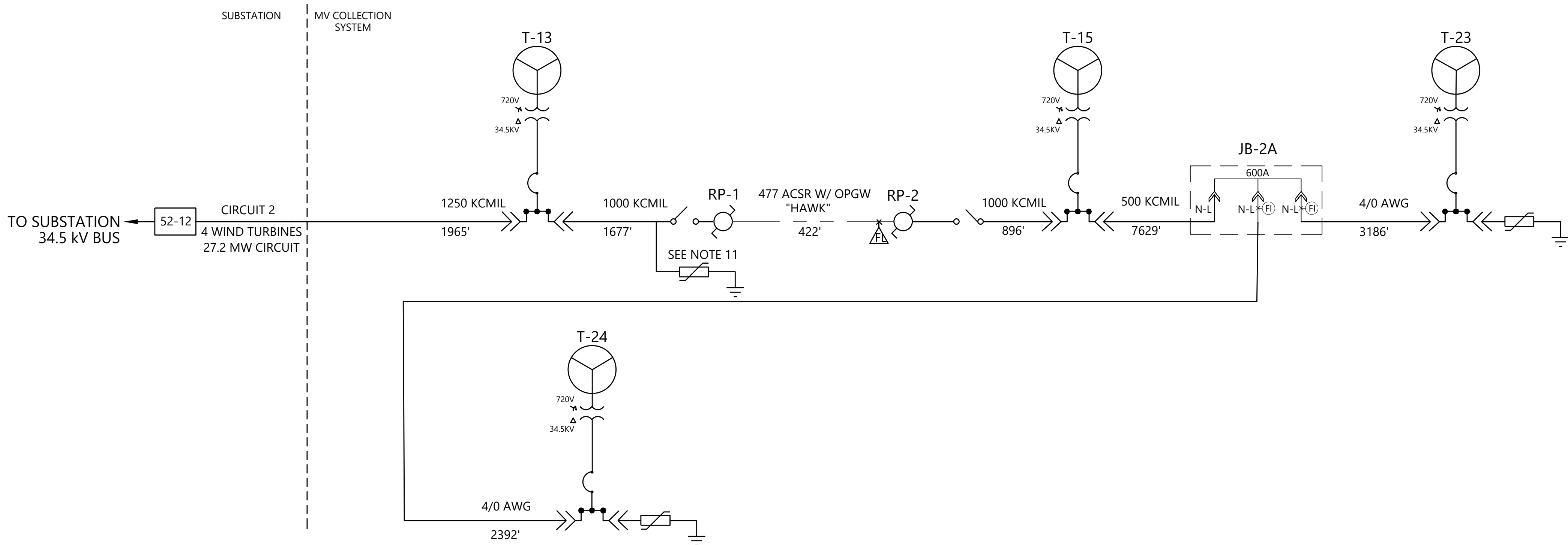
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DATE: 10/4/2024 REV: B
SHEET: E1000

01/04/2024 17:01 CAD: Electrician/042407101 - E1300 MV Collection.dwg 10/04/2024 3:18 MW Scan Setting



MVAC WIRING SCHEDULE												
CIRCUIT	CONDUCTOR LOCATION CODE	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	RATED Vac (kV)	I _{ac} (A)	LENGTH (FT)	CONDUCTOR SIZE	CONDUCTOR MATERIAL	# OF PARALLEL CIRCUITS	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR MATERIAL	CONDUCTOR SPECIFICS
1	MV1.SUB-B-1A	SUB	JB-1A	34.5	562.89	2,163	1250	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 18x#16 CN, XLPE
	MV1.B-1A-T-3	JB-1A	T-3	34.5	422.16	5,727	1000	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 15x#16 CN, XLPE
	MV1.T-3-T-2	T-3	T-2	34.5	281.44	1,988	500	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 9x#16 CN, XLPE
	MV1.T-2-T-1	T-2	T-1	34.5	140.72	4,488	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE
	MV1.B-1A-T-14	JB-1A	T-14	34.5	140.72	2,727	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE

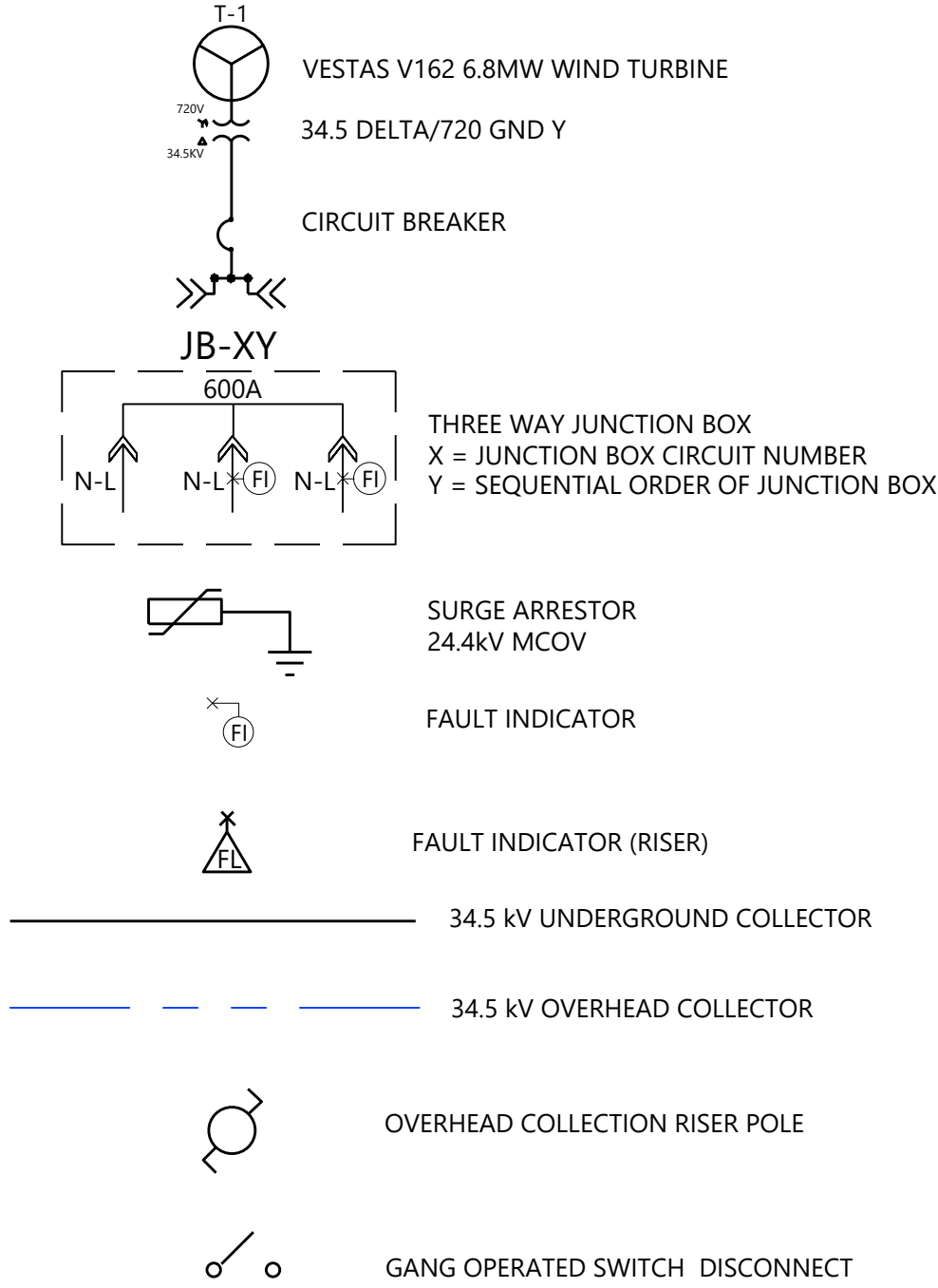


MVAC WIRING SCHEDULE												
CIRCUIT	CONDUCTOR LOCATION CODE	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	RATED Vac (kV)	I _{ac} (A)	LENGTH (FT)	CONDUCTOR SIZE	CONDUCTOR MATERIAL	# OF PARALLEL CIRCUITS	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR MATERIAL	CONDUCTOR SPECIFICS
2	MV2.SUB-T-13	SUB	T-13	34.5	562.89	1,965	1250	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 18x#16 CN, XLPE
	MV2.T-13-RP-1	T-13	RP-1	34.5	422.16	1,677	1000	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 15x#16 CN, XLPE
	MV2.RP-1-RP-2	RP-1	RP-2	34.5	422.16	422	477	ACSR	1	Per OPGW/Spec	OPGW	Phase: 477 ACSR HAWK, Ground: OPGW
	MV2.RP-2-T-15	RP-2	T-15	34.5	422.16	896	1000	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 15x#16 CN, XLPE
	MV2.T-15-JB-2A	T-15	JB-2A	34.5	281.44	7,629	500	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 9x#16 CN, XLPE
	MV2.JB-2A-T-23	JB-2A	T-23	34.5	140.72	3,186	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE
	MV2.JB-2A-T-24	JB-2A	T-24	34.5	140.72	2,392	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE

GENERAL NOTES

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- PROVIDE EXTERNAL SURGE ARRESTERS AT END-OF-LINE XFMR BUSHINGS.
- INSTALL ALL EQUIPMENT AND WIRING IN ACCORDANCE WITH THE NEC AND NESC.
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- OVERHEAD COLLECTION DETAILED DESIGN TO BE PROVIDED IN SEPARATE DRAWING PACKAGE.

LEGEND



PREPARED FOR:

Agricola Wind LLC

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	03/15/2024	ISSUED FOR 30% DESIGN REVIEW	MR	SK	DS
B	10/4/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

Agricola Wind Project

Cayuga County, New York

MV Collection Single
Line Diagrams

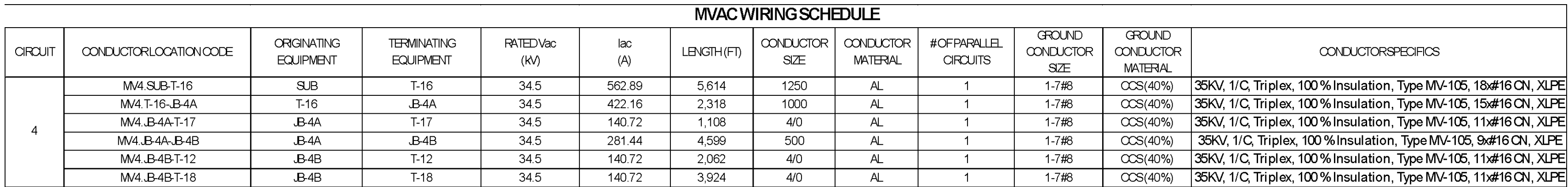
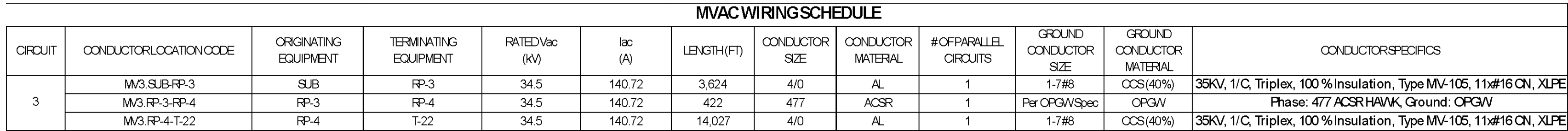
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DATE: 10/4/2024

SHEET: E1300

REV:

B

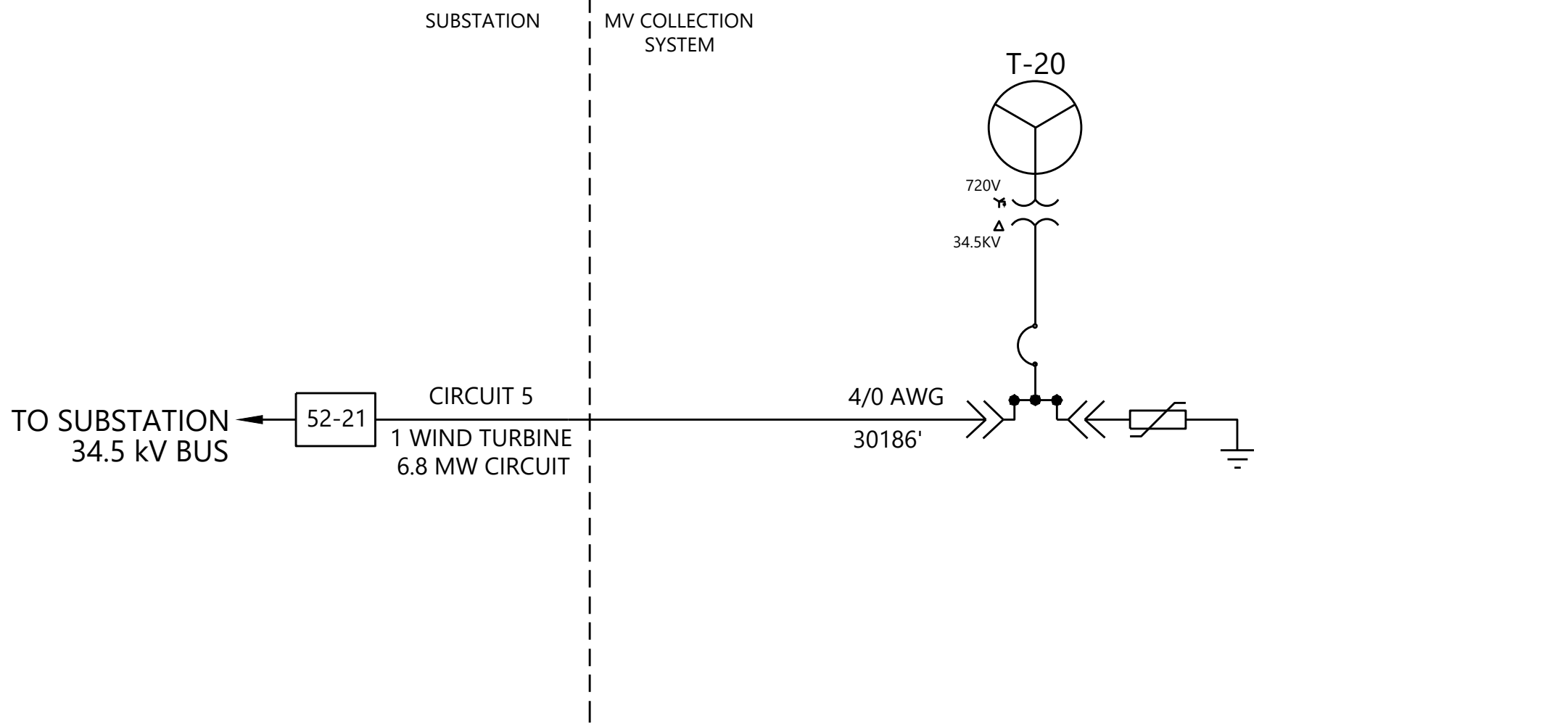


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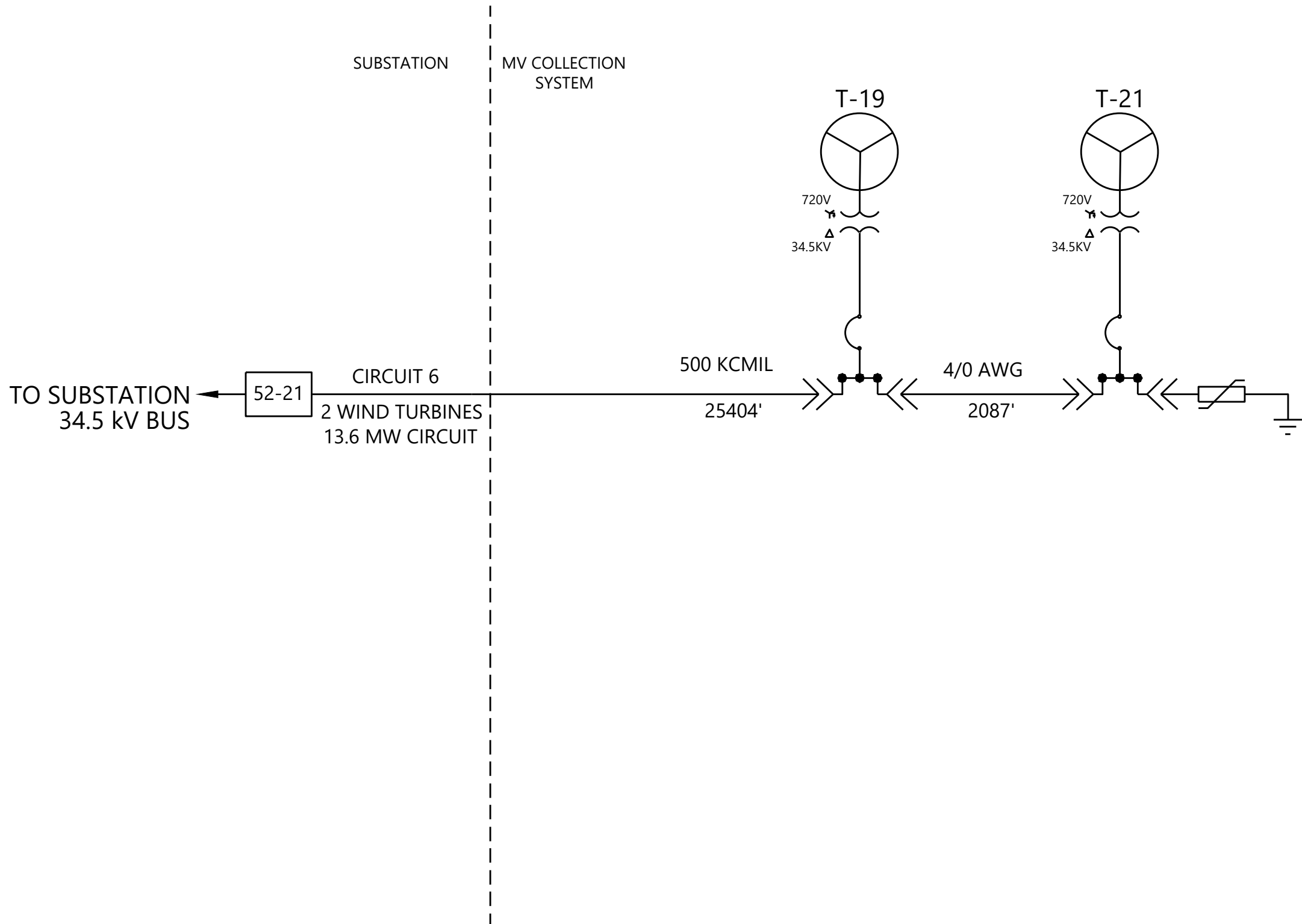
Diagram illustrating various electrical symbols and their descriptions:

- VESTAS V162 6.8MW WIND TURBINE**: Symbol showing a wind turbine connected to a 34.5 kV bus.
- 34.5 DELTA/720 GND Y**: Symbol showing a delta connection with ground.
- CIRCUIT BREAKER**: Symbol showing a circuit breaker.
- JB-XY**: Symbol showing a three-way junction box with a 600A rating.
- THREE WAY JUNCTION BOX**: Symbol showing a three-way junction box.
- X = JUNCTION BOX CIRCUIT NUMBER**: Symbol showing a junction box with a circuit number X.
- Y = SEQUENTIAL ORDER OF JUNCTION BOX**: Symbol showing a junction box with a sequential order Y.
- SURGE ARRESTOR**: Symbol showing a surge arrester.
- 24.4kV MCOV**: Symbol showing a surge arrester with a 24.4kV MCOV rating.
- FAULT INDICATOR**: Symbol showing a fault indicator (FI).
- FAULT INDICATOR (RISER)**: Symbol showing a fault indicator (FI) with a riser.
- 34.5 kV UNDERGROUND COLLECTOR**: Symbol showing a 34.5 kV underground collector.
- 34.5 kV OVERHEAD COLLECTOR**: Symbol showing a 34.5 kV overhead collector.
- OVERHEAD COLLECTION RISER POLE**: Symbol showing an overhead collection riser pole.
- GANG OPERATED SWITCH DISCONNECT**: Symbol showing a gang operated switch disconnect.

\\002617.01 - CAD - Electrical\002617.01 - E1302 MV Collection.dwg 10/04/2024 3:18 PM Sam Kefauver



MVAC WIRING SCHEDULE												
CIRCUIT	CONDUCTOR/LOCATION CODE	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	RATED Vac (kV)	Iac (A)	LENGTH (FT)	CONDUCTOR SIZE	CONDUCTOR MATERIAL	# OF PARALLEL CIRCUITS	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR MATERIAL	CONDUCTOR SPECIFICS
5	MV5 SUB-T-20	SUB	T-20	34.5	140.72	30,186	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100% Insulation, Type MV-105, 11x#16 CN, XLPE

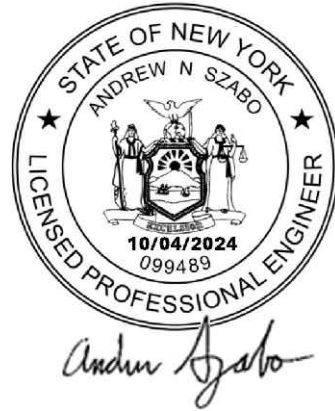
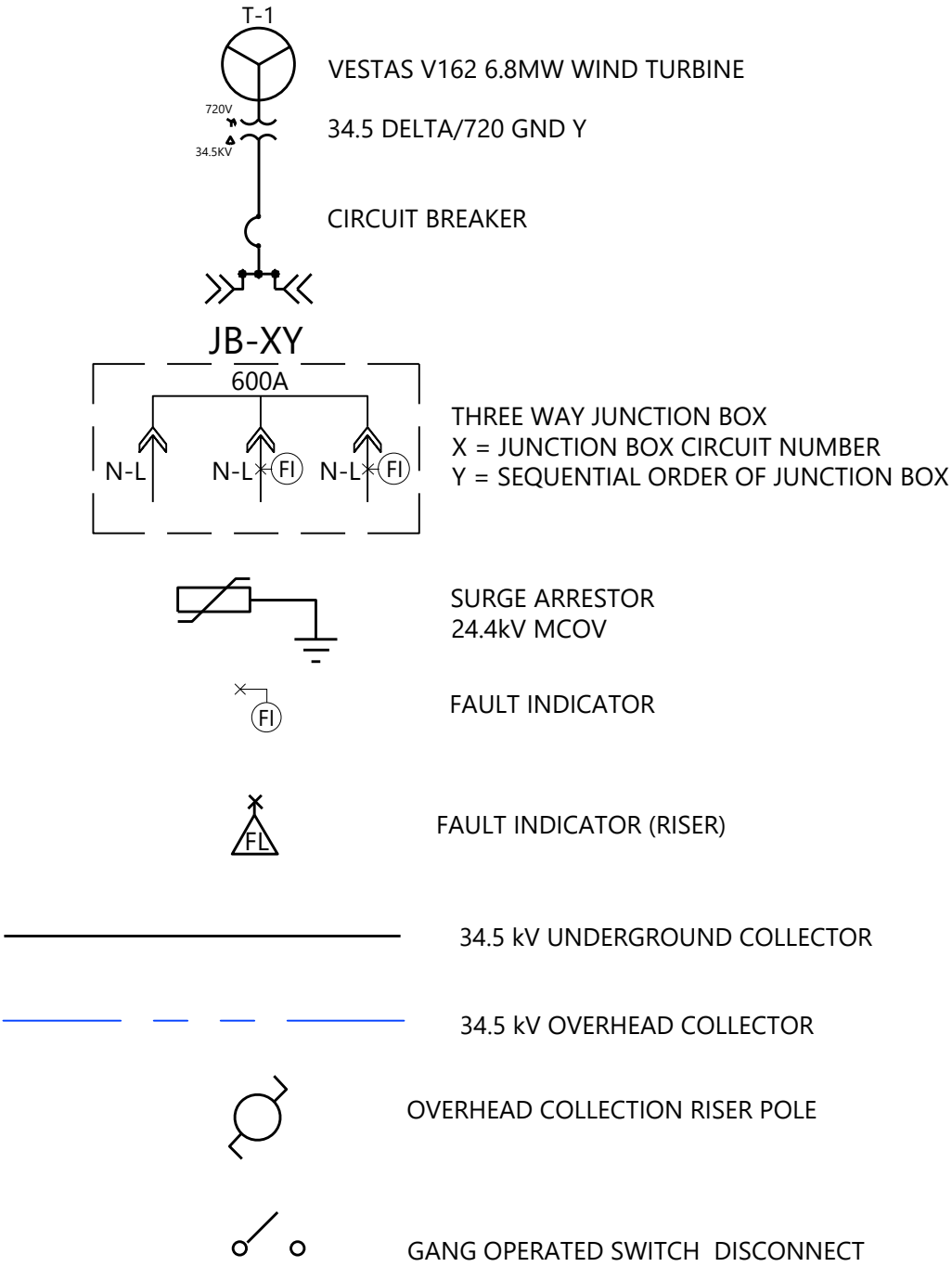


MVAC WIRING SCHEDULE												
CIRCUIT	CONDUCTOR/LOCATION CODE	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	RATED Vac (kV)	Iac (A)	LENGTH (FT)	CONDUCTOR SIZE	CONDUCTOR MATERIAL	# OF PARALLEL CIRCUITS	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR MATERIAL	CONDUCTOR SPECIFICS
6	MV6 SUB-T-19	SUB	T-19	34.5	281.44	25,404	500	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100% Insulation, Type MV-105, 9x#16 CN, XLPE
	MV6 T-19-T-21	T-19	T-21	34.5	140.72	2,087	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100% Insulation, Type MV-105, 11x#16 CN, XLPE

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LEGEND



PREPARED FOR:

Agricola Wind LLC

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Agricola Wind Project

Cayuga County, New York

MV Collection Single
Line Diagrams

NOT FOR CONSTRUCTION

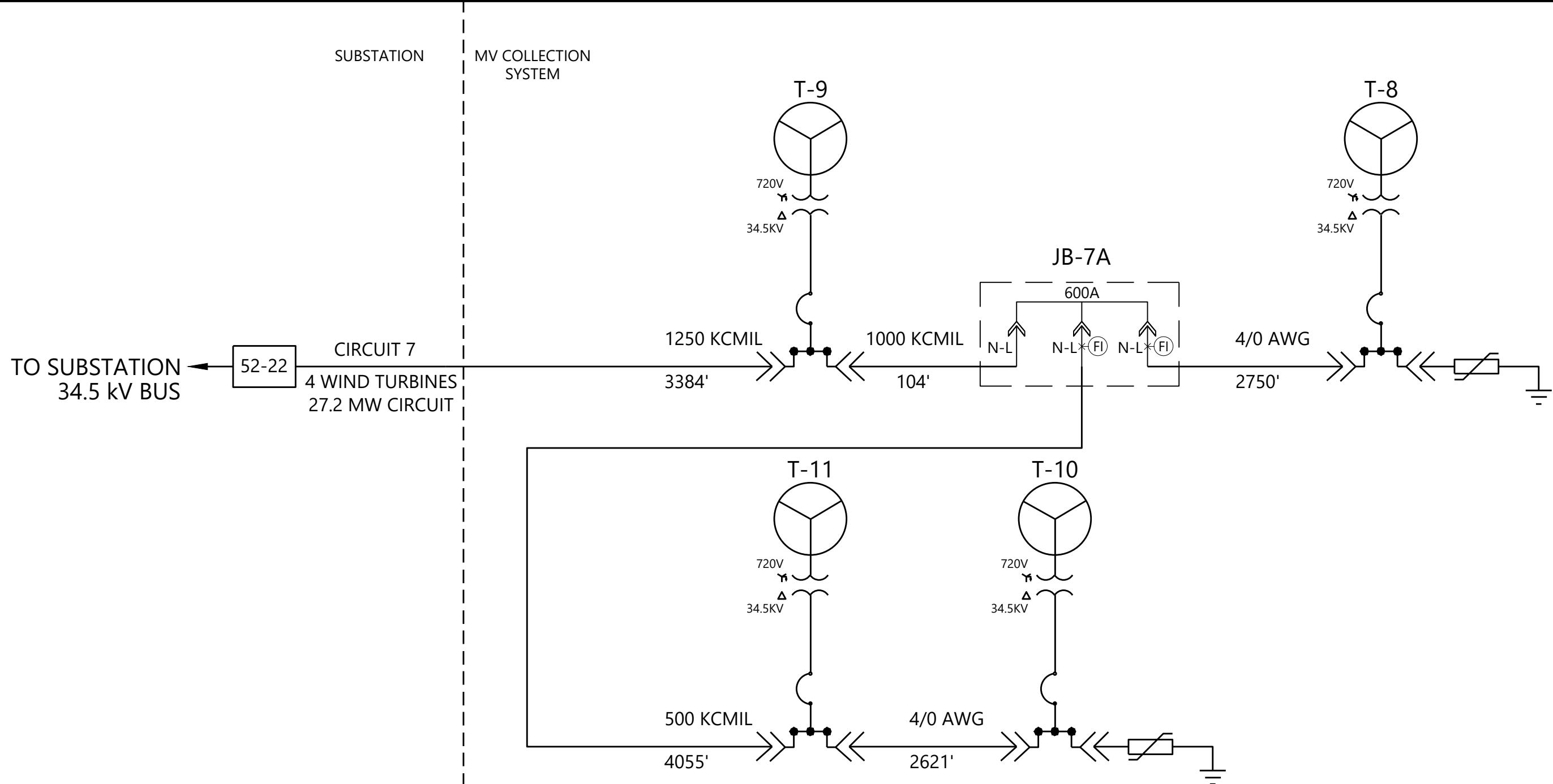
DATE: 10/4/2024

SHEET: E1302

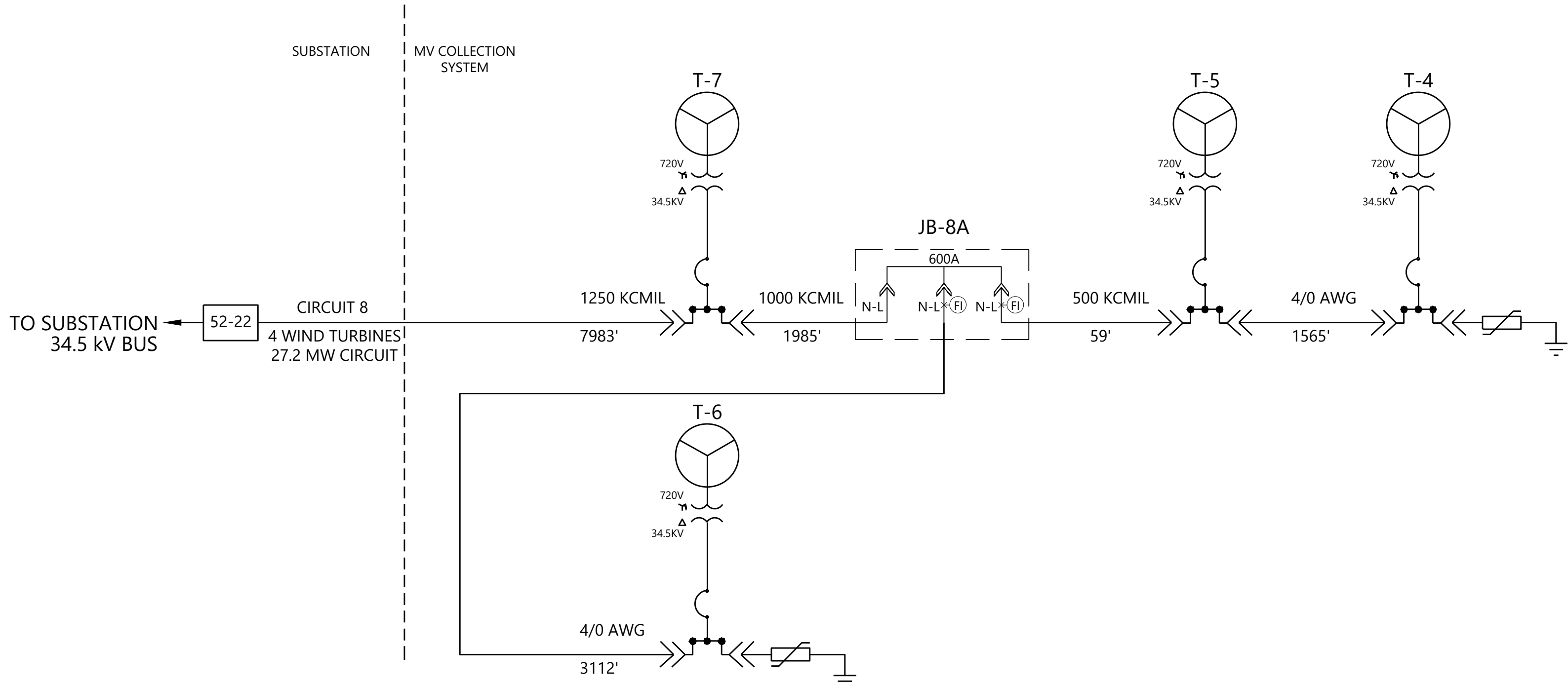
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9/10/2024 17:01 CAD Electrical/002451720 - E1303 MV Collection.dwg 10/10/2024 3:18 MW Sam Kefauver



MVAC WIRING SCHEDULE												
CIRCUIT	CONDUCTOR/LOCATION CODE	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	RATED Vac (kV)	Iac (A)	LENGTH (FT)	CONDUCTOR SIZE	CONDUCTOR MATERIAL	# OF PARALLEL CIRCUITS	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR MATERIAL	CONDUCTOR SPECIFICS
7	MV7.SUB-T-9	SUB	T-9	34.5	562.89	3,384'	1250	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 18x#16 CN, XLPE
	MV7.T-9-JB-7A	T-9	JB-7A	34.5	422.16	104'	1000	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 15x#16 CN, XLPE
	MV7.JB-7A-T-8	JB-7A	T-8	34.5	140.72	2,750'	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE
	MV7.JB-7A-T-11	JB-7A	T-11	34.5	281.44	4,055'	500	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 9x#16 CN, XLPE
	MV7.T-11-T-10	T-11	T-10	34.5	140.72	2,621'	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE

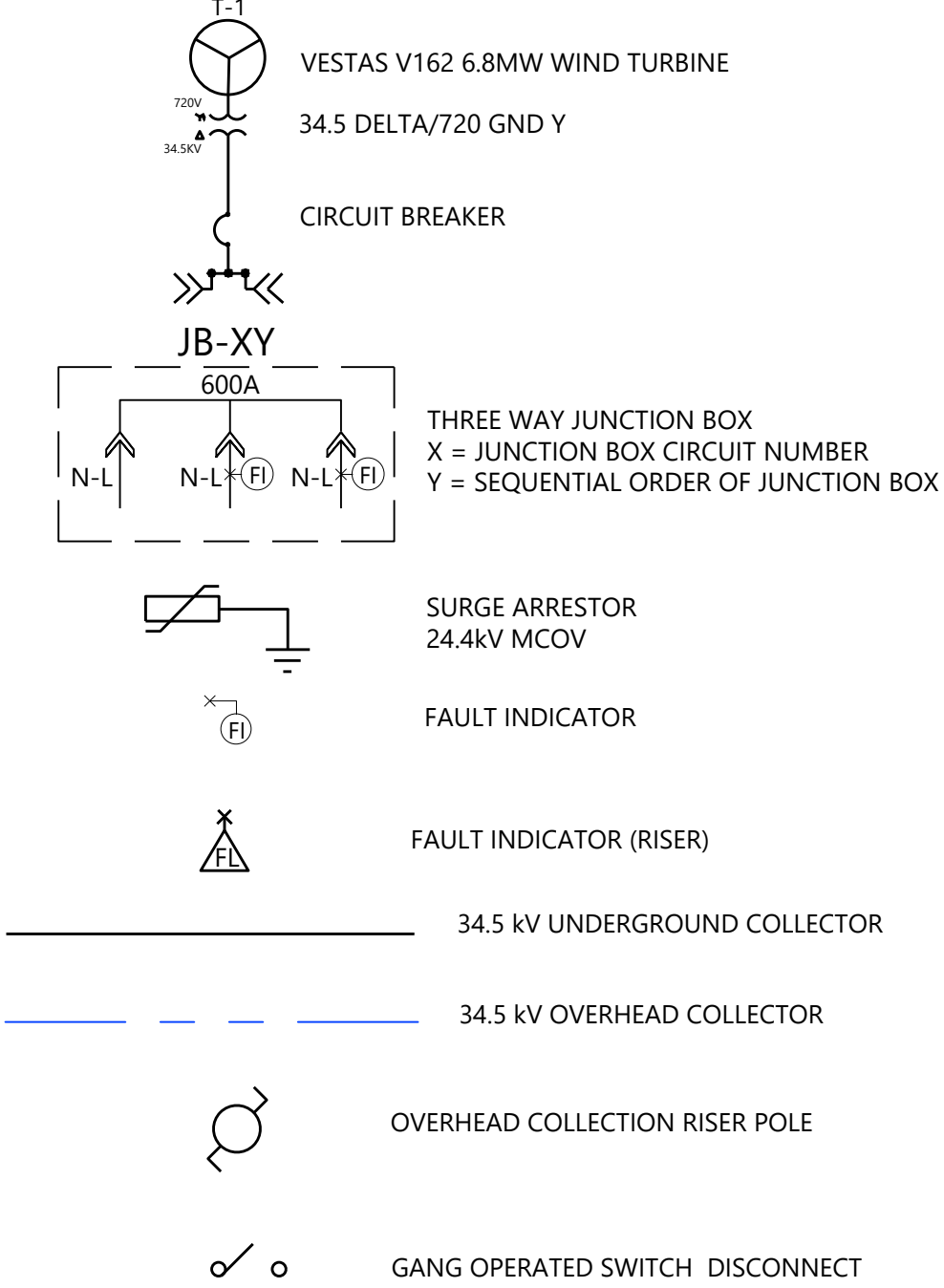


MVAC WIRING SCHEDULE												
CIRCUIT	CONDUCTOR/LOCATION CODE	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	RATED Vac (kV)	Iac (A)	LENGTH (FT)	CONDUCTOR SIZE	CONDUCTOR MATERIAL	# OF PARALLEL CIRCUITS	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR MATERIAL	CONDUCTOR SPECIFICS
8	MV8.SUB-T-7	SUB	T-7	34.5	562.89	7,983'	1250	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 18x#16 CN, XLPE
	MV8.T-7-JB-8A	T-7	JB-8A	34.5	422.16	1,985'	1000	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 15x#16 CN, XLPE
	MV8.JB-8A-T-5	JB-8A	T-5	34.5	281.44	59'	500	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 9x#16 CN, XLPE
	MV8.T-5-T-4	T-5	T-4	34.5	140.72	1,565'	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE
	MV8.JB-8A-T-6	JB-8A	T-6	34.5	140.72	3,112'	4/0	AL	1	1-7#8	CCS(40%)	35KV, 1/C, Triplex, 100 % Insulation, Type MV-105, 11x#16 CN, XLPE

GENERAL NOTES

1. WIND TURBINE GENERATORS DESIGNED AND ASSEMBLED BY OTHERS AND SHOWN FOR REFERENCE ONLY. WESTWOOD PROFESSIONAL SERVICES NOT RESPONSIBLE FOR WIND TURBINE GENERATOR DESIGN CONFORMING TO NEC OR ANY OTHER APPLICABLE LOCAL, STATE OR NATIONAL RECOGNIZED CODES OR REGULATIONS.
2. PROVIDE EXTERNAL SURGE ARRESTERS AT END-OF-LINE XFMR BUSHINGS.
3. INSTALL ALL EQUIPMENT AND WIRING IN ACCORDANCE WITH THE NEC AND NESC.
4. ABOVE-GRADE JUNCTION BOXES TO BE INSTALLED AS NECESSARY WHERE RUN LENGTHS EXCEED AVAILABLE REEL LENGTHS.
5. DISTANCES SHOWN REFLECT LINEAR 2D DISTANCES ALONG PLANNED COLLECTION ROUTE BETWEEN TURBINES. A TERMINATION LENGTH OF 50' AT EACH END IS RECOMMENDED TO ENSURE ADEQUATE CABLE AT PROCUREMENT STAGE. CONTRACTOR SHOULD APPLY ADDITIONAL FACTOR TO ACCOUNT FOR WASTE, DEVIATIONS, AND VERTICAL RISE. FINAL INSTALLATION SHALL INCLUDE ENOUGH SPARE CABLE FOR 2 ADDITIONAL TERMINATIONS.
6. 90% BACKFILL COMPACTION IS TO BE USED UNLESS OTHERWISE NOTED.
7. GROUND CONDUCTOR TO BE RUN WITH ALL MV CABLES, 7#8 CCS (40% CONDUCTIVITY).
8. CONCENTRIC NEUTRALS SHALL BE BONDED TO GROUND AT ALL TERMINATIONS AND AT SPLICE LOCATIONS.
9. DESIGN BASIS FOR TRENCH BACKFILL: NATIVE SOIL MAXIMUM RHO VALUE OF 150C-CM/W AT 2-3% MOISTURE WHEN COMPACTED TO 90% MAXIMUM DRY DENSITY.
10. ANY IMPORTED BACKFILL, INCLUDING CABLE BEDDING/PADDING SHALL BE TESTED AND A THERMAL RESISTIVITY DETERMINATION BE PROVIDED TO EOR FOR APPROVAL
11. OVERHEAD COLLECTION DETAILED DESIGN TO BE PROVIDED IN SEPARATE DRAWING PACKAGE.

LEGEND



PREPARED FOR:

Agricola Wind LLC

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	03/15/2024	ISSUED FOR 30% DESIGN REVIEW	MR	SK	DS
B	10/4/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

Agricola Wind
Project

Cayuga County, New York

MV Collection Single
Line Diagrams

NOT FOR CONSTRUCTION

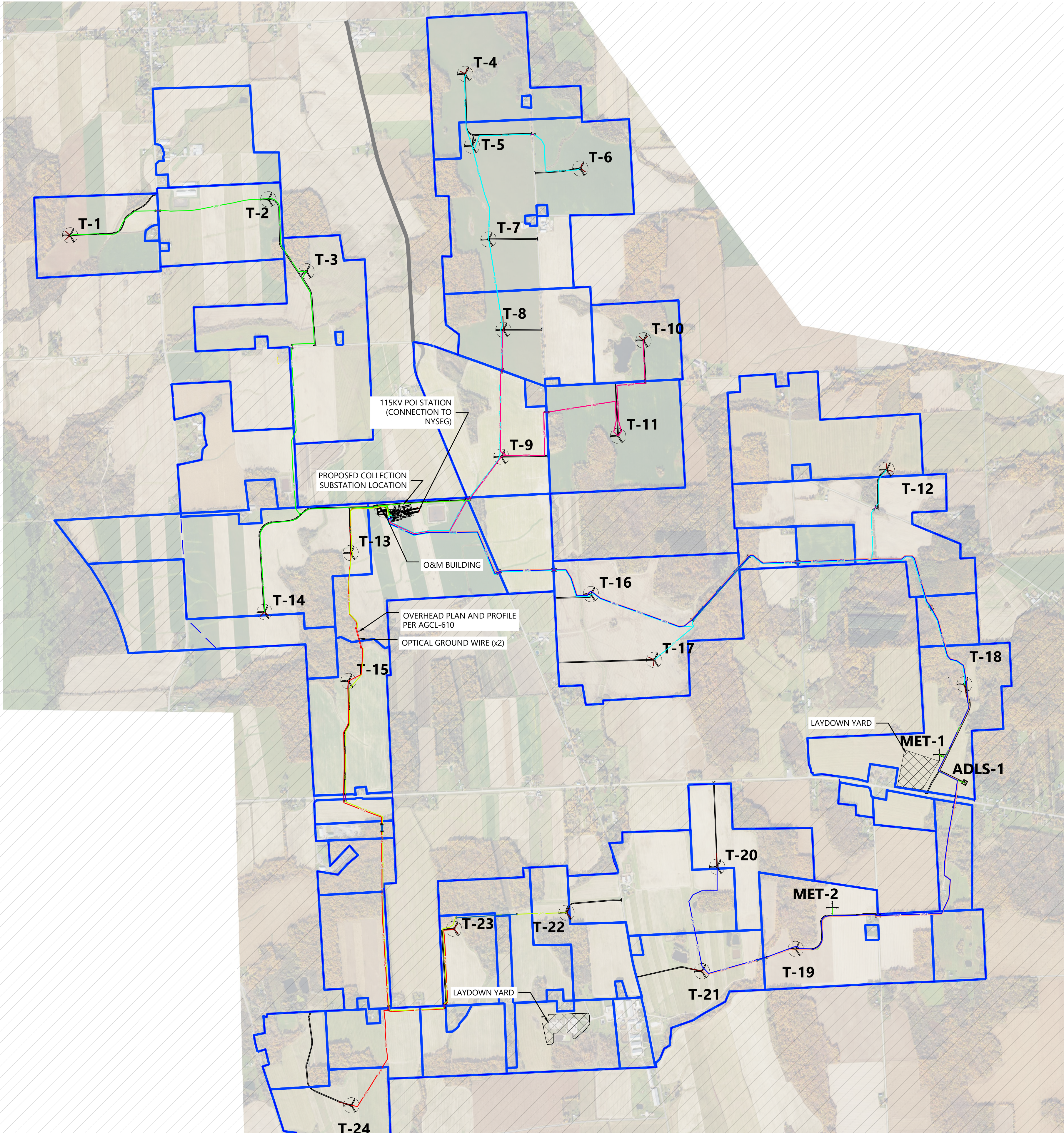
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LEGEND:

- T-#** WIND TURBINE
- MET-#** MET TOWER LOCATION
- ADLS-#** ADLS TOWER
- JB-#X** JUNCTION BOX
- UNDERGROUND FIBER OPTIC CIRCUIT 1
- UNDERGROUND FIBER OPTIC CIRCUIT 2
- UNDERGROUND FIBER OPTIC CIRCUIT 3
- UNDERGROUND FIBER OPTIC CIRCUIT 4
- UNDERGROUND FIBER OPTIC CIRCUIT 5
- UNDERGROUND FIBER OPTIC CIRCUIT 6
- UNDERGROUND FIBER OPTIC CIRCUIT 7
- UNDERGROUND FIBER OPTIC CIRCUIT 8
- OVERHEAD OPTICAL GROUND WIRE
- UNDERGROUND LVAC WIRE
- WETLAND CABLE CROSSING POINT
- ROAD CABLE CROSSING POINT
- DBX-XX CROSSING ID CALLOUT
- PROPOSED ACCESS ROAD
- PROPOSED LAYDOWN YARD
- OVERALL PROJECT BOUNDARY

Westwood
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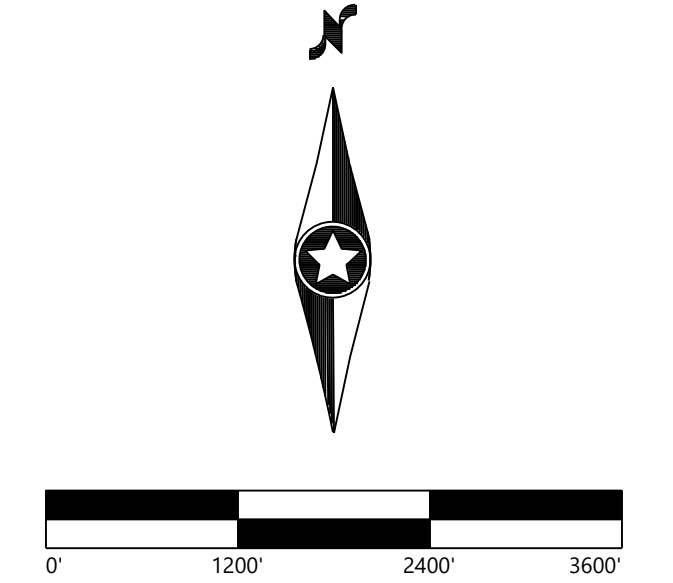
Andrew Szabo

PREPARED FOR:

Agricola Wind LLC

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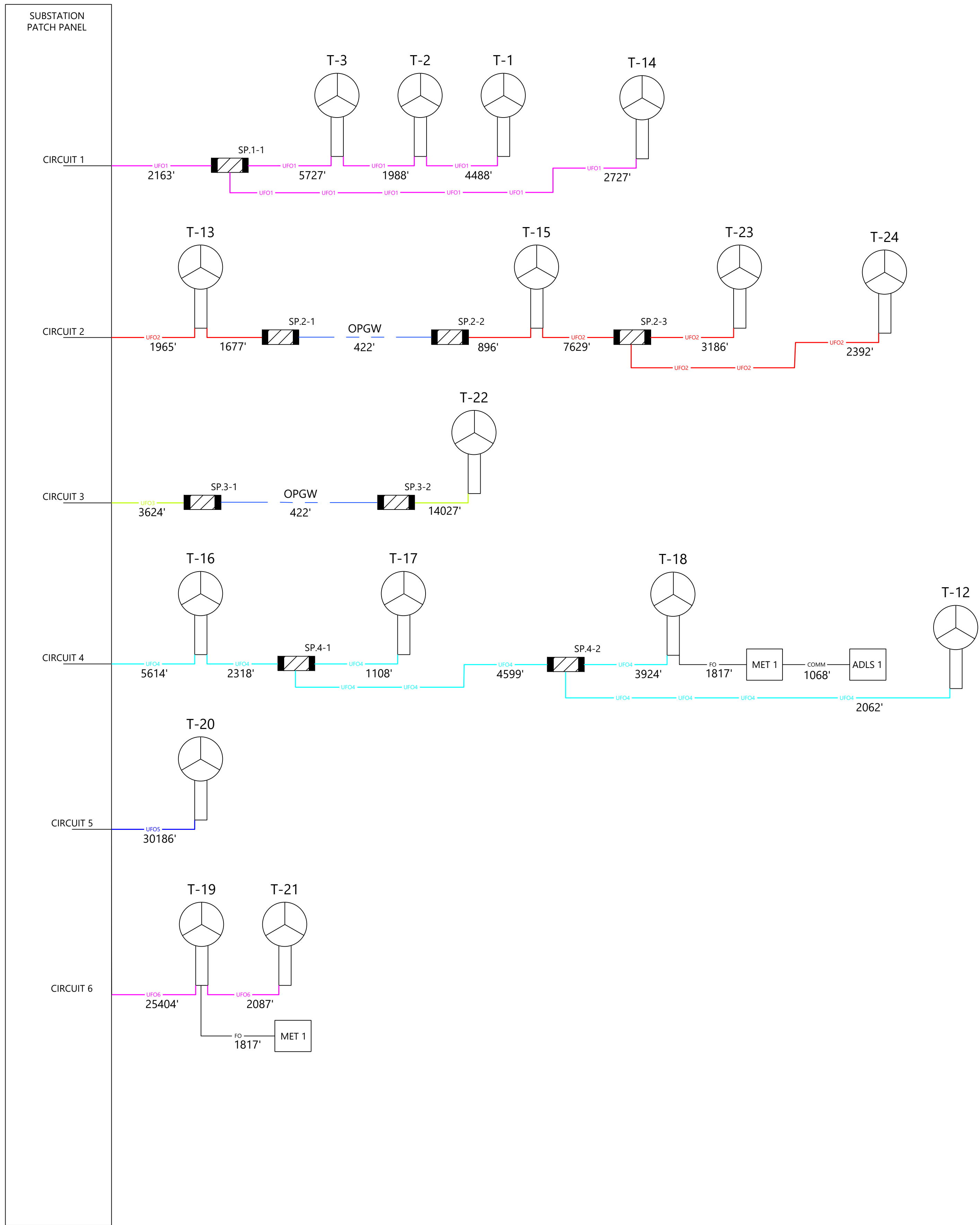
Cayuga County, New York

Overall
Communication Site
Plan

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DATE: 10/4/2024 REV:
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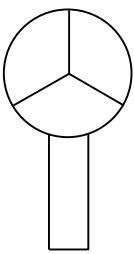
\\002617101-CAD-Electrical\02617101-E6200-Fiber Optic Single Line Diagram.dwg 10/4/2024 2:19 PM Sean Kennedy



NOTES

- OPGW SPEC TBD. MINIMUM 12-STRAND SINGLE MODE. MUST HAVE I^2T RATING SUFFICIENT FOR AVAILABLE GROUND FAULT CURRENT FOR MAXIMUM CLEARING TIME.
- FIBER HANDHOLE LOCATED ADJACENT TO JUNCTION BOX.
- ROUTE FIBER OPTIC CABLE IN SAME TRENCH AS MVAC WIRING WHERE AVAILABLE FOR COMMUNICATIONS AND MONITORING SITE PLANS E1000 THROUGH E1116 FOR ROUTING
- FIBER OPTIC COMMUNICATION CABLE TO BE 9/125 UM SINGLE MODE, 12-STRAND.

LEGEND

-  VESTAS V162 6.8 MW WTG
-  UFO1 UNDERGROUND FIBER OPTIC CIRCUIT 1
-  UFO2 UNDERGROUND FIBER OPTIC CIRCUIT 2
-  UFO3 UNDERGROUND FIBER OPTIC CIRCUIT 3
-  UFO4 UNDERGROUND FIBER OPTIC CIRCUIT 4
-  UFO5 UNDERGROUND FIBER OPTIC CIRCUIT 5
-  UFO6 UNDERGROUND FIBER OPTIC CIRCUIT 6
-  UFO7 UNDERGROUND FIBER OPTIC CIRCUIT 7
-  UFO8 UNDERGROUND FIBER OPTIC CIRCUIT 8
-  FO MET/ADLS UNDERGROUND FIBER OPTIC CABLE
-  SP-#X FIBER OPTIC SPLICE BOX
-  OPTICAL GROUND WIRE (OPGW)



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Agricola Wind Project

Cayuga County, New York

Fiber Single Line
Diagram

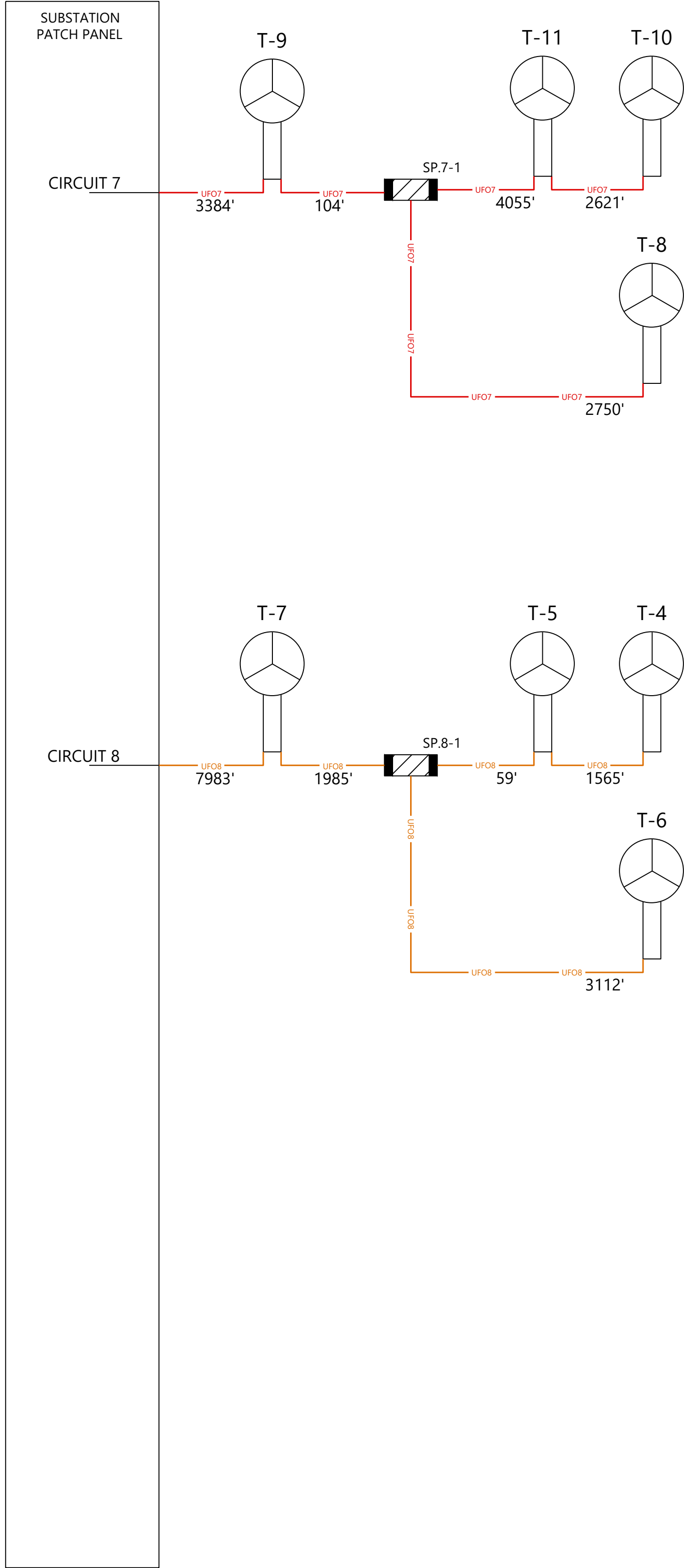
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DATE: 10/4/2024

SHEET: E6200

REV: B

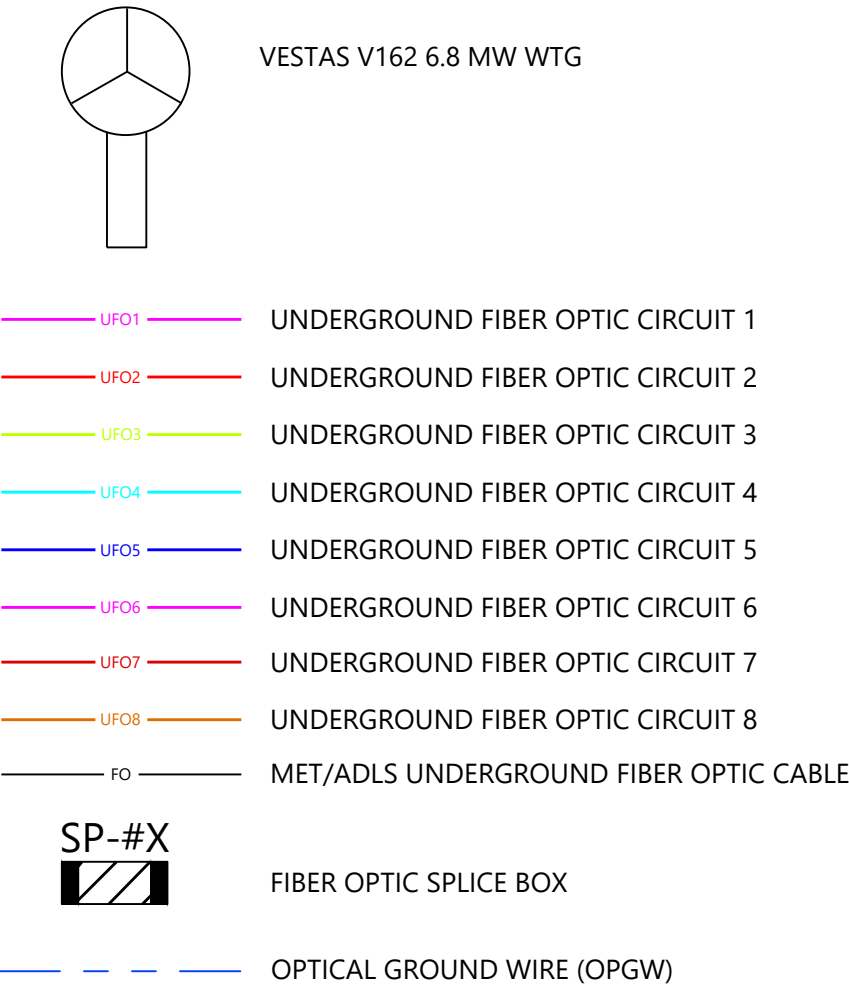
\\002617.01 - CAD - Electrical\02617.01 - E6201 Fiber Optic Single Line Diagram.dwg 10/02/2024 3:19 PM Sean Kennedy



NOTES

1. OPGW SPEC TBD. MINIMUM 12-STRAND SINGLE MODE. MUST HAVE 1²T RATING SUFFICIENT FOR AVAILABLE GROUND FAULT CURRENT FOR MAXIMUM CLEARING TIME.
2. FIBER HANDHOLE LOCATED ADJACENT TO JUNCTION BOX.
3. ROUTE FIBER OPTIC CABLE IN SAME TRENCH AS MVAC WIRING WHERE AVAILABLE FOR COMMUNICATIONS AND MONITORING SITE PLANS E1000 THROUGH E1116 FOR ROUTING
4. FIBER OPTIC COMMUNICATION CABLE TO BE 9/125 UM SINGLE MODE, 12-STRAND.

LEGEND



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Agricola Wind
Project

Cayuga County, New York

Fiber Single Line
Diagram

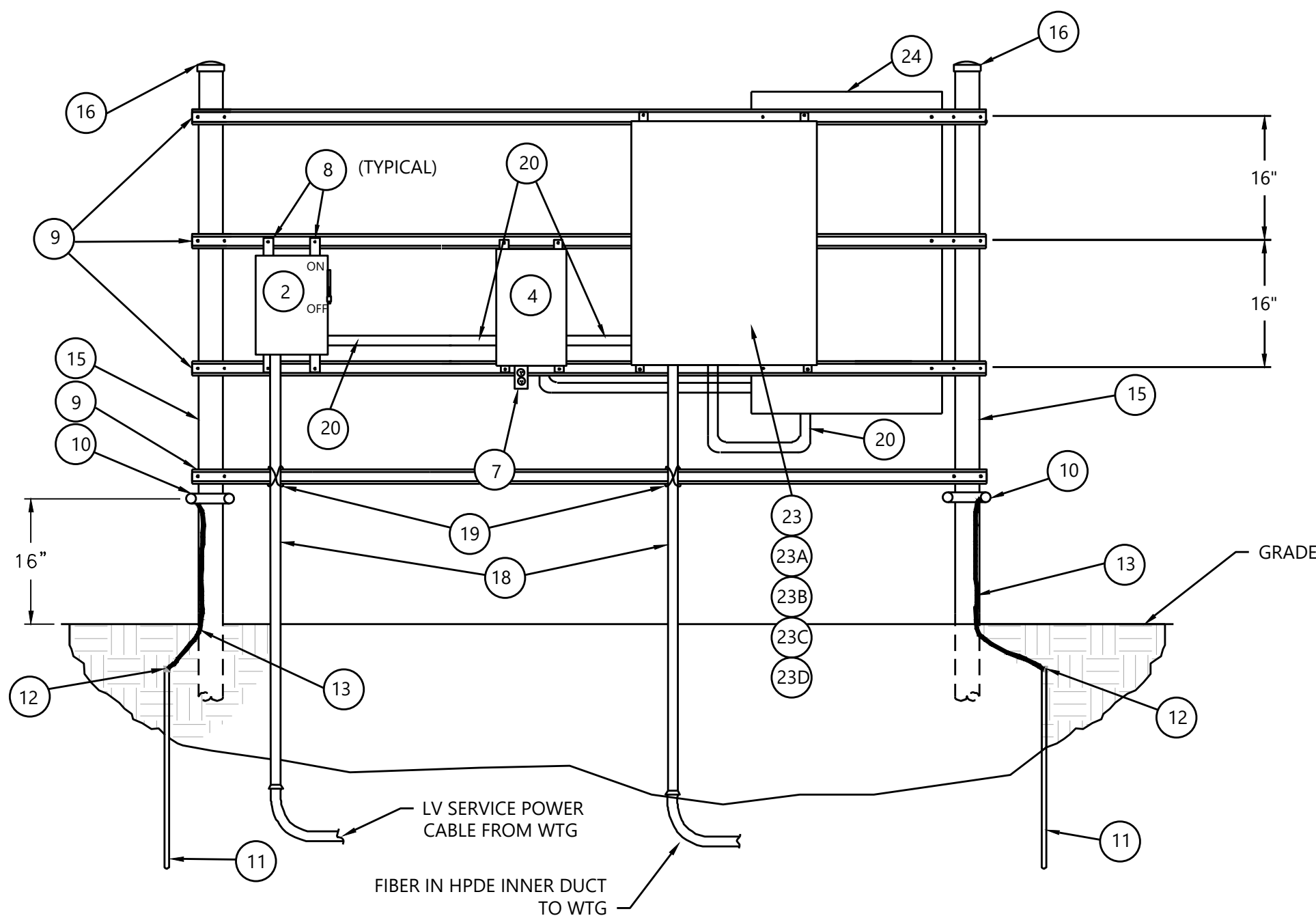
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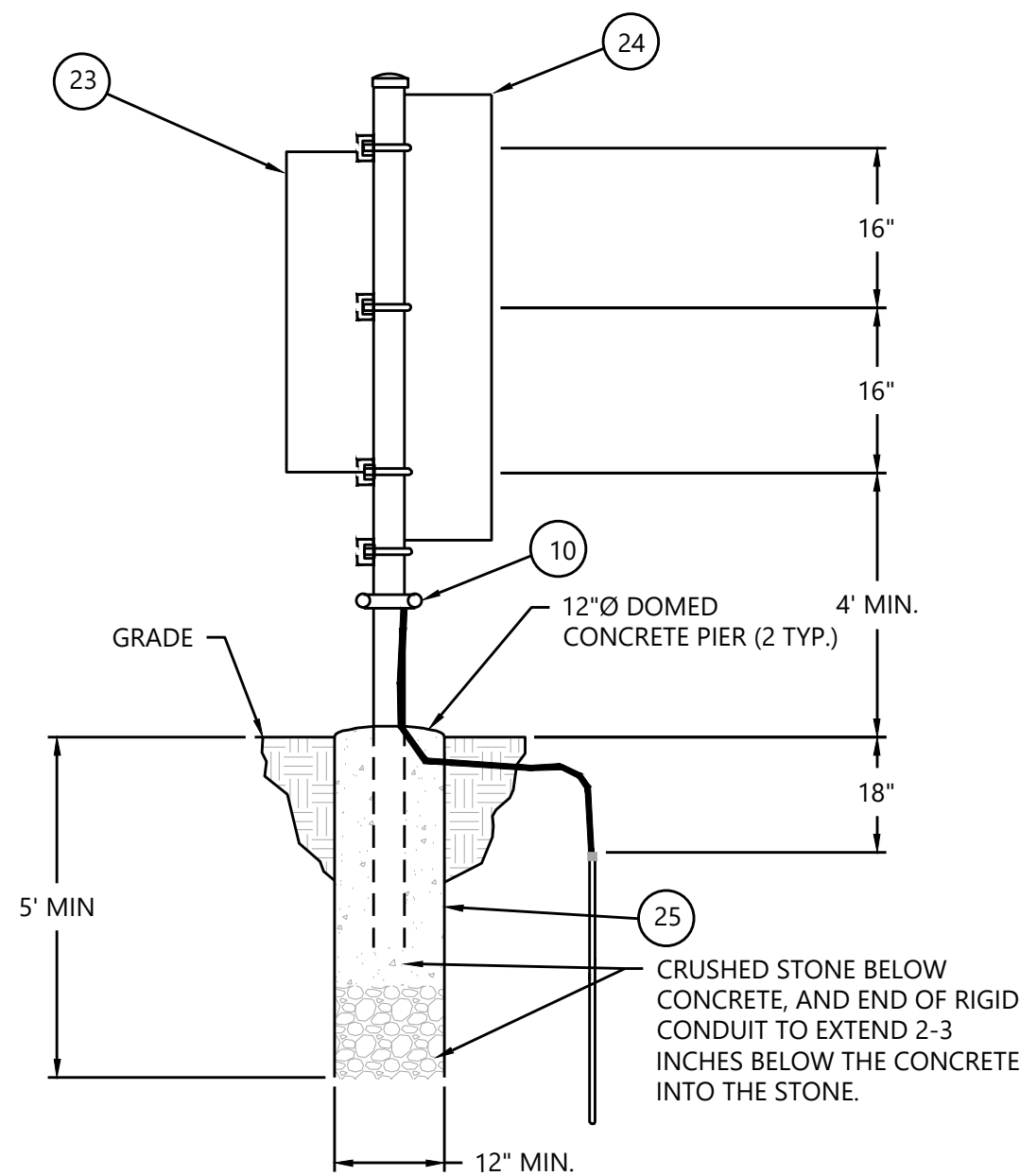
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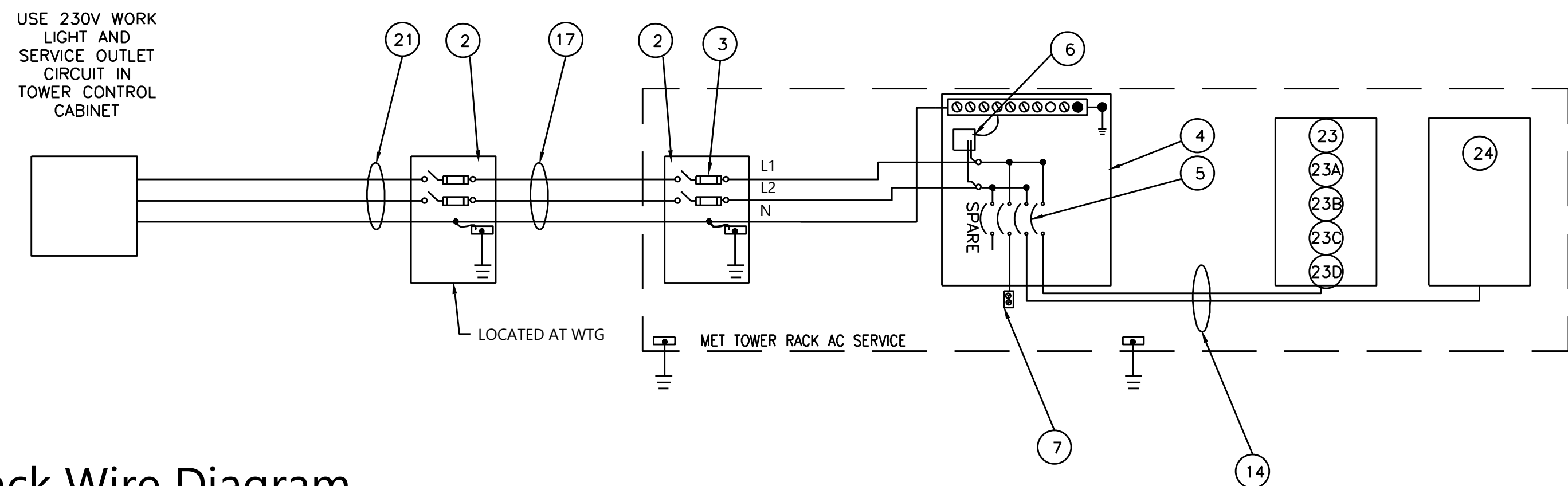
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1 MET Rack - Front Elevation
NTS



2 MET Rack - Side Elevation
NTS



3 MET Rack Wire Diagram
NTS

NOTES:

- EQUIPMENT MAY BE LOCATED ON THE MET TOWER BEHIND THE MET TOWER RACK AND USE ABOVE GRADE CONDUIT TO MAKE CONNECTIONS AS OPPOSED TO THE BELOW GRADE CONDUIT SHOWN. CONTRACTOR TO DETERMINE BEST SOLUTION ON THE LOCATION.
- PER MANUFACTURER DOCUMENTATION CONNECTIONS ARE REQUIRED BETWEEN TERMINALS H3 TO H6 AND X2 TO X3 FOR PROPER OPERATION AS SHOWN BELOW.
- ENSURE ALL ENCLOSURES ONLY HAVE ONE GROUND CONNECTION AND ARE PROPERLY GROUNDED PER THE NEC.

MATERIALS LIST				
ITEM	QTY	UOM	DESCRIPTION	MANF. PART#
1	1	EA	5KVA TRANSFORMER 400V-110/220V 1 PHASE	SQUARE D 5S67F
2	2	EA	SAFETY SWITCH , 600V, 30A 1-POLE, FUSIBLE, HEAVY DUTY, 200 KA	SQUARE D DD221NRB
3	1	EA	FRS-R-15 AT MET SAFETY SWITCH	BUSSMAN FRS-R-15
4	1	EA	120/240V AC LOADCENTER 70A W/SUBPANEL, 45P, NEMA 3R ENCLOSURE	SQUARE D QO612L100RB
5	4	EA	MINIATURE CIRCUIT BREAKER STANDARD, 20A, 1-POLE, 120/240 VAC, 10KA	SQUARE D QO120
6	1	EA	SURGE ARRESTOR	SQUARE D SDSA1175
7	1	EA	WEATHER PROOF GFCI RECEPTACLE, DUPLEX 20A WITH IN USE COVER	-
8	8	FT	ENCLOSURE MOUNTING, 4 BRKT KIT FOR STRUT SYSTEM	-
9	4	EA	1-5/8" x 1-5/8", 12 GAUGE, SLOTTED, 20'	-
10	2	EA	BRONZE, TINNED POST CLAMP, 3 IN., #2 STR. SOL	-
11	2	EA	GROUND ROD, COPPPER CLAD STEEL 3/4"x10'	ERICO 613400UPC
12	2	EA	COMPRESSION CONNECTOR, 3/4" CCS ROD TO #2 AWG BARE COPPER	BURNDY YCHC34TC2
13	20	FT	CONDUCTOR, #2 CU BARE 19 STR S.D.	-
14	20	FT	CONDUCTOR, #12 AWG CU, XHHW-2	-
15	2	EA	PIPE, GALVANIZED STEEL, 3", 10 FT LONG	-
16	2	EA	STEEL PIPE CAP, RIGID, 3" THREADED	-
17	1050	FT	CABLE, CU 3/C #6 AWG, 600V	-
18	10	FT	CONDUIT, 2" SCH 80 PVC	CARLON A53CA12
19	A/R	EA	CONDUIT CLAMP, 2" SCH 80 PVC	-
20	10	FT	CONDUIT, 3/4" LIQUID TIGHT	-
21	50	FT	CONDUCTOR, #10 AWG CU, CABLE TRAY RATED	-
22	2	EA	NEUTRAL "DUMMY" FUSE	BUSSMAN NTS-R-60
23	1	EA	FIBER OPTIC ENCLOSURE, NEMA 3R	-
23A	1	EA	PATCH PANEL	CORNING WCH-029
23B	2	EA	CONNECTOR PANELS	CORNING CCH-CP12-59
23C	1	EA	SPLICE TRAY	CORNING M67-110
23D	1	EA	PATCH CORD	SM DUPLEX SC-SC
24	1	EA	DATA LOGGER (BY OTHERS)	-
25	A/R	EA	CONCRETE, MINIMUM 2000 PSI	-
26	6	EA	ONE-HOLE LUGS FOR #6 WIRE	BURNY Y1MRTC



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A	03/15/2024	ISSUED FOR 30% DESIGN REVIEW	MR	SK
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Agricola Wind
Project

Cayuga County, New York

Met Tower Wiring
Diagram

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DATE: 10/4/2024

SHEET: E6400

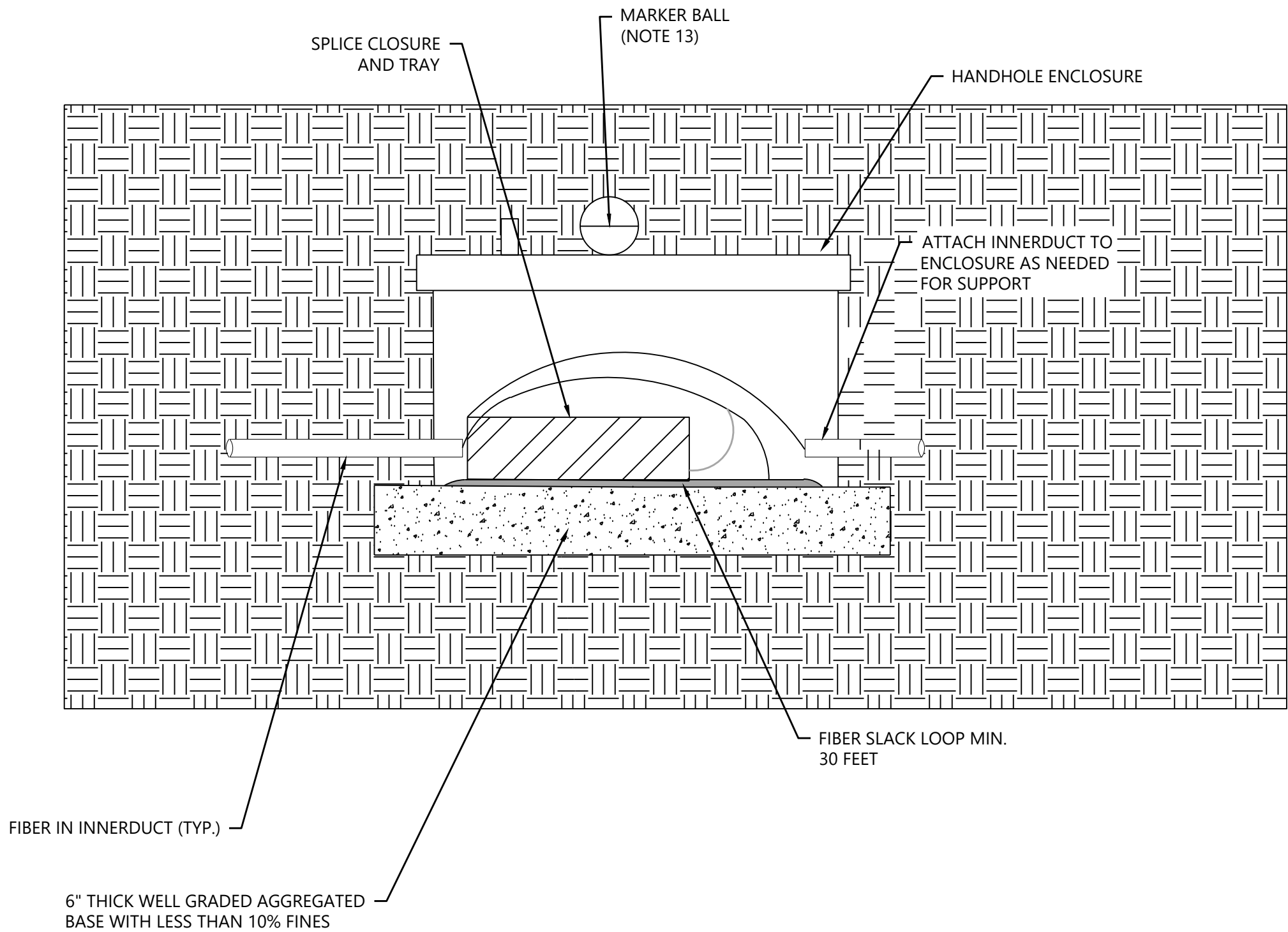
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\\002617.01 - CAD - Electrical\\02617.01 - E6401 Met Tower Wind Diagram.dwg - 10/4/2024 3:19 PM Sean Gering

1

Fiber Handhole/Splice Box

NTS



MATERIALS LIST					
ITEM	QTY	UOM	DESCRIPTION	MANUF. (OR EQUAL)	PART # (OR EQUAL)
1	A/R	EA	FIBER OPTIC SPLICE HANDHOLE ENCLOSURE, 24"X36"X24"	BULK	243624-ACE TIER 22
2	A/R	EA	HANDHOLE ENCLOSURE COVER, 24"X36"	BULK	--
3	A/R	EA	12 FIBER SPLICE ENCLOSURE	FIBERTRONICS	HTB-F01-12
4	A/R	EA	EMS MARKER BALL	3M	80611161144

- NOTES:
1. DETAIL 1, HANDHOLE/SPLICE BOX MAY BE USED AS HANDHOLE OR SPLICE BOX. HANDHOLES TO BE USED ADJACENT TO 3-WAY MEDIUM VOLTAGE SECTIONALIZERS.
 2. PROVIDE 50 FEET TAILS OF FIBER FOR EACH CABLE WHEN USED AS SPLICE BOX.
 3. DO NOT EXCEED THE MINIMUM BEND RADIUS OF 6 INCHES UNDER LOAD AND 4 INCHES WITH NO LOAD.
 4. SIZE OF GROMMETS AND CLOSURE ACCESSORIES TO MEET CABLE SIZE AND QUANTITY.
 5. BRING CABLE INNER DUCT INTO SPLICE BOX 3 INCHES ABOVE GRAVEL FILL.
 6. SEAL ALL CONDUITS WITH FOAM AFTER CABLE INSTALLATION.
 7. FILL BOTTOM OF BOXES WITH 9 INCHES PEA GRAVEL TO PREVENT RODENT ENTRY.
 8. OWNER APPROVAL REQUIRED AT ANY SPLICE LOCATION

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ANDREW N. SZABO

10/04/2024

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LICENSED PROFESSIONAL ENGINEER

Andrew Szabo

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A	03/15/2024	ISSUED FOR 30% DESIGN REVIEW	MR	SK	DS
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Agricola Wind Project

Cayuga County, New York

Fiber Splice Box

NOT FOR CONSTRUCTION

DATE:

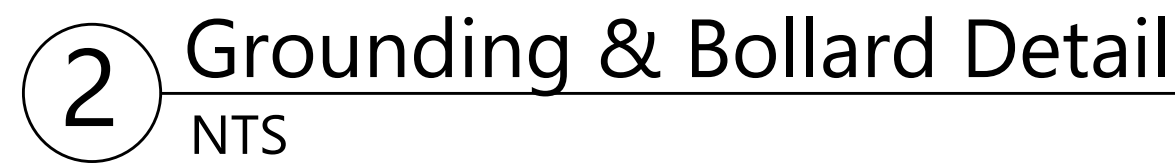
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E6401



NOTES:

1. JUNCTION BOX GROUND RING TO BE 4/0 AWG BARE CU, 18" DEEP AND 42" AWAY FROM ENCLOSURE. PROVIDE (2) TWO GROUND RODS, INSTALL ON OPPOSITE CORNERS OF GROUND RING.
2. CONTRACTOR SHALL SELECT PROPER CABLE BRACKET AND T-BODY SIZE BASED ON CABLE SIZE.
3. ALL CABLES MUST HAVE SUFFICIENT LENGTH TO ENSURE TWO FUTURE TERMINATIONS.
4. WARNING LABEL TO BE SET ON THE FRONT OF CABINET.
5. BOLLARDS ARE TO BE PLACED AT APPROXIMATELY 30 INCHES FROM ALL FOUR EDGES OF JUNCTION BOX.
6. CONDUIT POSITIONING WITHIN BASEMENT TO BE ADJUSTED BY CONTRACTOR AS NEEDED TO SATISFY MINIMUM CONDUCTOR BENDING REQUIREMENTS. IN NO CASE SHALL THE BENDING RADIUS OF THE MEDIUM VOLTAGE CABLE BE LESS THAN 12 TIMES THE CABLE DIAMETER.
7. BOND CONCENTRIC NEUTRAL AND DRAIN WIRE FROM EACH TERMINATION TO GROUND BUS. BOND TRENCH GROUND TO GROUND BUS.
8. REMOVE ALL BURRS AND ROUGH EDGES FROM END OF CONDUITS PRIOR TO PULLING CABLE.
9. CRUSHED ROCK RING LAYER TO BE APPLIED AT SURFACE FOR VEGETATION MANAGEMENT.
10. FIBER HAND HOLE MAY BE INSTALLED WITH TOP AT GRADE, ADJACENT TO JUNCTION BOX. IN SUCH CASES, GROUND RING AND BOLLARD PLACEMENT SHALL BE ADJUSTED AS NECESSARY TO ENCOMPASS HANDHOLE.
11. JUNCTION BOX SHALL NOT BE PLACED DIRECTLY OVER MAIN TRENCH LINE. PLACEMENT SHALL BE OFFSET FROM MAIN TRENCH LINE BY MINIMUM FIVE FEET.
12. FOR 500 KCMIL OR SMALLER CABLE, ESTABLISH SLACK VIA COIL IN THE JUNCTION BOX. FOR CABLE SIZES OVER 500 KCMIL, ESTABLISH SLACK VIA AN S-CURVE.
13. LATCH OF JUNCTION BOX MUST BE AT LEAST 6" ABOVE ROCK.
14. TWO GROUND CLAMPS PER GROUNDED BOLLARD. SPACE AS NEEDED.
15. RUN #2 TINNED COPPER DOWN BOLLARD AND TIE INTO GROUND RING.
16. CABLE CLAMPS FOR USE ON CABLES 500KCMIL AND LARGER.



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Agricola Wind Project

Cayuga County, New York

Sectionalizer Cabinet

NOT FOR CONSTRUCTION

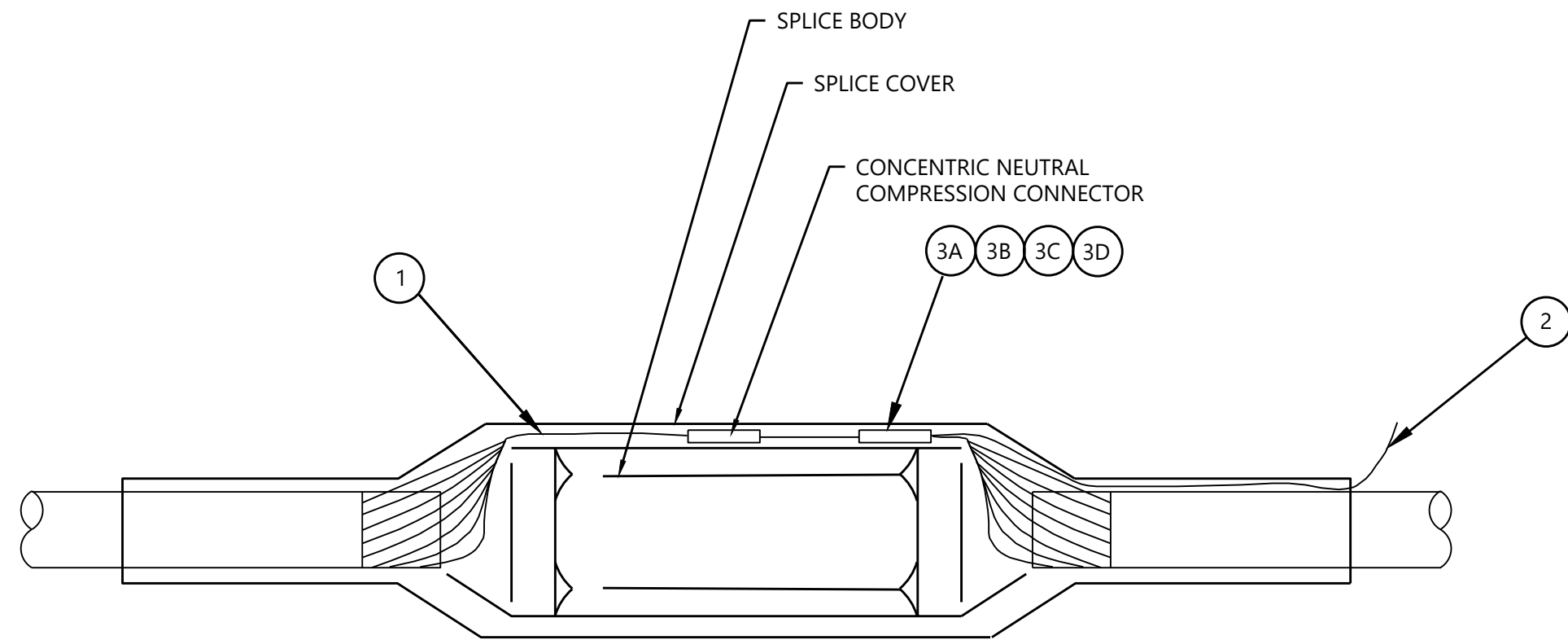
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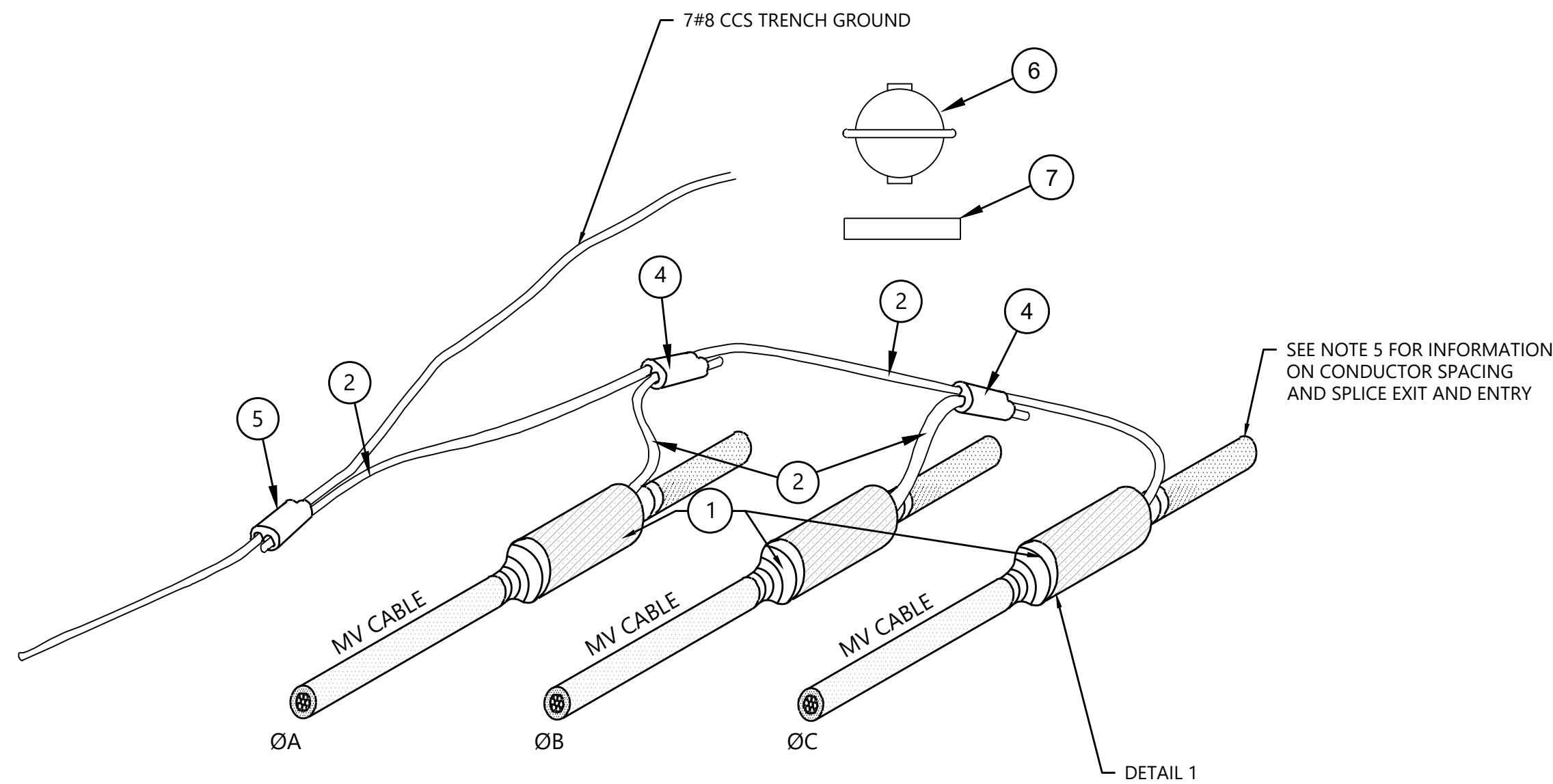
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1 Splice Detail
NTS



2 Splice Arrangement Detail
NTS

NOTES:

1. SPLICE KIT INCLUDES SPLICE BODY, SPLICE COVER AND COMPRESSION CONNECTOR.
2. PERFORM ALL SPLICES USING MANUFACTURER'S INSTRUCTIONS.
3. PLACE LOCATABLE MARKER BALL ABOVE SPLICE AT 24" DEPTH.
4. SPLICE LOCATION TO BE COMPACTED PER GENERAL TRENCH COMPACTION SPEC.
5. CABLES TO BE LAID FLAT WITH 9" SEPARATION AT SPLICE. CABLE SLACK TO BE CREATED IN S CURVES ON BOTH SIDES OF SPLICE BEFORE RETURNING CABLE TO TREFOIL ARRANGEMENT.
6. FIBER OPTIC INNER DUCT SHALL BE PLACED ADJACENT TO SPLICE.
7. ALL SPLICES SHALL BE GPS LOCATED AND BALL-MARKER IDS TO BE PROVIDED FOR EACH LOCATION FOR INCLUSION IN RECORD DRAWINGS.
8. REFERENCE VENDORS AND PART NUMBERS ARE SHOWN. EQUIVALENT PARTS FROM OTHER VENDORS MAY BE SUBMITTED FOR APPROVAL.

ITEM	QTY	UOM	DESCRIPTION	MANF.	PART#
1A	3	EA	SPLICE KIT, CABLE, 4/0 AWG, 35 KV	TE CONNECTIVITY	CSJ-SR-3513M5
1B	3	EA	SPLICE KIT, CABLE, 500 KCMIL, 35 KV	TE CONNECTIVITY	CSJ-SR-3514M8
1C	3	EA	SPLICE KIT, CABLE, 1000 KCMIL, 35 KV	TE CONNECTIVITY	CSJ-SR-3514M9
1D	3	EA	SPLICE KIT, CABLE, 1250 KCMIL, 35 KV	TE CONNECTIVITY	CSJ-SR-3514M10
2	20	FT	CONDUCTOR, 2 AWG, SOLID, CU, BARE	SOUTHWIRE	-
3A	3	EA	COMPRESSION CONNECTOR, CN TO CN - 1250 KCMIL	BURNDY	YGHC26C26CN
3B	3	EA	COMPRESSION CONNECTOR, CN TO CN - 1000 KCMIL	BURNDY	YGHC26C26CN
3C	3	EA	COMPRESSION CONNECTOR, CN TO CN - 500 KCMIL	BURNDY	YGHC26C26CN
3D	3	EA	COMPRESSION CONNECTOR, CN TO CN - 4/0 AWG	BURNDY	YGHC26C26CN
4	2	EA	COMPRESSION CONNECTOR, #2 AWG CU TO #2 AWG CU	BURNDY	YGHC2C2CN
5	1	EA	COMPRESSION CONNECTOR, #2 AWG CU TO 7#8 CCS	BURNDY	YGHC29C26
6	1	EA	EMS MARKER BALL	3M	1401-XR



Andrew Szabo

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REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	03/15/2024	ISSUED FOR 30% DESIGN REVIEW	MR	SK	DS
B	10/4/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

Agricola Wind
Project

Cayuga County, New York

Medium Voltage Splice

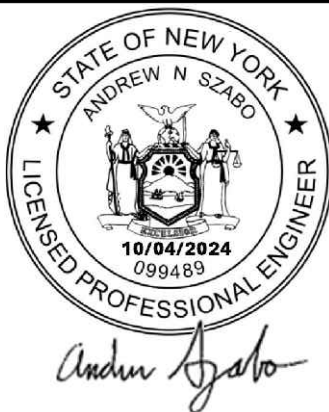
NOT FOR CONSTRUCTION

DATE: 10/4/2024

SHEET: E7001

REV:

B



PREPARED FOR:

Agricola Wind LLC

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
B	08/16/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

Agricola Wind Project

Cayuga County, New York

E7002 - Foundation
Conduit Details

NOT FOR CONSTRUCTION

DATE: 10/4/2024

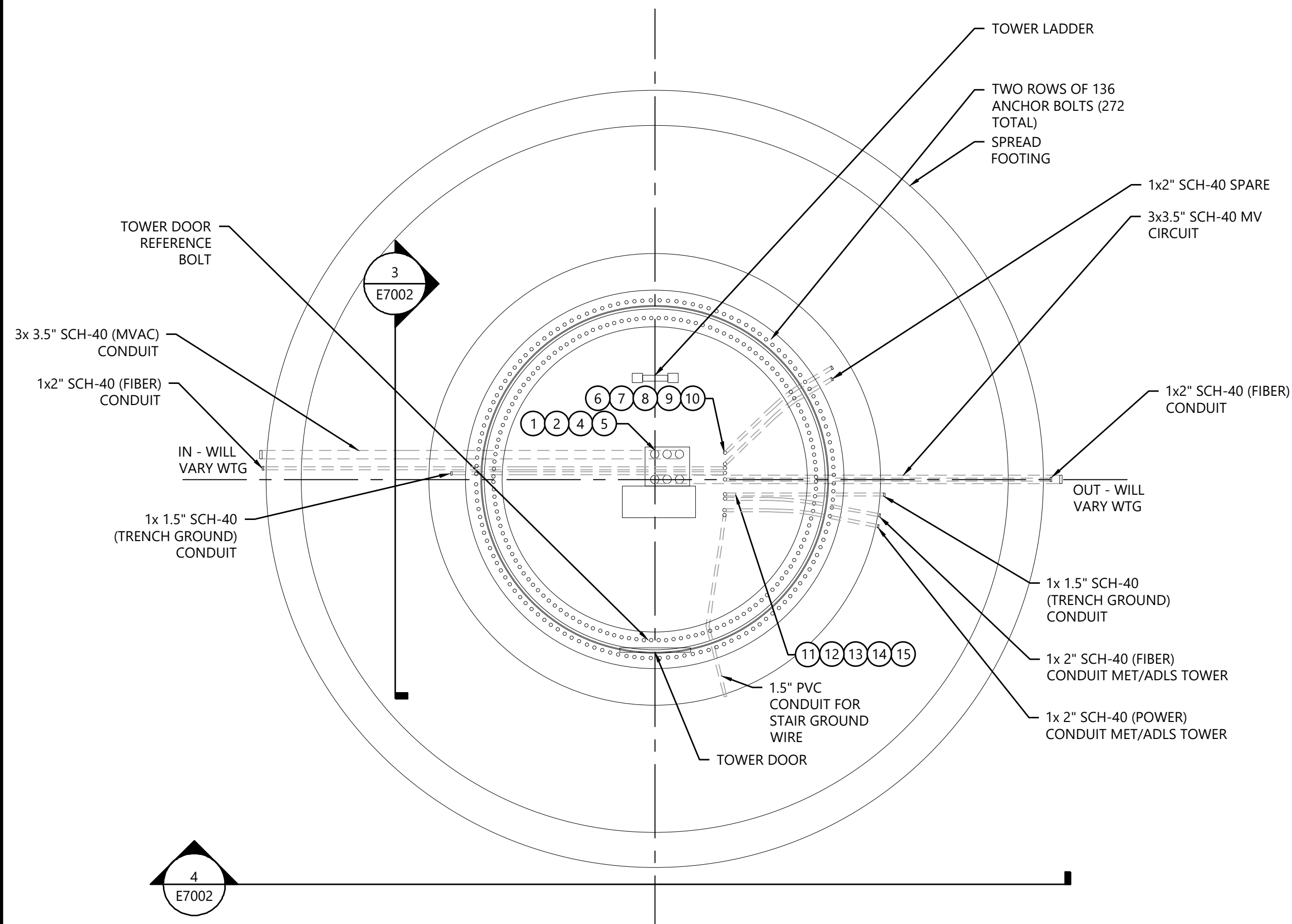
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REV:
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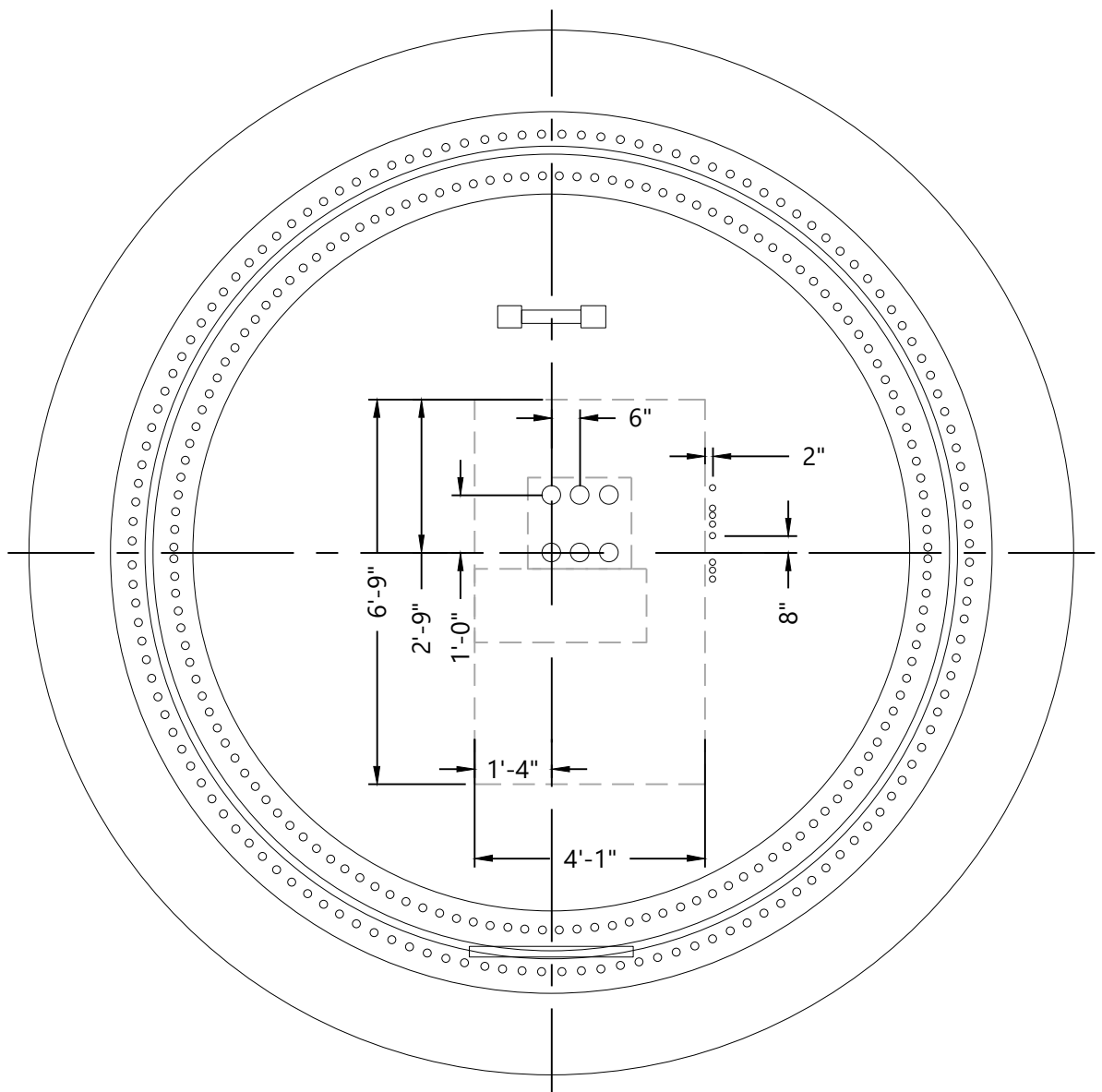
NOTES:

- PEDESTAL DESIGN IS SHOWN FOR PERMIT REFERENCE ONLY AND WILL BE UPDATED ONCE TURBINE FOUNDATIONS HAVE BEEN DESIGNED BY OTHERS.
- REFER TO TURBINE MANUFACTURER INSTALLATION MANUAL FOR ADDITIONAL DETAILS.
- CONDUITS TO BE FIELD ROUTED THROUGH REBAR INTO CONDUIT INSTALLED AREA. CONDUITS SHALL EXTEND 6" ABOVE THE PEDESTAL FLOOR, AND WILL BE FINISHED WITH BELL-ENDS TO ENSURE CABLES ARE NOT DAMAGED DURING THE PULL.
- CONTRACTOR SHALL USE A SEALANT TO SEAL CONDUIT. CAP CONDUIT DURING CONSTRUCTION.
- REBAR SHALL NOT BE PLACED BETWEEN POWER CONDUITS. SEE FOUNDATION DESIGN DRAWINGS FOR STRUCTURAL DETAILS RELATED TO CONDUIT PENETRATION.
- EXACT LOCATION OF CONDUIT STUB-OUTS INSIDE THE TOWER SHALL BE COORDINATED WITH TURBINE VENDOR TO MATCH PLACEMENT OF SWITCHGEAR, GROUNDING BAR, AND FIBER TERMINAL LOCATION.
- CONTRACTOR SHALL OBSERVE CABLE BENDING RADIUS REQUIREMENTS.
- CONDUITS FOR CABLES CLOSEST TO SUBSTATION MUST BE INSTALLED CLOSEST TO THE SWITCHGEAR BUSHINGS.
- CONTRACTOR TO VERIFY CABLE PHASE SEQUENCE IN RELATION TO SWITCHGEAR PHASE SEQUENCE BEFORE INSTALLATION INTO CONDUIT. DIRECTION OF CONDUIT ENTRANCE AND EXIT IS REPRESENTATIVE. CONTRACTOR MAY ADJUST POSITION OF CONDUITS AS DICTATED BY MEDIUM VOLTAGE CABLE TRENCHING PLAN.
- MET TOWER FIBER CONDUIT AND MET TOWER POWER CONDUIT REQUIRED AT T-15 AND T-7. ADD MATERIALS ACCORDINGLY.
- SEE DETAIL 3 FOR CABLES ENTERING AND LEAVING THE FOUNDATION.
- SEE FOUNDATION DRAWINGS FOR FOUNDATION INFORMATION AND DIMENSIONS.
- REFERENCE VENDORS AND PART #'S ARE SHOWN. EQUIVALENT PARTS FROM OTHER VENDORS MAY BE SUBMITTED FOR APPROVAL.

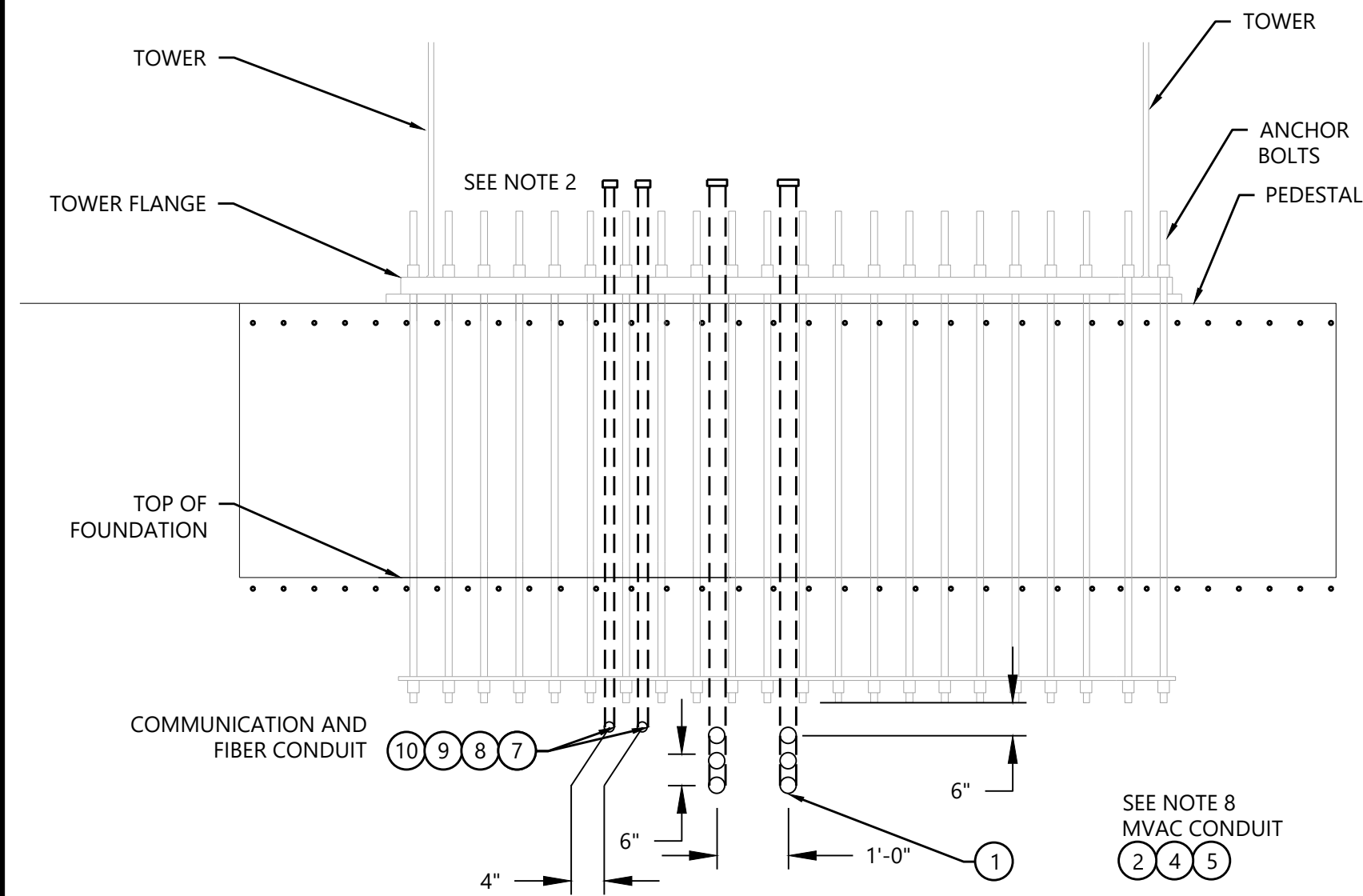
MATERIALS LIST					
ITEM	QTY	UOM	DESCRIPTION	MANUF. OR EQUAL	PART #
1	AR	EA	3.5" PVC CONDUIT, SCH. 40, W. END BELL, 10 FT	CARLON	49014-010
2	AR	EA	3.5" PVC CONDUIT, SCH. 40, 90 DEGREE ELBOW, 48" RADIUS	CARLON	UA9HM
3	AR	EA	3.5" PVC CONDUIT, SCH. 40, 30 DEGREE ELBOW, 48" RADIUS	CARLON	UA6HM
4	AR	EA	3.5" PVC CONDUIT, SCH. 40, END BELL	CARLON	E997M
5	AR	EA	3.5" PVC CONDUIT, SCH. 40, COUPLER	CARLON	E940M
6	AR	EA	2" PVC CONDUIT, SCH. 40, W. END BELL, 10 FT	CARLON	49011-010
7	AR	EA	2" PVC CONDUIT, SCH. 40, 90 DEGREE ELBOW, 24" RADIUS	CARLON	UA9JB
8	AR	EA	2" PVC CONDUIT, SCH. 40, 30 DEGREE ELBOW, 24" RADIUS	CARLON	UA7JB
9	AR	EA	2" PVC CONDUIT, SCH. 40, END BELL	CARLON	E997J
10	AR	EA	2" PVC CONDUIT, SCH. 40, COUPLER	CARLON	E940J
11	AR	EA	1.5" PVC CONDUIT, SCH. 40, W. END BELL, 10 FT	CARLON	49010-010
12	AR	EA	1.5" PVC CONDUIT, SCH. 40, 90 DEGREE ELBOW, 24" RADIUS	CARLON	UA9AHB
13	AR	EA	1.5" PVC CONDUIT, SCH. 40, 30 DEGREE ELBOW, 24" RADIUS	CARLON	UA7HB
14	AR	EA	1.5" PVC CONDUIT, SCH. 40, END BELL	CARLON	E997H
15	AR	EA	1.5" PVC CONDUIT, SCH. 40, COUPLER	CARLON	E940H



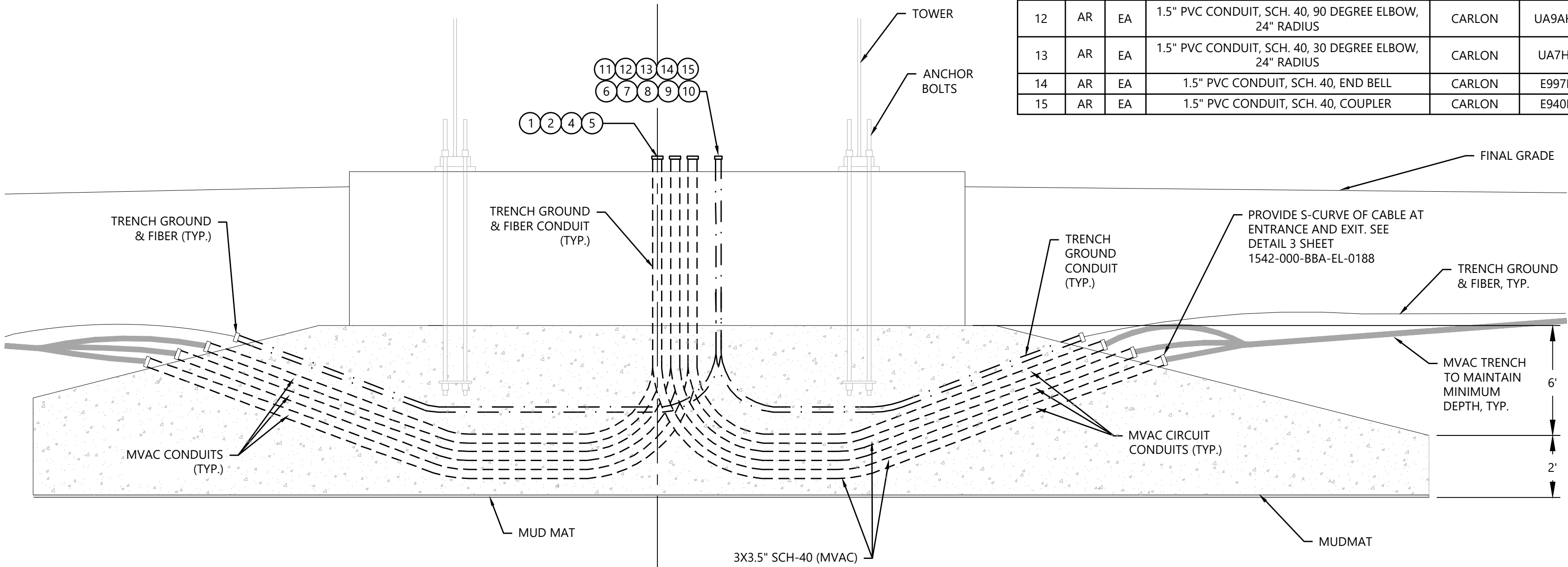
1 Tower Foundation- Top Conduit View
NTS



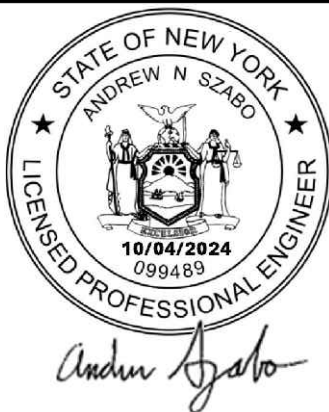
2 Turbine Conduit Entry Detail
NTS



3 Pedestal Conduit Section View
NTS



4 Tower Foundation - Side Conduit View
NTS



PREPARED FOR:

Agricola Wind LLC

REVISIONS:					
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B	08/16/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

NOTES:

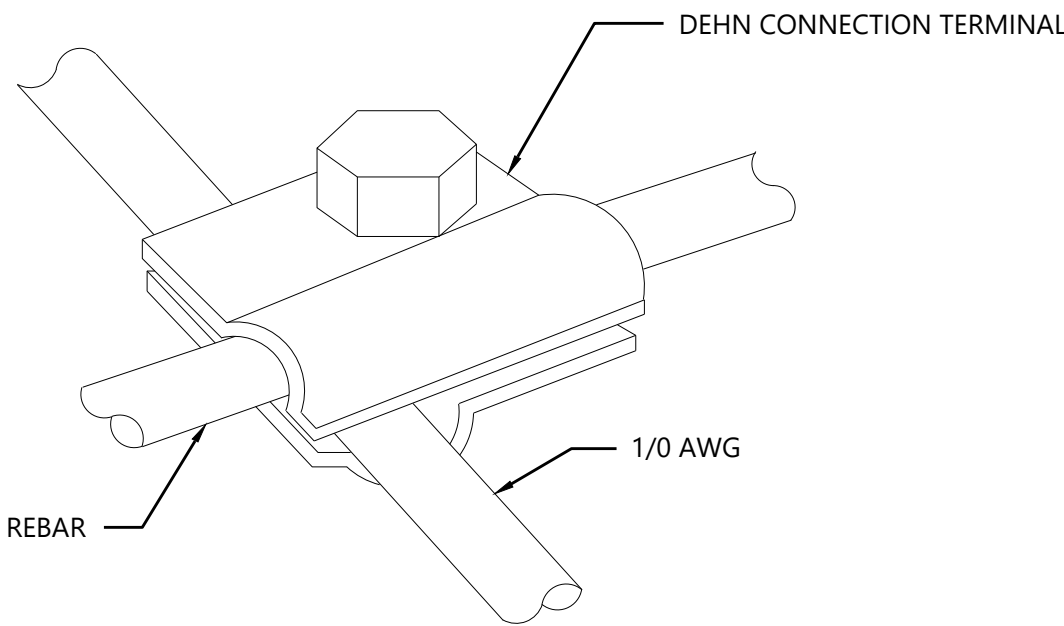
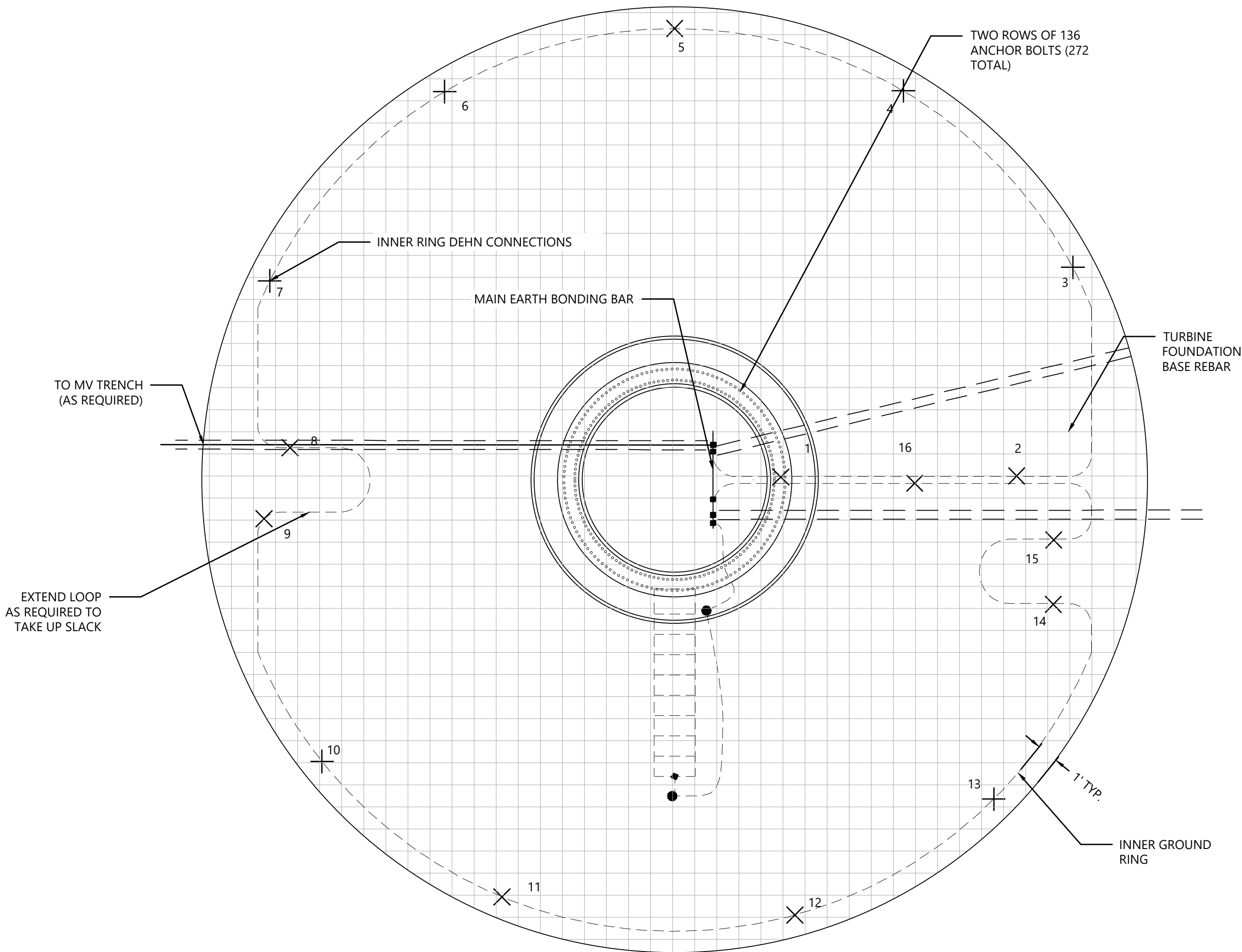
- PEDESTAL DESIGN IS SHOWN FOR PERMIT REFERENCE ONLY AND WILL BE UPDATED ONCE TURBINE FOUNDATIONS HAVE BEEN DESIGNED BY OTHERS.
- GROUND CONDUCTOR WITHIN THE FOUNDATION SHALL BE INSTALLED ALONG THE INNER SIDE OF THE EDGE OF THE REINFORCEMENT STEEL AND SHALL BE BONDED TO THE REBAR CAGE WITH GROUND CLAMPS AT THE 16 LOCATIONS IDENTIFIED. AT ALL OTHER LOCATIONS, GROUND CONDUCTOR SHALL BE SECURED TO THE REAR CAGE WITH STEEL WIRE TIES AT EVERY CROSSING, WHICH SHALL NOT EXCEED SIX INCHES.
- REBAR GROUND CLAMPS SHALL BE LISTED FOR EMBEDMENT IN CONCRETE.
- THE CONNECTION TERMINALS ARE MARKED AND NUMBERED 1 TO 16. STARTED AT ONE END, INSTALL THE CONNECTION TERMINAL EVERY 16.5 FEET ALONG THE GROUNDING CONDUCTOR. INSTALL THE CONNECTION TERMINALS NUMBERED 1 TO 15 FIRST.
- CONNECTION TERMINAL NUMBER 16 MUST BE INSTALLED ALONG THE UPPER LAYER OF THE REINFORCEMENT STEEL.
- ANY EXCESS GROUNDING SHALL NOT BE CUT OFF. IT MUST BE DISTRIBUTED INSIDE THE STEEL REINFORCEMENT SHOWN IN THE DRAWING AS SLACK AND TIED TO ALL STEEL REINFORCEMENT CROSSINGS.
- TWO TRENCH GROUND CONDUCTORS SHALL ENTER THE TURBINE, BOTH TERMINATED ONTO MAIN GROUNDING BAR. GROUNDING CONDUCTORS FROM DOWN-TOWER CABLE NOT SHOWN FOR CLARITY. GROUNDS TO BE CONNECTED TO THE MAIN GROUNDING BUS BAR PER WORK INSTRUCTIONS.
- IF 90 DEGREES OR GREATER SEPARATION OF INCOMING AND OUTGOING MV/TRENCH GROUND CONDUITS CANNOT BE MAINTAINED, A SEPARATE 80 M 7/7 CU EARTHING WIRE EXITING AT MINIMUM 90 DEGREES FROM ONE OF THE MV TRENCH GROUNDS MUST BE INSTALLED AND CONNECTED TO MAIN EARTHING BAR. THIS ADDITIONAL EARTHING WIRE ALSO REQUIRED FOR END OF LINE TURBINES.
- MAIN GROUND BAR TO BE LOCATED AT BASE FRAME OF SWITCHGEAR, PER TURBINE DOCUMENTS.
- GROUND CONDUCTOR WITHIN TOWER BASEMENT SHALL BE BONDED TO BOTH THE MAIN GROUND BUS BAR (AT SWITCHGEAR BASE) AND TRENCH GROUND CONDUCTOR(S), AS SHOWN.
- GROUND LOOP RESISTANCE TO REMOTE EARTH TO BE MEASURED USING A THREE POINT "FALL OF POTENTIAL" METHOD AT EACH WIND TURBINE LOCATION PRIOR TO INTERCONNECTION OF EARTHING SYSTEM BETWEEN WIND TURBINES. NOTIFY OWNER IF RESULTS ARE MORE THAN FIVE OHMS.
- ALL FOUNDATION EARTHING MATERIALS ARE PROVIDED BY TURBINE MANUFACTURER, WITH THE EXCEPTION OF THE COMPRESSION FITTINGS.
- SEE FINAL FOUNDATION DRAWINGS FOR FOUNDATION INFORMATION AND DIMENSIONS.
- ALL GROUND CONDUCTORS SHALL BE EQUIPPED WITH A HEAT SHRINK SLEEVE WHERE THEY EMERGE FROM CONCRETE.
- REFERENCE VENDORS AND PART #'S ARE SHOWN. EQUIVALENT PARTS FROM OTHER VENDORS MAY BE SUBMITTED FOR APPROVAL.

LEGEND:

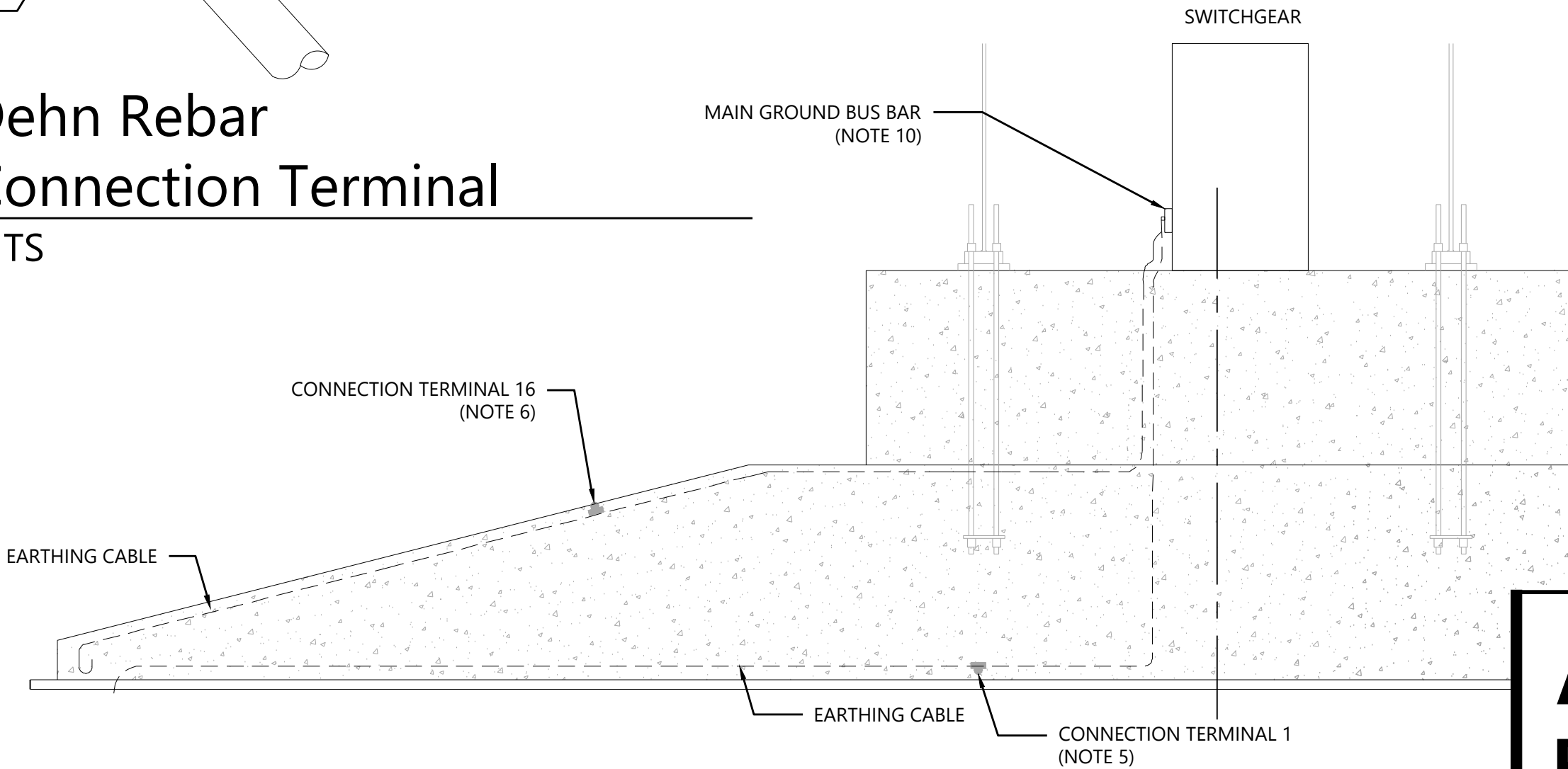
- ✕ CONNECTION TERMINALS (16X PER FOUNDATION)
- COMPRESSION LINE CONNECTIONS
- COMPRESSION LUG CONNECTIONS

MATERIALS LIST					
ITEM	QTY	UOM	DESCRIPTION	MAN. OR EQUAL	PART #
1	A/R	FT	CONDUCTOR, 1/0 AWG, STR, CU, BARE		
2	A/R	EA	COMPRESSION CONNECTOR, 1/0 AWG TO 1/0	BURNDY	YGH2626
3	A/R	EA	DEHN CONNECTION TERMINAL	DEHN	
4	A/R	EA	LUG, 1-HOLE, 1/0 AWG	BURNDY	YA25TC38

LUG MATERIALS LIST				
ITEM	QTY	UOM	DESCRIPTION	
1	A/R	EA	M10 NUT	
2	A/R	EA	M10 BOLT	
3	A/R	EA	SPRING WASHER	
4	A/R	EA	FENDER WASHER	
5	A/R	EA	1 HOLE, 1/0 CU LUG	

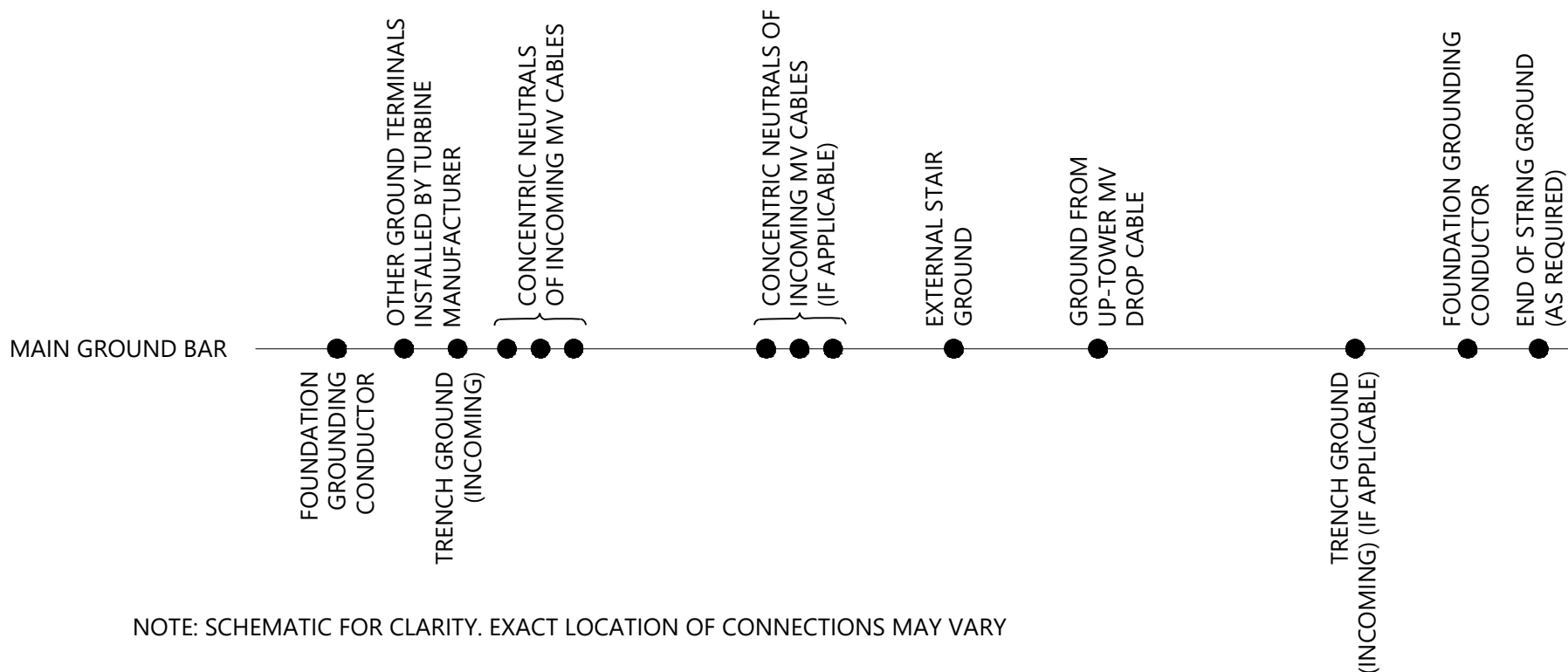


Dehn Rebar
Connection Terminal
NTS

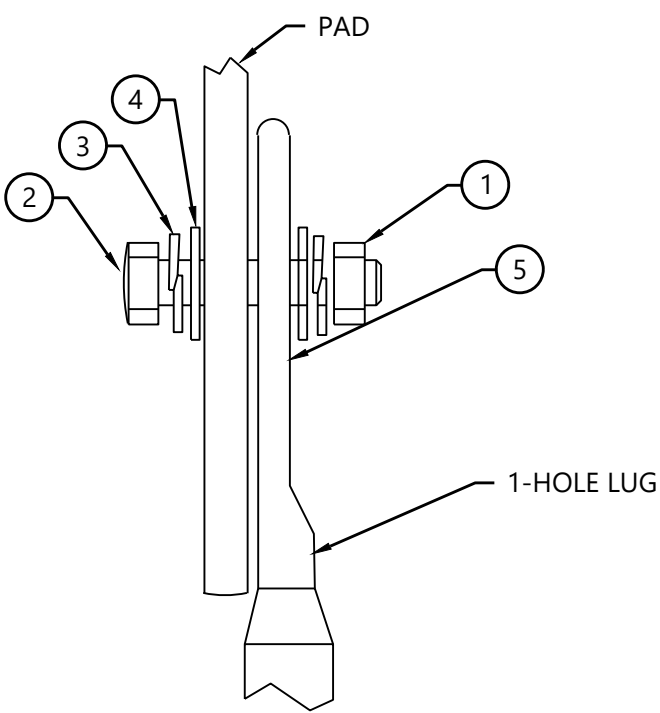


Foundation Section View
NTS

Foundation With Ground Conductor Installed
NTS



NOTE: SCHEMATIC FOR CLARITY. EXACT LOCATION OF CONNECTIONS MAY VARY



Main Ground Lug Detail
NTS

Main Ground Bar Connections
NTS

Agricola Wind Project

Cayuga County, New York

E7003 - Foundation
Grounding Detail

NOT FOR CONSTRUCTION

DATE: 10/4/2024

SHEET: ----

REV:

B



PREPARED FOR:

Agricola Wind LLC

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NOTES:

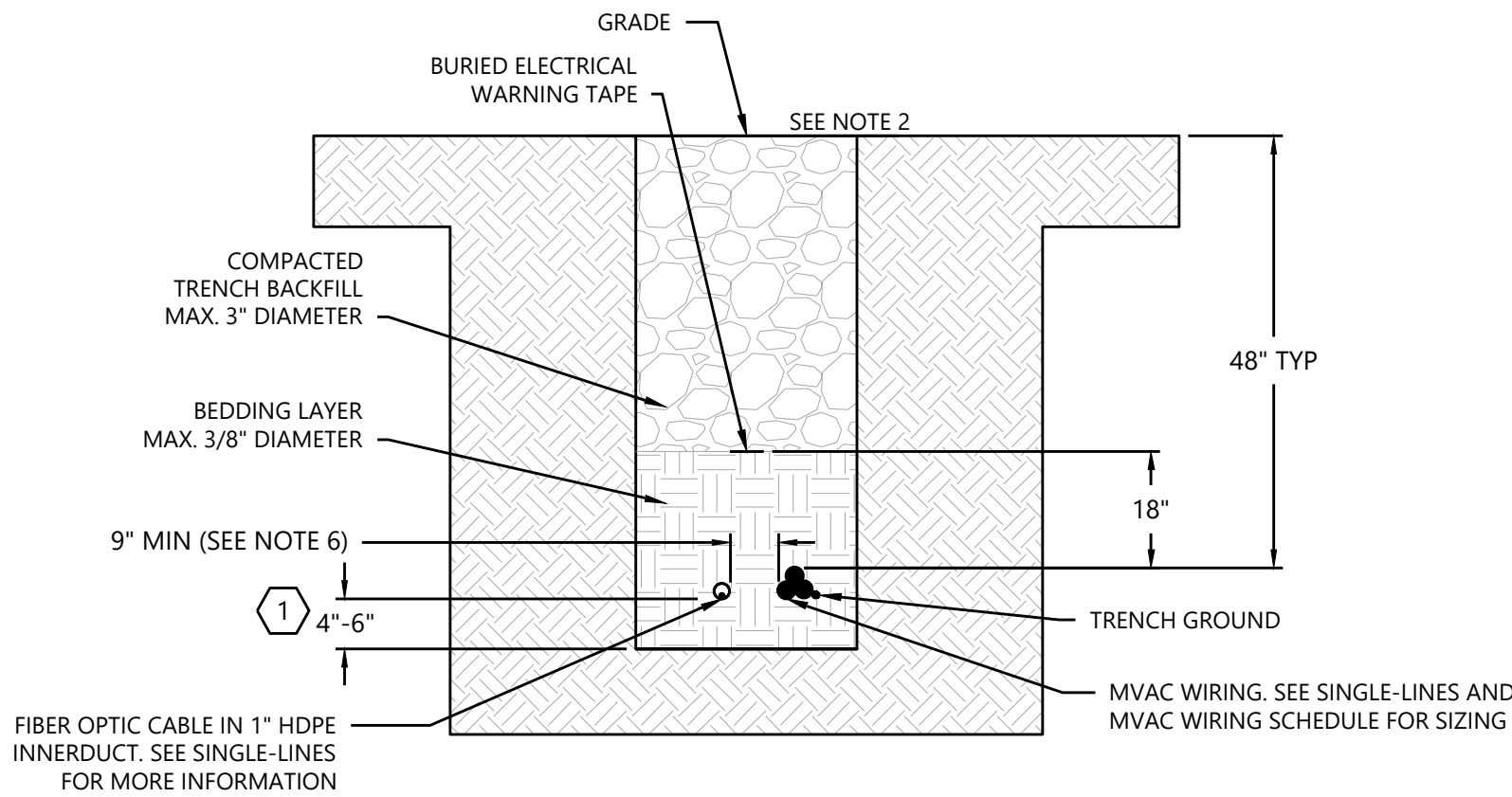
- BEDDING LAYER IS DEFINED AS THE MATERIAL THAT SPANS FROM 4"-6" BELOW BOTTOM OF CABLE TO 18" ABOVE TOP OF CABLE. IN ORDER TO ENSURE PROTECTION OF THE CABLES, THE MATERIAL INSTALLED IN THE BEDDING LAYER IS REQUIRED TO BE 3/8" DIAMETER OR LESS. SEE DETAIL 5 FOR REFERENCE.
- DESIGN BASIS THERMAL RESISTIVITY FOR NATIVE SOIL COMPACTED TO 90%: 150 C CM/W
- COORDINATE WITH SHEETS E.1100-E.1113 FOR MVAC CABLE ROUTING. REFER TO MVAC WIRING SCHEDULES FOR CABLE QUANTITIES AND SIZES.
- COORDINATE WITH SHEETS E.6000 FOR FIBER OPTIC CABLE ROUTING.
- BASED ON AMBIENT SOIL TEMPERATURE, THERMAL RESISTIVITY AND PERCENT MOISTURE RETENTION AS DETERMINED BY GEOTECHNICAL REPORT AND NOTED IN AMPACITY REPORT.
- MEDIUM VOLTAGE TRENCHES MAY CONTAIN MULTIPLE FIBER OPTIC CABLES.
- CONTRACTOR TO VERIFY WITH LOCAL AUTHORITIES FOR ANY SPECIFIC BORING CLEARANCES AND REVIEW ANY PROPOSED CHANGES WITH THE ENGINEER OF RECORD BEFORE DOING THE WORK.
- CABLE INSTALLATION THROUGH TRENCHING METHOD DEPICTED.

EARTHWORK:

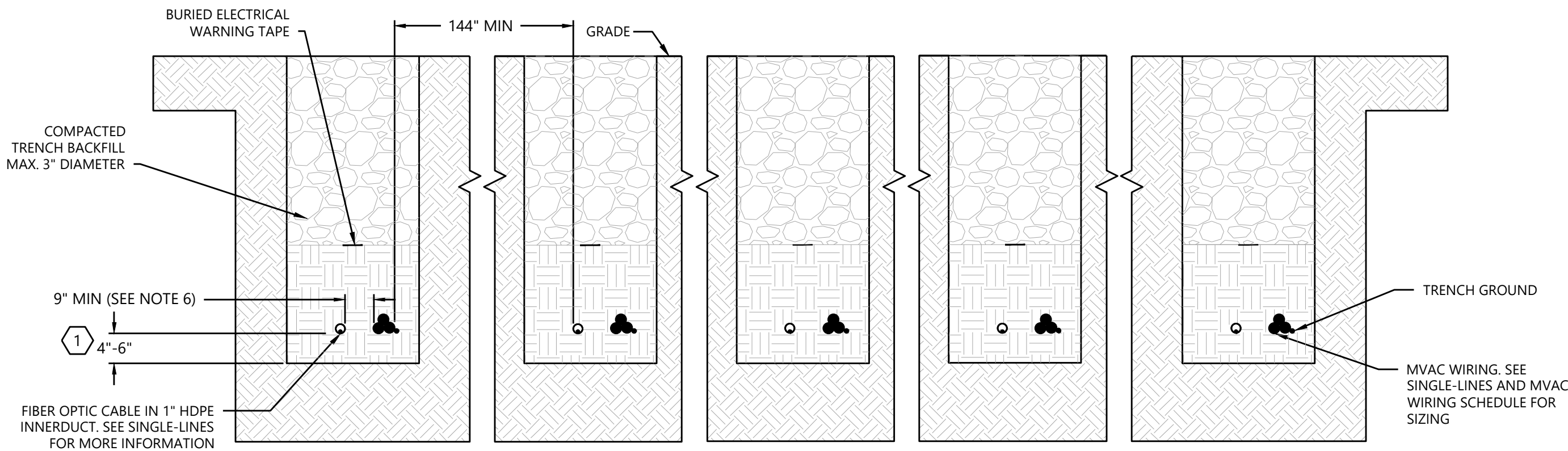
- GENERAL
 - THIS SECTION DESCRIBES WORK RELATED TO EARTHWORK FOR COLLECTION TRENCHING
 - EARTHWORK & BACKFILL WITHIN 5 FEET OF THE WTG FOUNDATION SHALL BE COMPACTED PER THE STRUCTURAL FOUNDATION BACKFILL REQUIREMENTS PROVIDED BY OTHERS
 - EARTHWORK & BACKFILL WITHIN AN AREA EXTENDING 5 FEET FROM THE EDGE OF ROAD SHALL BE COMPACTED TO THE CIVIL PLAN SPECIFICATIONS. SEE WESTWOOD CIVIL PLAN SHEET C.706.
- SUBMITTALS
 - THE FOLLOWING MATERIAL SUBMITTALS ARE REQUIRED FOR REVIEW BY THE ENGINEER OF RECORD (EOR) PER SPECIFIC PRODUCT AND PRE-PLACEMENT:
 - ON-SITE BORROW SOURCE FOR BEDDING AND BACKFILL MATERIAL
 - IMPORTED BEDDING AND BACKFILL MATERIAL
- MATERIALS
 - TRENCH BEDDING
 - BEDDING TO CONSIST OF NATIVE SOIL OR APPROVED IMPORT MATERIAL THAT IS FREE OF LARGE SHARP ROCKS, DEBRIS, ORGANIC MATERIALS, OR OTHER MATERIAL CAPABLE OF DAMAGING CABLES.
 - BEDDING MATERIAL SHALL BE 3/8 INCH DIAMETER OR LESS. SEE DETAIL 5 FOR REFERENCE.
 - TRENCH BACKFILL
 - BACKFILL TO TO CONSIST OF NATIVE SOIL OR IMPORT MATERIAL THAT IS FREE OF LARGE SHARP ROCKS, DEBRIS, ORGANIC MATERIALS, OR OTHER MATERIAL CAPABLE OF DAMAGING CABLES.
 - BACKFILL MATERIAL SHALL BE SCREENED TO REMOVE PARTICLES LARGER THAN 3 INCHES.
- CONSTRUCTION
 - GENERAL TRENCHING
 - ONLY ONE TRENCH SHALL BE OPEN AT A TIME TO ENSURE SIDE SLOPE STABILITY.
 - SEE DETAILS 1-5 FOR TRENCH DEPTH SPECIFICATIONS. BOTTOM OF TRENCH PRIOR TO BEDDING PLACEMENT SHALL CONSIST OF NON-NATIVE COMPACTED MATERIAL.
 - TRENCH BEDDING AND BACKFILL
 - FOLLOWING GENERAL TRENCHING, 4-6 INCHES OF BEDDING MATERIAL SHALL BE PLACED AT THE BOTTOM OF THE TRENCH.
 - PER DETAILS 1-6, MVAC CABLE AND TRENCH GROUND SHALL BE PLACED ON THE BEDDING.
 - FOLLOWING MVAC CABLE AND FIBER PLACEMENT, 18 INCHES OF BEDDING MATERIAL SHALL BE PLACED ABOVE THE CABLES AND COMPACTED IN LIFTS WITH MAXIMUM UN-COMPACTED THICKNESS OF 8 INCHES.
 - FOLLOWING THE FINAL BEDDING PLACEMENT AND COMPACTION, TRENCH BACKFILL MATERIAL SHALL BE PLACED OVER THE WARNING TAPE. FINAL BACKFILL MATERIAL SHALL BE COMPACTED TO ELIMINATE VOIDS WITH ADDITIONAL BACKFILL TO ALLOW FOR SETTLING.

KEYNOTES:

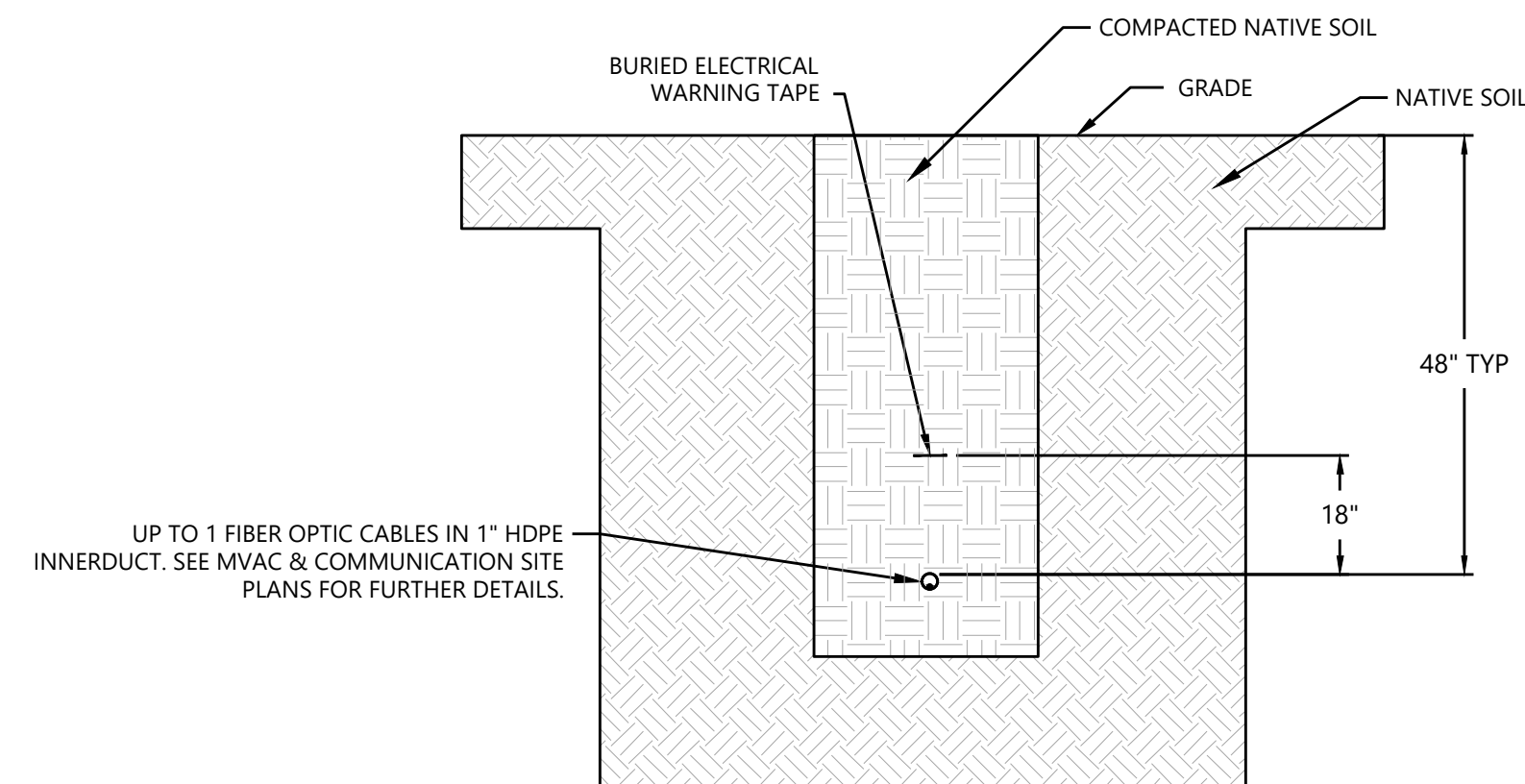
- 1 IF VISUAL INSPECTION INDICATES THAT NO GRAVEL LARGER THAN 3/8 INCH IS PRESENT AT THE LEVEL OF THE BOTTOM OF THE CABLE, CONSTRUCTION ITEM 4.b.1 IS NOT REQUIRED.



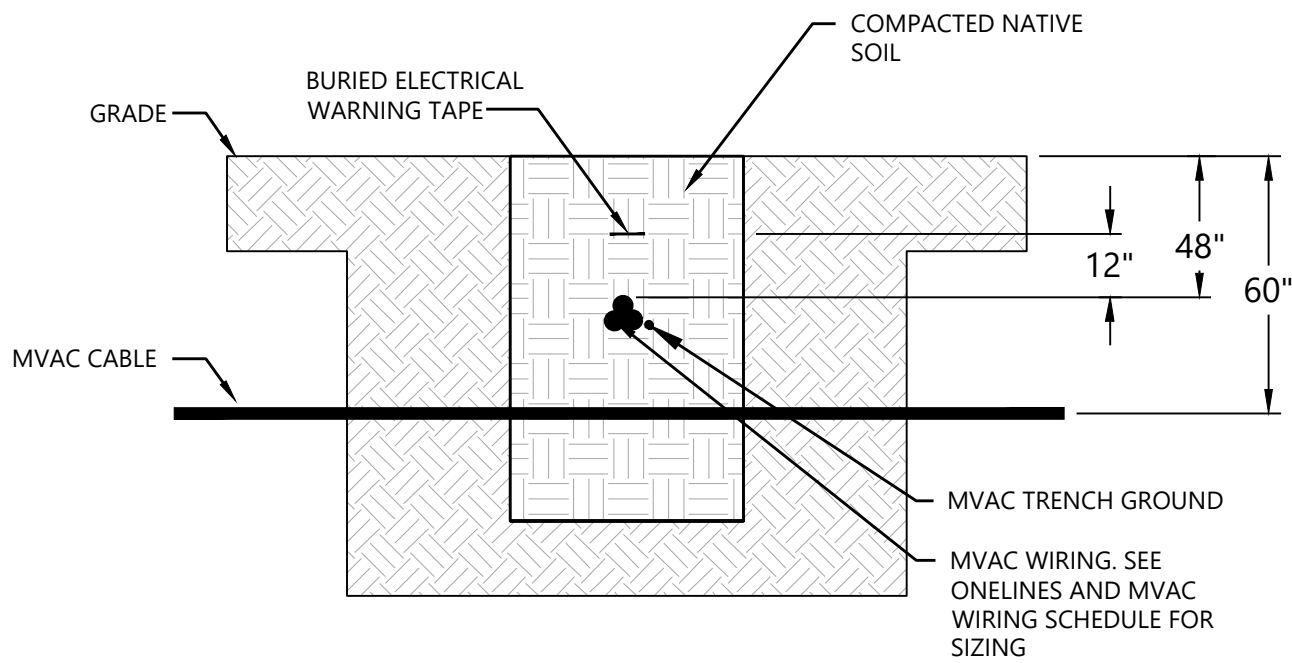
1 MVAC & Fiber Optic Trench
NTS



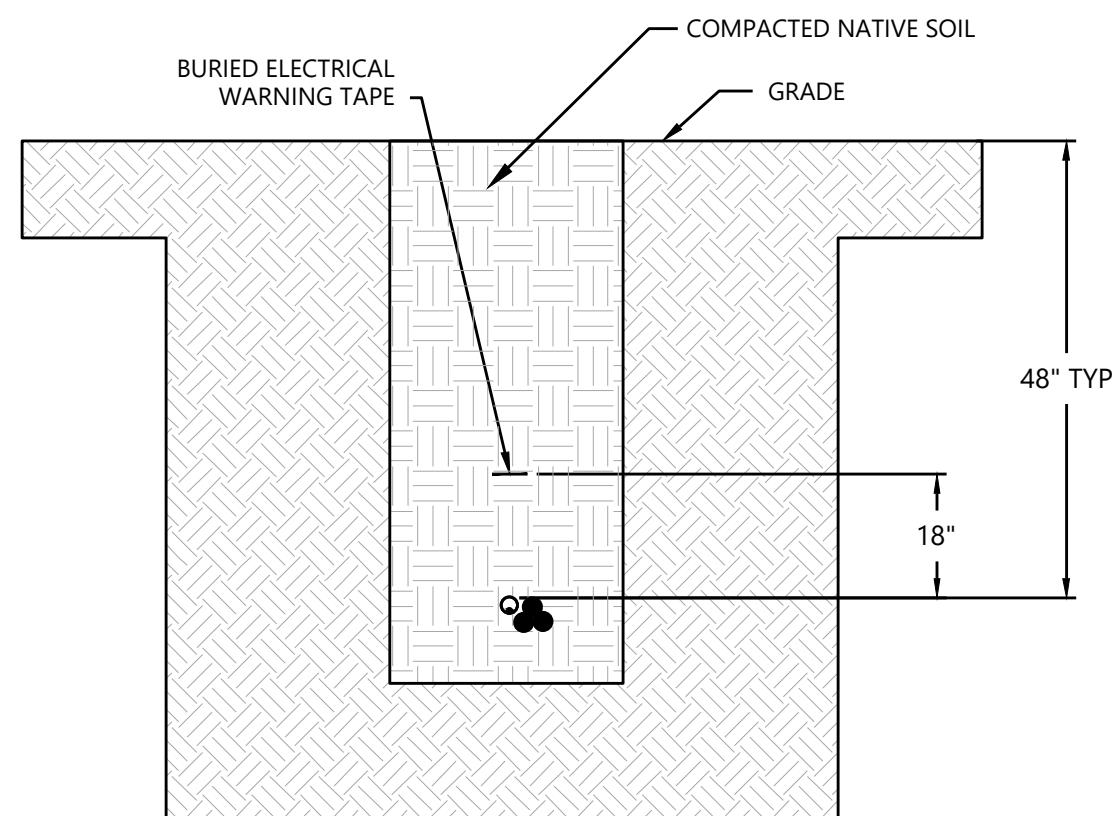
2 MVAC & Fiber Optic Trench - 5 Circuits or Less
NTS



4 Fiber Optic Trench
NTS



3 Typical MVAC Crossing Detail
NTS



5 LVAC Trench (To MET Tower)
NTS

Table 1 : Cable Trench Backfill Testing Requirements

	Location	Required Test	ASTM Standard	Frequency	Specified Criteria
Trench	Trench Backfill and Bedding	Moisture Density Test (Nuclear Density)	ASTM D-2922	1 test per every 500 LF of trench with 18" of cover over cables/conduit and on each subsequent compacted 12" thick lift	90% of maximum dry density, -2% to +5% of optimum moisture content
		Standard Proctor	ASTM D-698	1 per major soil type	
	Trench Bedding (import only)	Standard Proctor	ASTM D-698	1 per major soil type	Submit results to Westwood for approval
		Sieve Analysis with Hydrometer	ASTM D-422	1 per major soil type	
		Thermal Resistivity Dryout Curve	ASTM D-5334	1 per major soil type	

Agricola Wind
Project

Cayuga County, New York

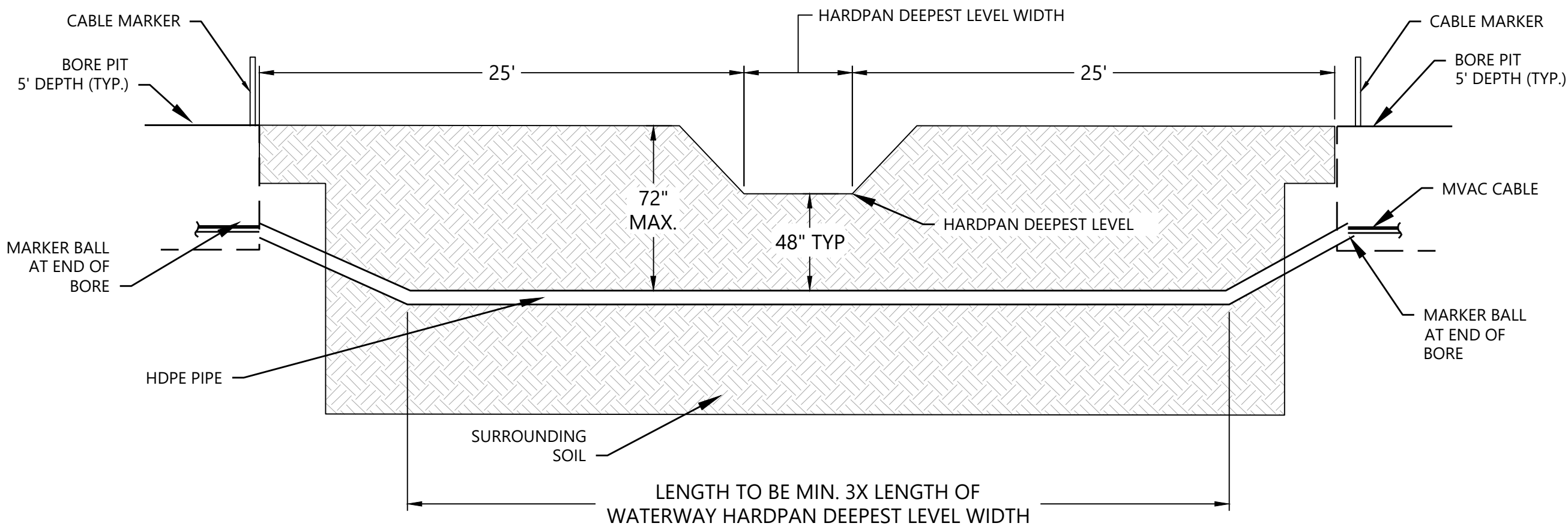
Trench Details

NOT FOR CONSTRUCTION

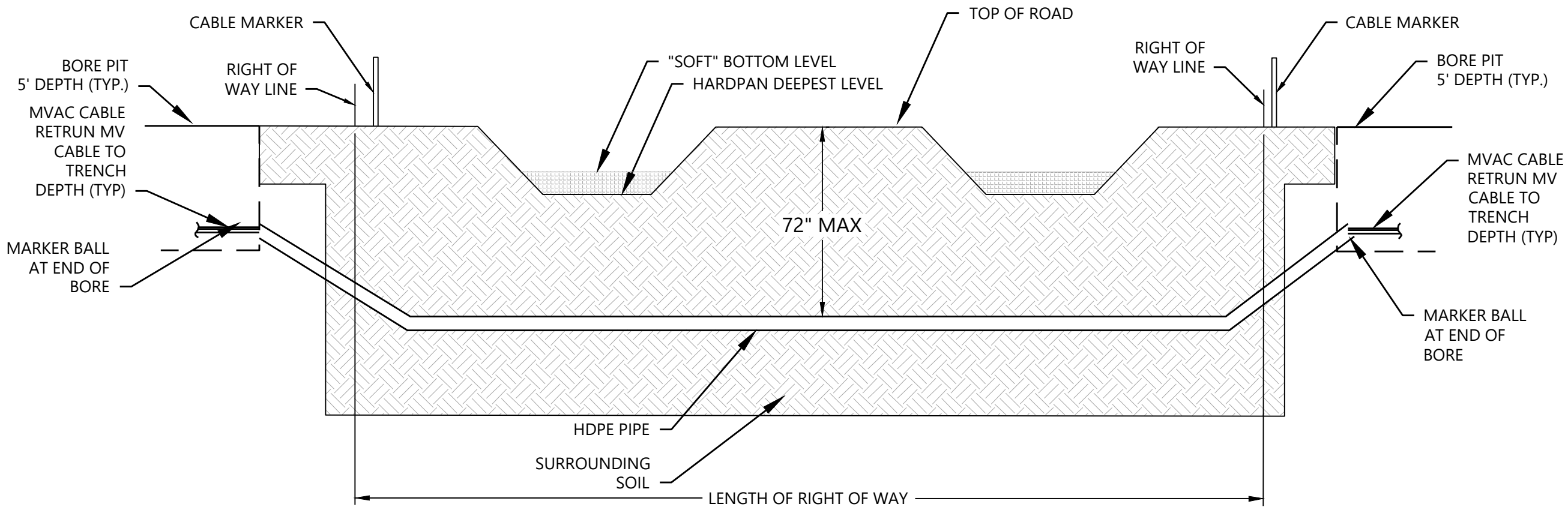
DATE: 10/4/2024

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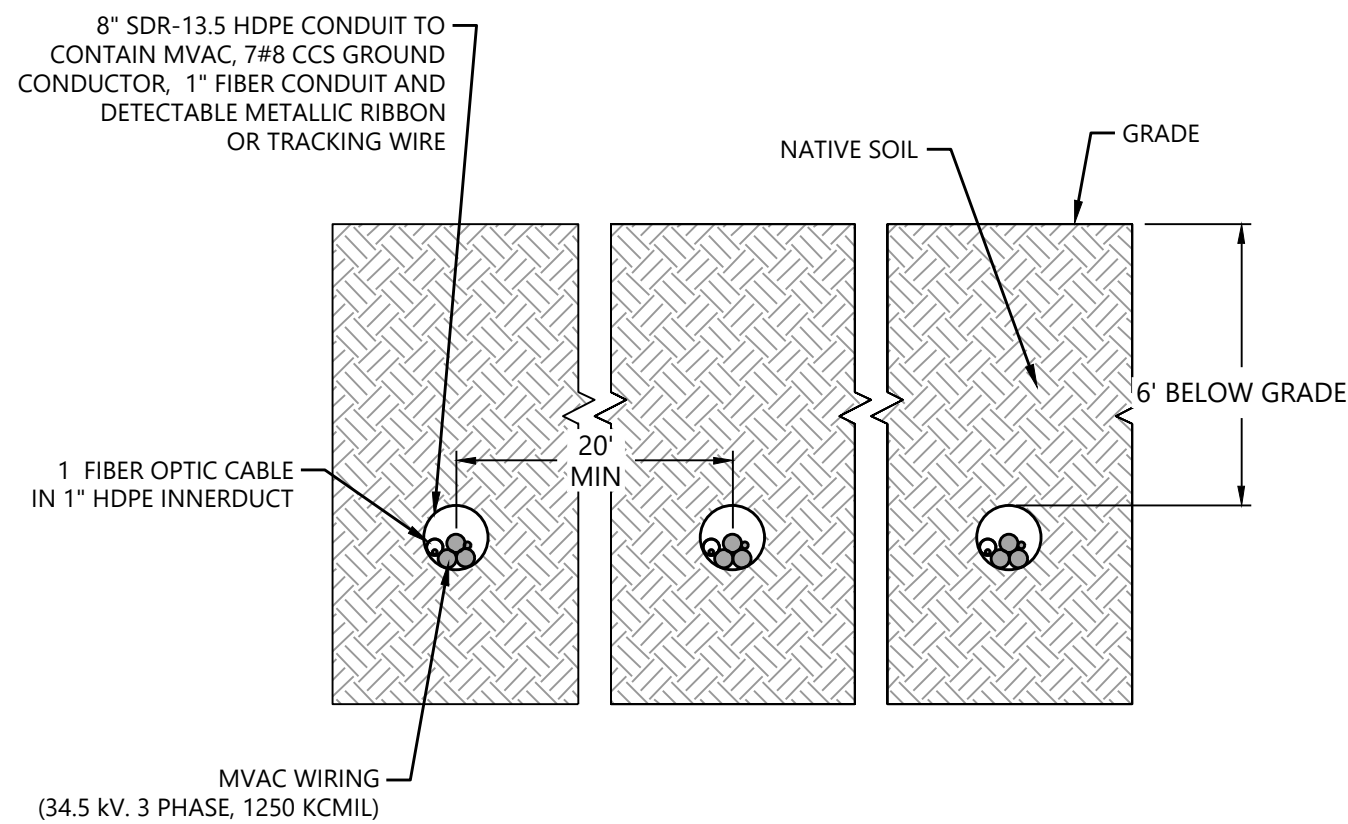
REV: B



1 Typical MVAC Crossing - Wetland Bore Section View
NTS



2 Road Crossing Detail Bore Section View
NTS



3 Parallel Bore Crossing Detail Cross Sectional View
NTS

- NOTES:
1. CABLE MARKERS TO BE PLACED AT TOP OF SLOPES.
 2. DEPTH OF BORE IS SET PER THERMAL STUDIES, AND IF GREATER THAN 72" DEPTH IS REQUIRED THEN ADDITIONAL ENGINEERING ANALYSIS WILL BE REQUIRED.
 3. CENTER-TO-CENTER SPACING OF PARALLEL BORES TO BE 20' MINIMUM (SPACING TBD IN 30% DESIGN).
 4. BORE LENGTH TO BE ENTIRE RIGHT-OF-WAY OF FEATURE, OR IF NO RIGHT-OF-WAY PRESENT THEN BORE TO EXTEND 10' BEYOND TOP BANK OF FEATURE.
 5. SLOPE OF BORE INTO AND OUT OF HORIZONTAL SECTION TO BE 1:3 SLOPE MINIMUM.
 6. HORIZONTAL BORE LENGTH TO BE A MINIMUM OF 3 TIMES DRAIN BOTTOM WIDTH.
 7. SEE E7602 FOR SITE BORE SCHEDULE.



PREPARED FOR:

Agricola Wind LLC

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Agricola Wind Project

Cayuga County, New York

Bore Details

NOT FOR CONSTRUCTION

DATE: 10/4/2024

SHEET: E7601

REV: B

\\0302617101_CAD_Electrical\\020617101 - E7602 Bore Crossings.dwg 10/4/2024 3:21 PM Brian Kering

GENERAL NOTES

1. FINAL BORE LENGTH MAY BE LONGER THAN "CROSSING LENGTH" DUE TO REQUIRED DEPTH, CONDUIT BENDING RADIUS AND GROUND CONDITIONS.

AGRICOLA WIND CROSSING SCHEDULE								
CROSSING ID	CIRCUIT	CONDUCTOR LOCATION CODE	TYPE	CROSSING LENGTH (FT)	CABLE SIZE	CROSSING CONDUIT SIZE (IN)	BORE START COORDINATES (NORTHINGS, EASTINGS)	BORE END COORDINATES (NORTHINGS, EASTINGS)
DB1-1	UMV-1	MV1.JB-1A-T-3	ROAD CROSSING	59	1000 kcmil	8"	(829800, 1007456)	(829805, 1007398)
DB1-2	UMV-1	MV1.T-2-T-1	ROAD CROSSING	79	4/0 AWG	6"	(826909, 1010315)	(826987, 1010318)
DB2-1	UMV-2	MV2.T-15-JB-2A	ROAD CROSSING	127	500 kcmil	6"	(830902, 997787)	(830897, 997913)
DB2-2	UMV-2	MV2.T-15-JB-2A	WETLAND CROSSING	129	500 kcmil	6"	(831702, 997134)	(831702, 997263)
DB2-3	UMV-2	MV2.T-15-JB-2A	ROAD CROSSING	57	500 kcmil	6"	(831844, 993343)	(831843, 993400)
DB2-4	UMV-2	MV2.JB-2A-T-23	ROAD CROSSING	65	4/0 AWG	6"	(833045, 993456)	(833045, 993391)
DB3-1	UMV-3	MV3.RP-4-T-22	ROAD CROSSING	127	4/0 AWG	6"	(830937, 997791)	(830931, 997917)
DB3-2	UMV-3	MV3.RP-4-T-22	WETLAND CROSSING	129	4/0 AWG	6"	(831724, 997134)	(831724, 997263)
DB3-3	UMV-3	MV3.RP-4-T-22	ROAD CROSSING	57	4/0 AWG	6"	(831863, 993343)	(831861, 993399)
DB3-4	UMV-3	MV3.RP-4-T-22	ROAD CROSSING	65	4/0 AWG	6"	(833030, 993455)	(833030, 993390)
DB3-5	UMV-3	MV3.RP-4-T-22	WETLAND CROSSING	1287	4/0 AWG	6"	(834578, 995368)	(833293, 995290)
DB4-1	UMV-4	MV4.SUB-T-16	ROAD CROSSING	72	1250 kcmil	8"	(834169, 1002608)	(834235, 1002636)
DB4-2	UMV-4	MV4.SUB-T-16	ROAD CROSSING	72	1250 kcmil	8"	(835329, 1002670)	(835400, 1002670)
DB4-3	UMV-4	MV4.JB-4A-JB-4B	WETLAND CROSSING	1794	500 kcmil	6"	(839520, 1002952)	(838328, 1001613)
DB4-4	UMV-4	MV4.JB-4A-JB-4B	ROAD CROSSING	72	500 kcmil	6"	(840507, 1002828)	(840579, 1002831)
DB4-5	UMV-4	MV4.JB-4B-T-12	ROAD CROSSING	77	4/0 AWG	6"	(842210, 1004032)	(842164, 1003971)
DB4-6	UMV-4	MV4.JB-4B-T-18	WETLAND CROSSING	58	4/0 AWG	6"	(843381, 1001839)	(843353, 1001889)
DB5-1	UMV-5	MV5.SUB-T-20	ROAD CROSSING	72	4/0 AWG	6"	(834161, 1002626)	(834227, 1002654)
DB5-2	UMV-5	MV5.SUB-T-20	ROAD CROSSING	72	4/0 AWG	6"	(835328, 1002685)	(835400, 1002685)
DB5-3	UMV-5	MV5.SUB-T-20	WETLAND CROSSING	1794	4/0 AWG	6"	(839503, 1002966)	(838311, 1001627)
DB5-4	UMV-5	MV5.SUB-T-20	ROAD CROSSING	72	4/0 AWG	6"	(840507, 1002850)	(840578, 1002853)
DB5-5	UMV-5	MV5.SUB-T-20	WETLAND CROSSING	71	4/0 AWG	6"	(843401, 1001844)	(843367, 1001906)
DB5-6	UMV-5	MV5.SUB-T-20	ROAD CROSSING	228	4/0 AWG	6"	(843857, 997647)	(843900, 997871)
DB5-7	UMV-5	MV5.SUB-T-20	ROAD CROSSING	72	4/0 AWG	6"	(842221, 995338)	(842292, 995341)
DB5-8	UMV-5	MV5.SUB-T-20	WETLAND CROSSING	206	4/0 AWG	6"	(839883, 994455)	(839685, 994399)
DB6-1	UMV-6	MV6.SUB-T-19	ROAD CROSSING	72	500 kcmil	6"	(834154, 1002643)	(834219, 1002671)
DB6-2	UMV-6	MV6.SUB-T-19	ROAD CROSSING	72	500 kcmil	6"	(835329, 1002700)	(835400, 1002700)
DB6-3	UMV-6	MV6.SUB-T-19	WETLAND CROSSING	1794	500 kcmil	6"	(839486, 1002980)	(838293, 1001641)
DB6-4	UMV-6	MV6.SUB-T-19	ROAD CROSSING	72	500 kcmil	6"	(840505, 1002872)	(840576, 1002875)
DB6-5	UMV-6	MV6.SUB-T-19	WETLAND CROSSING	71	500 kcmil	6"	(843419, 1001855)	(843385, 1001917)
DB6-6	UMV-6	MV6.SUB-T-19	ROAD CROSSING	229	500 kcmil	6"	(843877, 997643)	(843920, 997868)
DB6-7	UMV-6	MV6.SUB-T-19	ROAD CROSSING	72	500 kcmil	6"	(842222, 995320)	(842293, 995323)
DB6-8	UMV-6	MV6.T-19-T-21	WETLAND CROSSING	206	4/0 AWG	6"	(839888, 994439)	(839689, 994382)
DB7-1	UMV-7	MV7.SUB-T-9	ROAD CROSSING	69	1250 kcmil	8"	(833519, 1004171)	(833581, 1004201)
DB7-2	UMV-7	MV7.JB-7A-T-8	ROAD CROSSING	58	4/0 AWG	6"	(834258, 1006893)	(834276, 1006947)
DB7-3	UMV-7	MV7.JB-7A-T-11	ROAD CROSSING	64	500 kcmil	6"	(835181, 1006039)	(835245, 1006039)
DB7-4	UMV-7	MV7.T-11-T-10	ROAD CROSSING	59	4/0 AWG	6"	(837302, 1006666)	(837300, 1006724)
DB8-1	UMV-8	MV8.SUB-T-7	ROAD CROSSING	69	1250 kcmil	8"	(833511, 1004191)	(833573, 1004220)
DB8-2	UMV-8	MV8.SUB-T-7	ROAD CROSSING	58	1250 kcmil	8"	(834240, 1006899)	(834258, 1006953)
DB8-3	UMV-8	MV8.JB-8A-T-6	ROAD CROSSING	64	4/0 AWG	6"	(834884, 1011943)	(834947, 1011942)

Westwood

Surveying & Engineering

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Fax (952) 937-5822 Minnetonka, MN 55343

Toll Free (888) 937-5150 www.pc.com

Westwood Surveying and Engineering, P.C.

STATE OF NEW YORK

ANDREW N SZABO

10/04/2024

099483

LICENSED PROFESSIONAL ENGINEER

Andrew Szabo

PREPARED FOR:

Agricola Wind LLC

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	03/15/2025	ISSUED FOR 30% DESIGN REVIEW	MR	SK	DS
B	10/4/2024	ISSUED FOR 60% DESIGN REVIEW	MR	SK	DS

Agricola Wind Project

Cayuga County, New York

Bore Crossings

NOT FOR CONSTRUCTION

DATE: 10/4/2024

SHEET: E7602

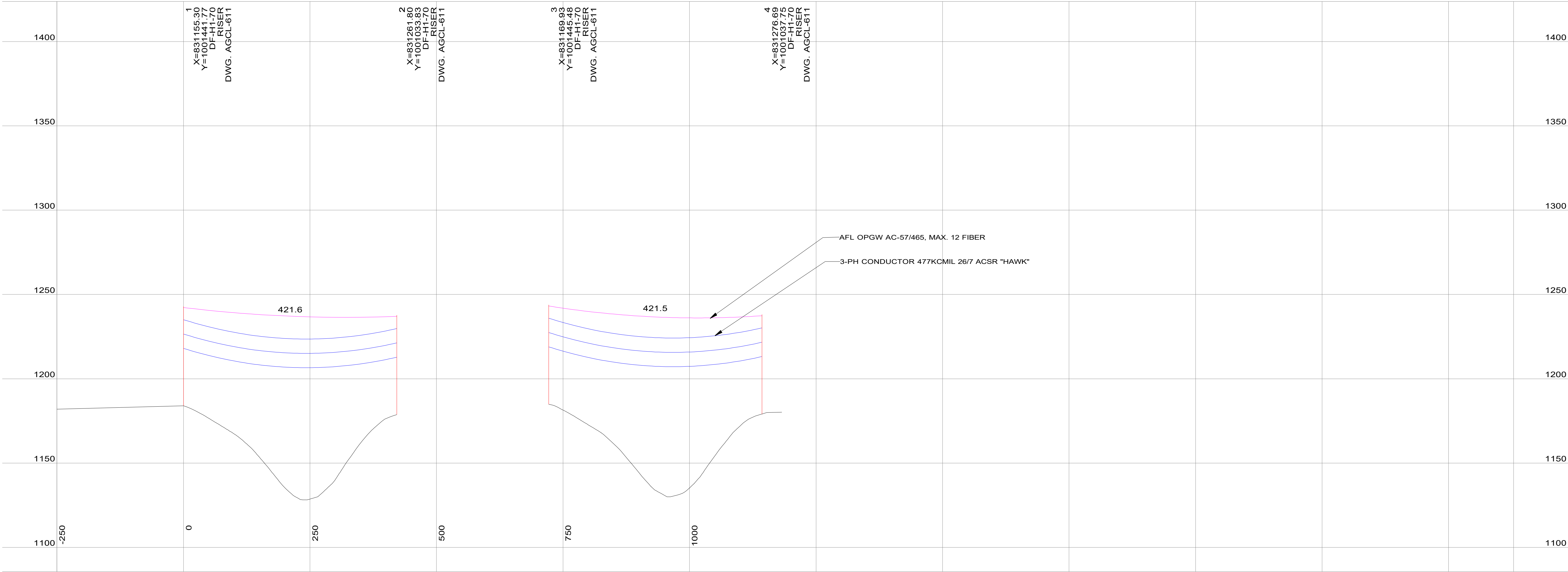
REV: B



PROJECT COORDINATE SYSTEM:
STATE PLANE NAD83, 3102 NEW YORK CENTRAL
SURVEY NOTES:
PLAN AND PROFILE DRAWINGS ARE BASED
ON THE SURVEY FILES RECEIVED FROM CLIENT

100.0 ft. Horiz. Scale
30.0 ft. Vert. Scale

34.5kV, hawk_acsr.wir, Tension 4101 (lbs) at 60 (deg F) Initial
34.5kV, hawk_acsr.wir, Tension 4101 (lbs) at 60 (deg F) Initial
0kV, AC-57-465.wir, Tension 3606 (lbs) at 60 (deg F) Initial
0kV, AC-57-465.wir, Tension 3606 (lbs) at 60 (deg F) Initial



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C	08/13/2024	ISSUED FOR PERMIT	VD	MS	MS	
B	05/03/2024	ISSUED FOR 60% REVIEW	VD	MS	MS	
A	04/12/2024	ISSUED FOR 30% REVIEW	VD	MS	MS	

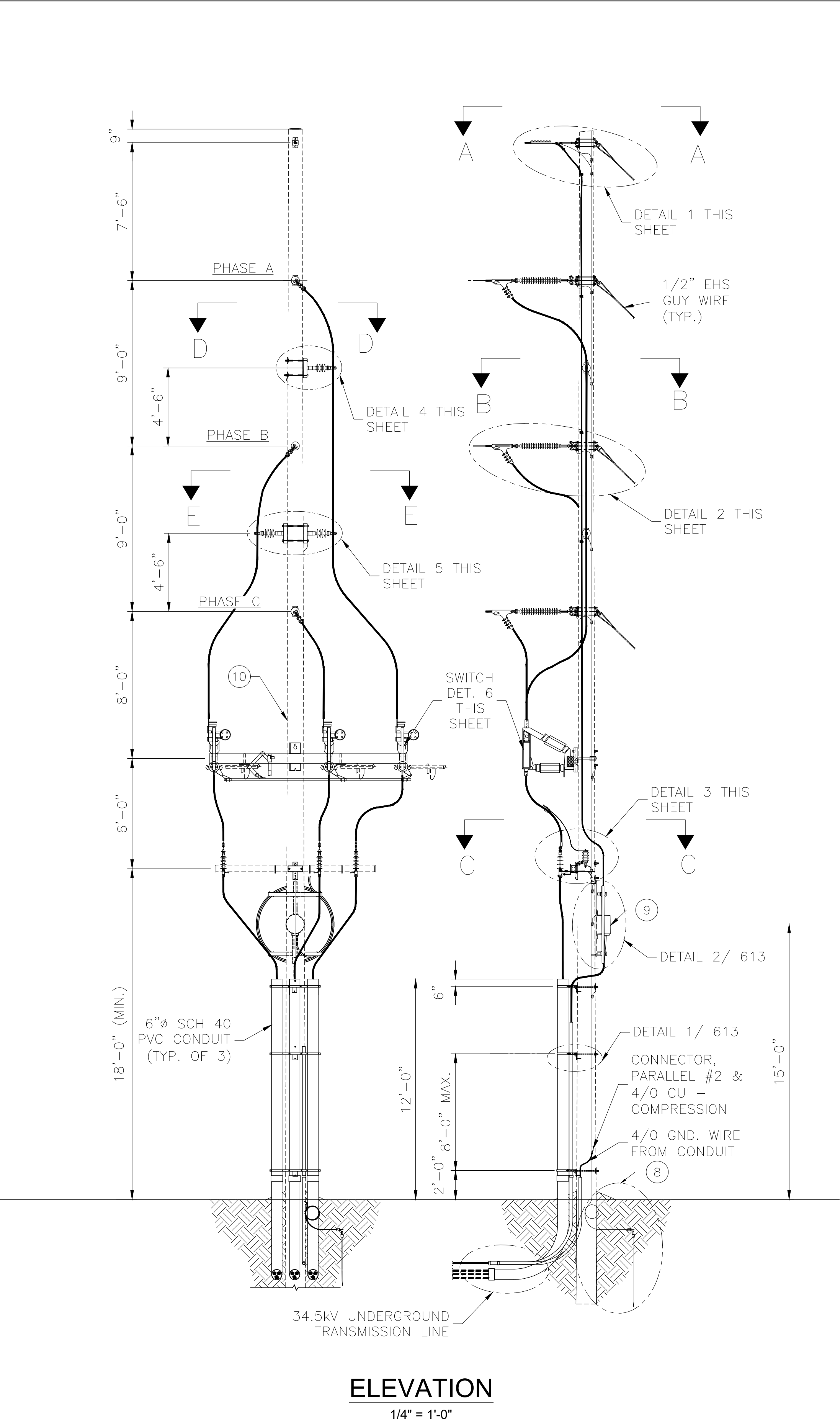
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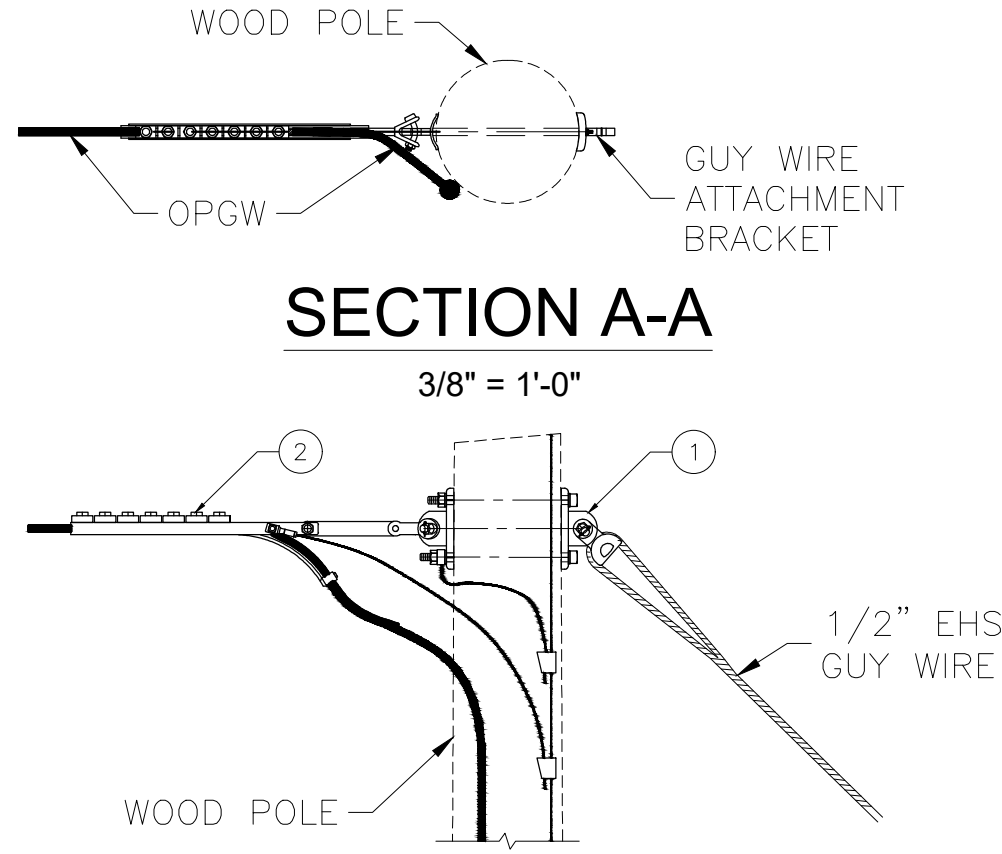
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40 TAMARACK LANE
NYSKAYUNA, NY 12309
(518) 225-9473

AGRICOLA WIND PROJECT - 180MWAC
LIBERTY RENEWABLES INC.
2598 BURNS RD., VENIXCE, NY 13147, CAYUGA COUNTY
34.5KV COLLECTION OVERHEAD LINE
PLAN AND PROFILE

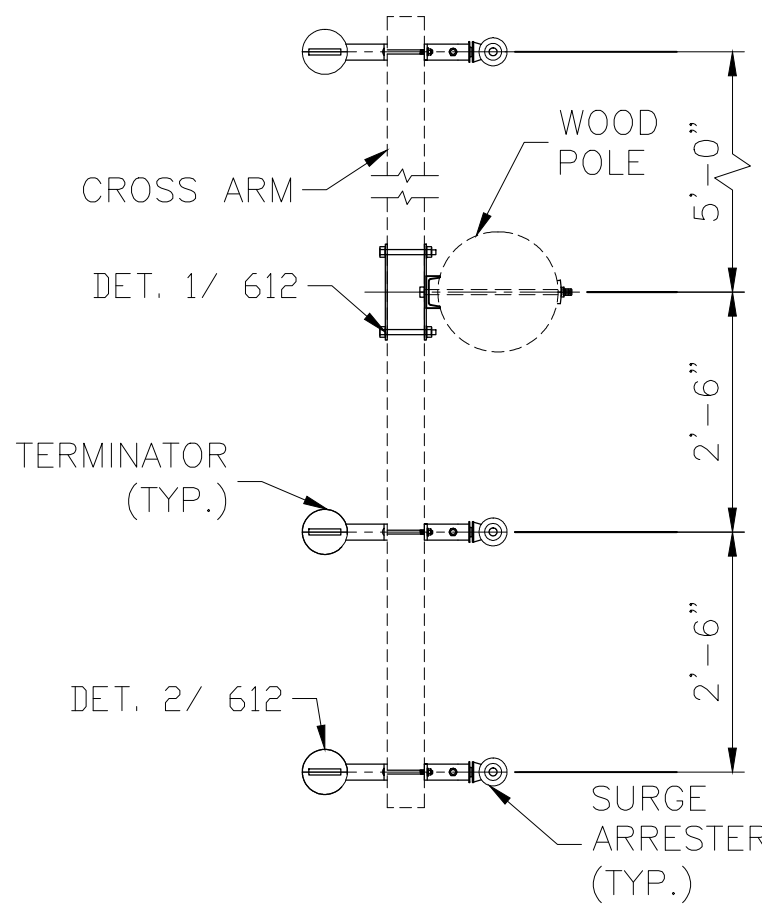
PROJ. NO.:	AGCL
DWG. NO.:	AGCL-610
SH:	1
REV:	C
SCALE:	AS NOTED



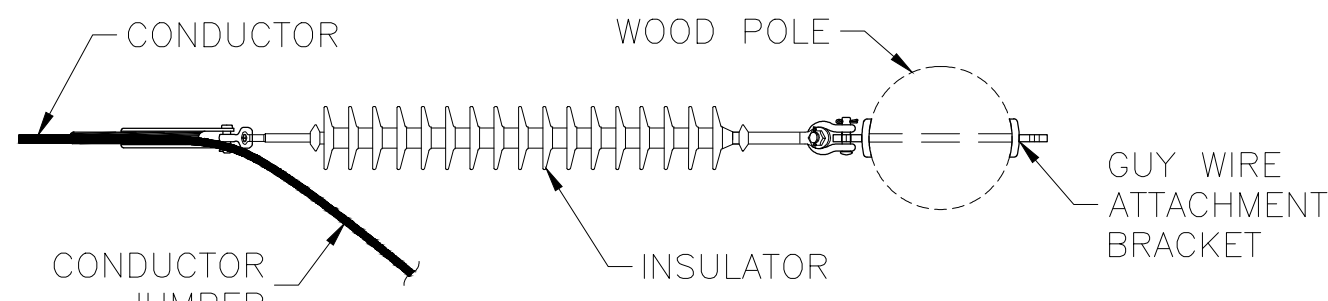
ELEVATION
1/4" = 1'-0"



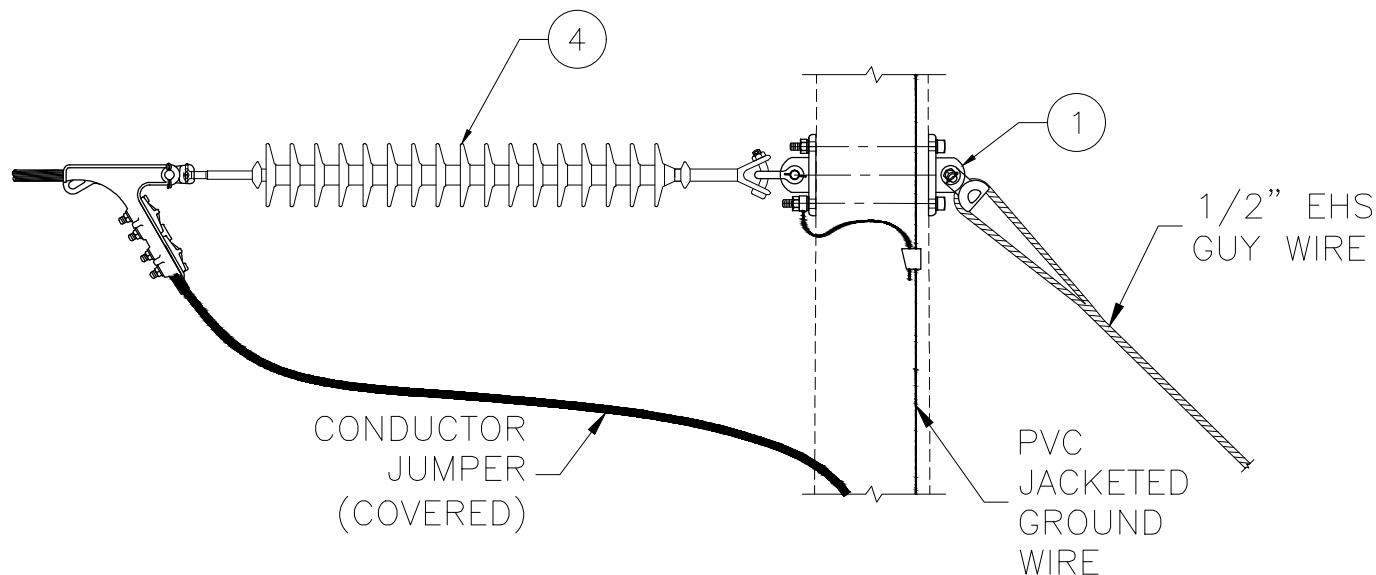
1 DETAIL
3/8" = 1'-0"



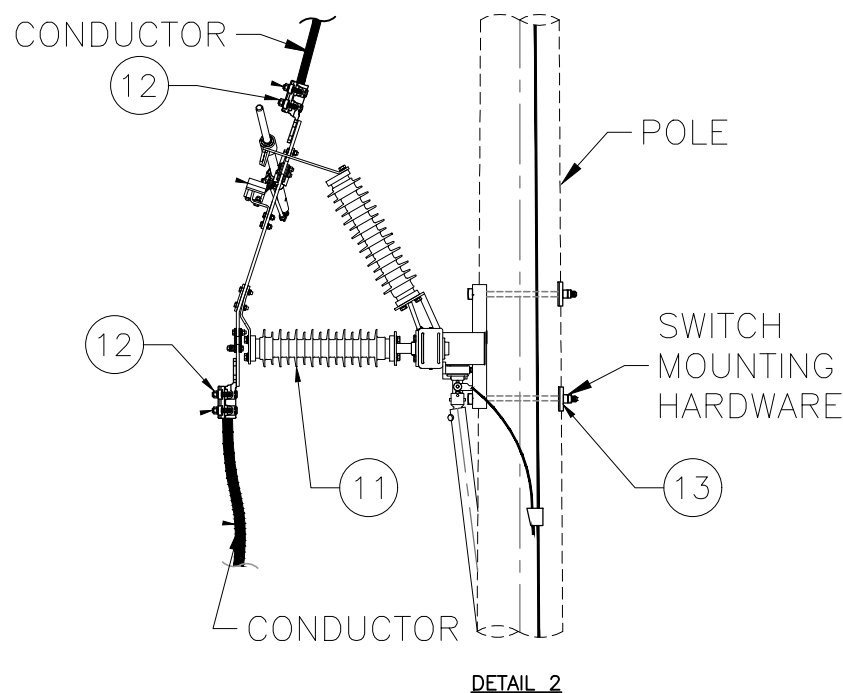
SECTION C-C
1/2" = 1'-0"



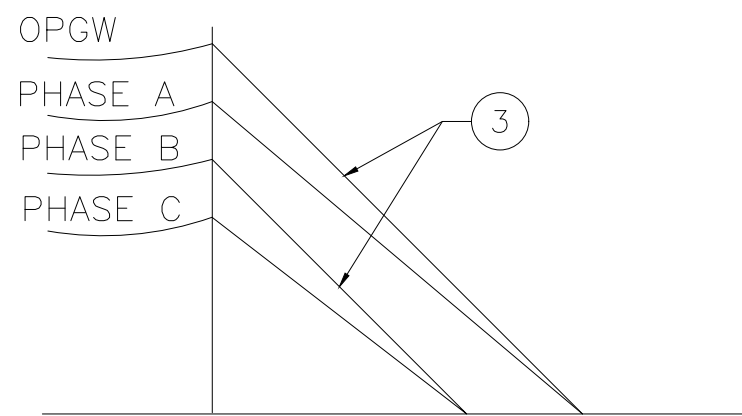
SECTION B-B
3/8" = 1'-0"



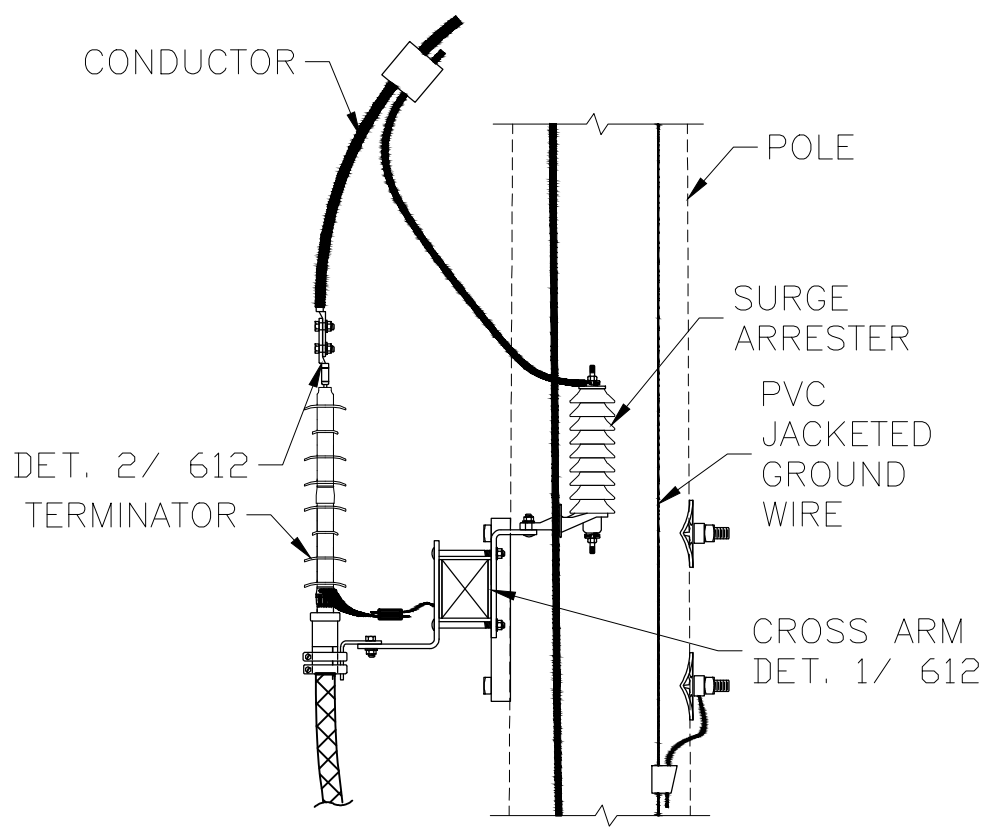
2 DETAIL
3/8" = 1'-0"



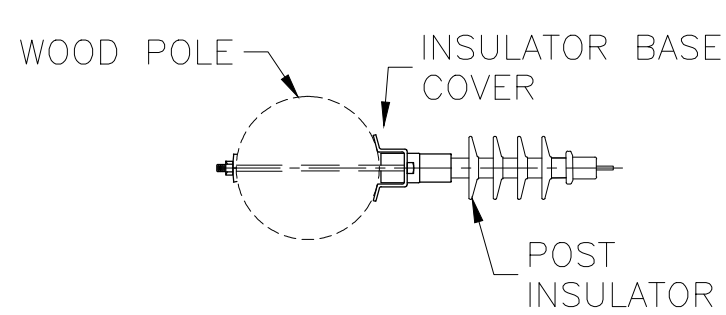
6 DETAIL
1/2" = 1'-0"



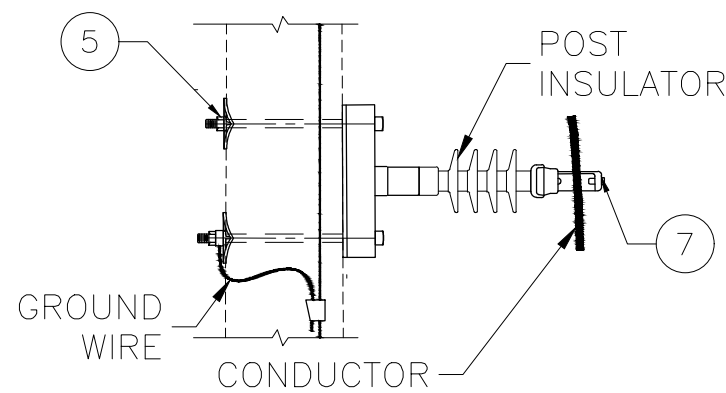
STAKING DIAGRAM



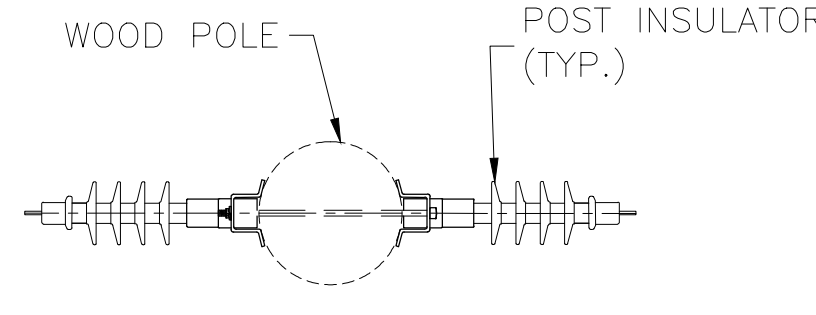
3 DETAIL
1/2" = 1'-0"



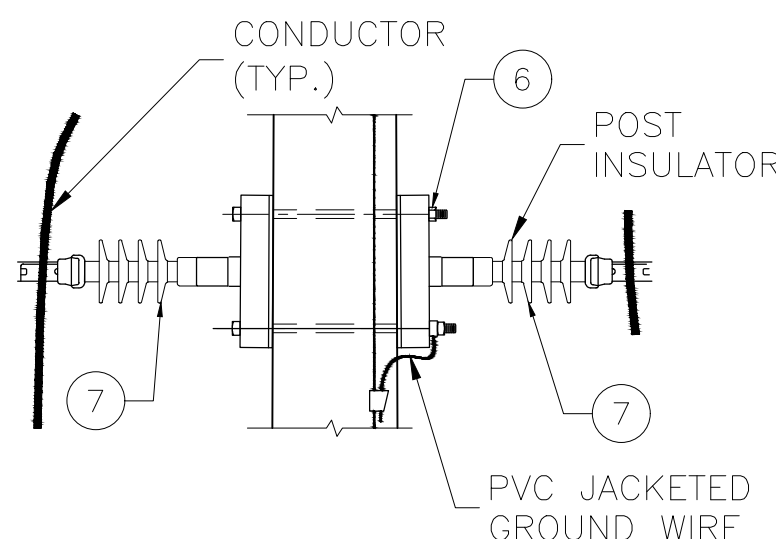
SECTION D-D
3/8" = 1'-0"



4 DETAIL
3/8" = 1'-0"



SECTION E-E
3/8" = 1'-0"

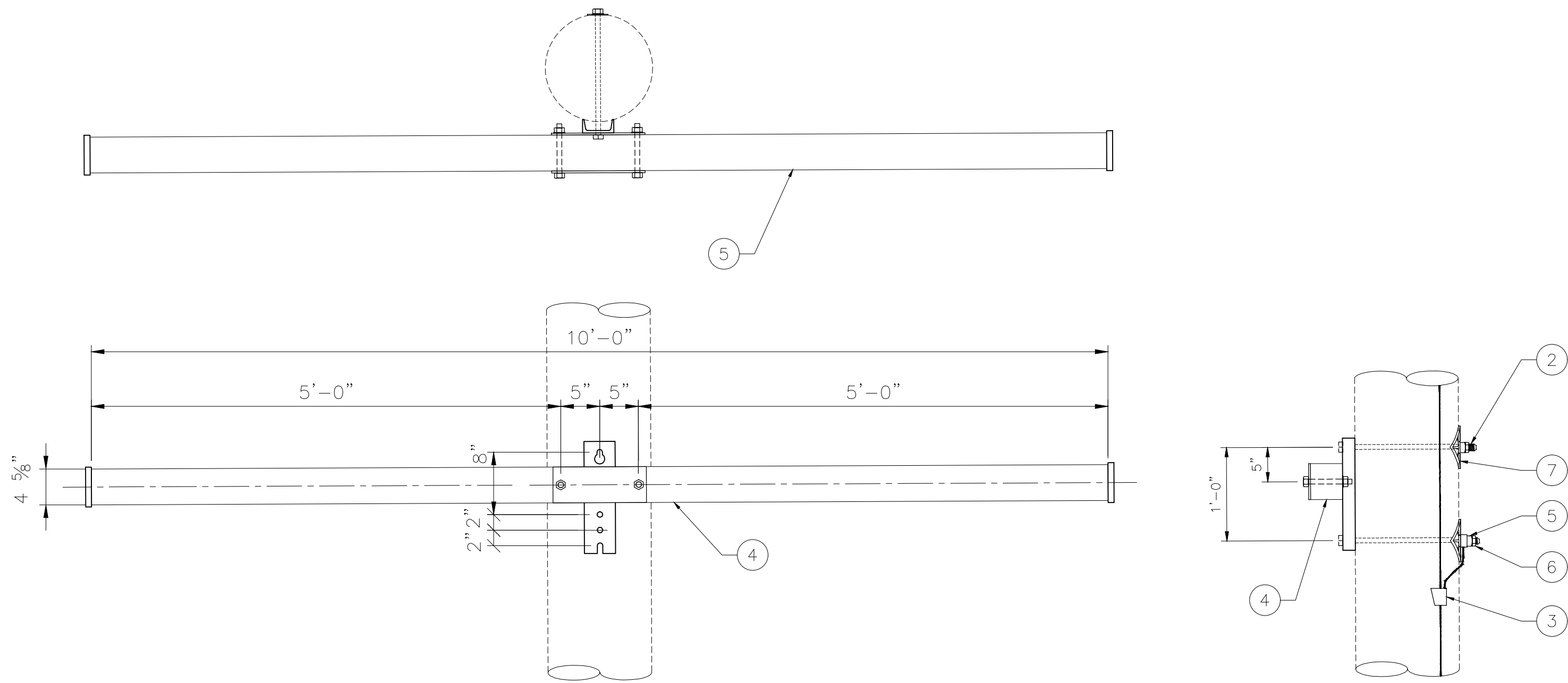


5 DETAIL
3/8" = 1'-0"

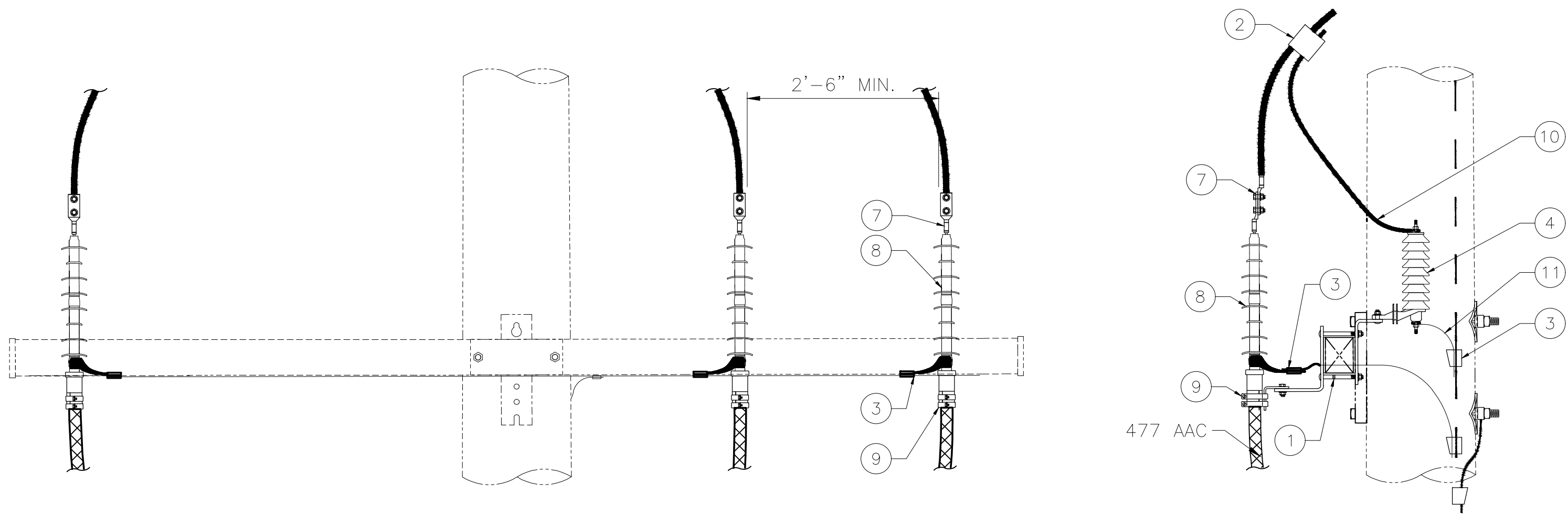
611		LIST OF MATERIALS (FOR 1 POLE) (4 REQUIRED)			
DWG. REF.	QTY.	DESCRIPTION	DET.	DWG. No. /CODE No.	
1	4	DEAD END TEE, DOUBLE	TG-27B		
2	1	OPGW DEAD END ASSEMBLY	TM-5		
3	2	DOUBLE GUY TO ONE ROD ASSEMBLY	TG-24B		
		SINGLE GUY TO ONE ROD ASSEMBLY	TG-24A		
	3	DEAD-END INSULATOR ASSEMBLY	TM-2A		
8	1	HORIZONTAL POST INSULATOR MOUNT, SINGLE	TM-4A		
6	1	HORIZONTAL POST INSULATOR MOUNT, DOUBLE	TM-4B		
7	3	HORIZONTAL POST JUMPER INSULATOR 90° ROTATED	TM-3B		
8	1	SINGLE WOOD POLE GROUNDING	TM-9A		
9	1	OPGW SPLUCE BOX POLE CONNECTION			
10	1	WOOD POLE-DOUGLAS FIR, CLASS H1, HT=70FT			
11	1	SWITCH ASSEMBLY, 34.5 KV, 600A, VERT. MOUNT.		S&C ALTUDY-rupter ED-642R4	
12	6	STANDARD PAD TERMINAL 600A FOR 350-600 KCMIL AL		S&C ALTUDY-rupter 5330-B	
13	2	BOLT, 5/8"Øx16" LG., SEE NOTE 2 MF LOCKNUT FOR 5/8" BOLT WASHER, CURVED, 4"SQ.x1/4" FOR 5/8" BOLT			

NOTES:

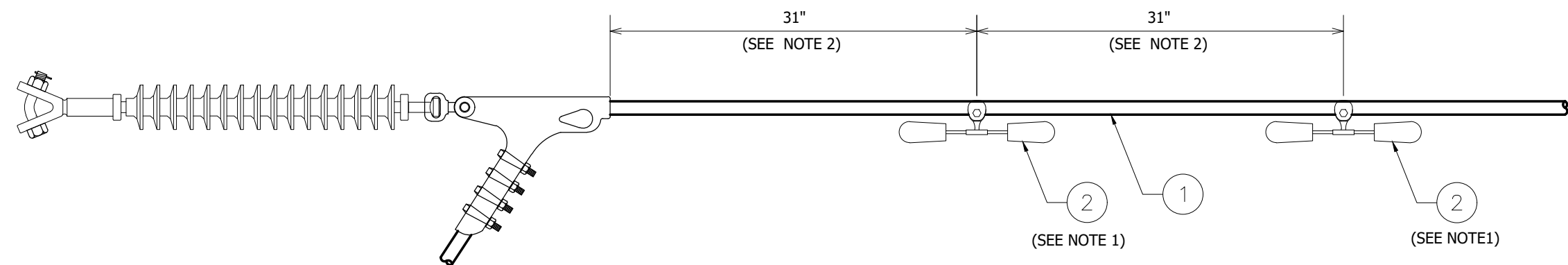
- REFER TO DRAWINGS 610 FOR POLES ARRANGEMENT.
- THE FOLLOWING MATERIALS ARE SPECIFIED ON THE PLAN AND PROFILE DRAWING: POLE, POLE GROUNDING ASSEMBLY, GUYING ASSEMBLIES, ANCHORS, AND ANY ADDITIONAL GROUNDING OR FOUNDATION UNITS.
- FASTENERS SHOULD EXTEND NOT LESS THAN 1/2" NOR MORE THAN 2-1/2" BEYOND THE FACE OF THE LAST NUT OR LOCKNUT. GALVANIZED BOLTS MUST NOT BE CUT OFF. WHERE BOLTS ARE NOT TO PROPER LENGTH DUE TO VARIATIONS IN THE MATERIALS, THE CONTRACTOR SHALL REPLACE THE FASTENERS WITH ONES OF PROPER LENGTH AT NO COST.



1
-
DETAIL
CROSSARM TO POLE CONNECTION



2
-
DETAIL
TERMINATOR & SURGE ARRESTER



NOTES:

- SEE STRUCTURE DATA SHEETS FOR DAMPER LOCATIONS AND QUANTITIES.
- CONDUCTOR DAMPER SPACING ONLY APPLICABLE TO FARGO DAMPERS.

3
-
DETAIL
CONDUCTOR DEADEND SPAN

DET.	1	BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION OF MATERIAL	CODE NO.	
-	-	-	-	
2	2	BOLT, MACHINE, 3/4"xREQ. LENGTH, SQ. HEAD, W/ SQ. NUT, GALV.	HUGHES 2721.618-6	
3	4	CONNECTOR, PARALLEL #2 & #6 CU, COMPRESSION	BURNDY YGHC2C2	
4	1	CROSSARM, 3-5/8"x 4-5/8"x 10' BRACELESS		
5	2	LOCKNUT, SQ., FOR 3/4" BOLT, GALV. STEEL	MACLEAN J8584	
6	2	NUT, SQ., FOR 3/4" BOLT, GALV. STEEL	HUGHES N70	
7	2	WASHER, CURVED, 4"x4"x3/16", FOR 3/4" BOLT	HUGHES CW70	
8	A/R	WIRE, AWG SIZE #4, STR. COPPERWELD HIDE W/ PVC JACKET, FT.	AFL CCS4STR4D-JV	

DET.	2	BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION OF MATERIAL	CODE NO.	
1	6	BRACKET, CUTOFF ARRESTOR	HUGHES A2185-B	
2	3	CLAMP, PARALLEL GROOVE, 0.666"-0.893" WIRE DIA.	BURNDY #YHR-700	
3	3	CONNECTOR, PARALLEL #2 & #6 CU, COMPRESSION	BURNDY YGHC2C2	
4	3	EQUIPMENT, SURGE ARRESTER, 36kv/29MCOV	COOPER URS36110A1A1B1A	
5	-			
6	-			
7	3	LUG, 2 HOLE, 4/0-600kcmil, AL	3M QL2-A-4/0-600	
8	3	TERMINATOR 34.5kv, SILICONE RUBBER COLD SHRINK KIT, 3/0-600 AWG RANGE	3M 7665-S-8	
9	3	TERMINATOR MOUNTING KIT, 1.8"-2.4" RANGE	3M MBS-6	
10	A/R	WIRE, 2/0 INSULATED COPPER, STRANDED, FT		
11	A/R	WIRE, #4 AWG, STR. COPPERWELD HIDE W/ PVC. JACKET, FT	AFL CCS4STR4D-JV	

DET.	3	BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION OF MATERIAL	CODE NO.	
1	A/R	CONDUCTOR 477 KCMIL 30/7 HEN/ACSR, 0.883" O.D.	-	
2	3	DAMPER, RANGE 0.859"-1.130", BREAK AWAY BOLTS	HUBBELL TJA1813SSAC	



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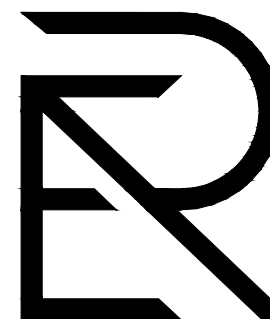
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REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPRVD.	P.E. STAMP
B	08/13/2024	ISSUED FOR PERMIT	VD	MS	MS	
A	05/03/2024	ISSUED FOR 60% REVIEW	VD	MS	MS	

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NEW YORK STATE

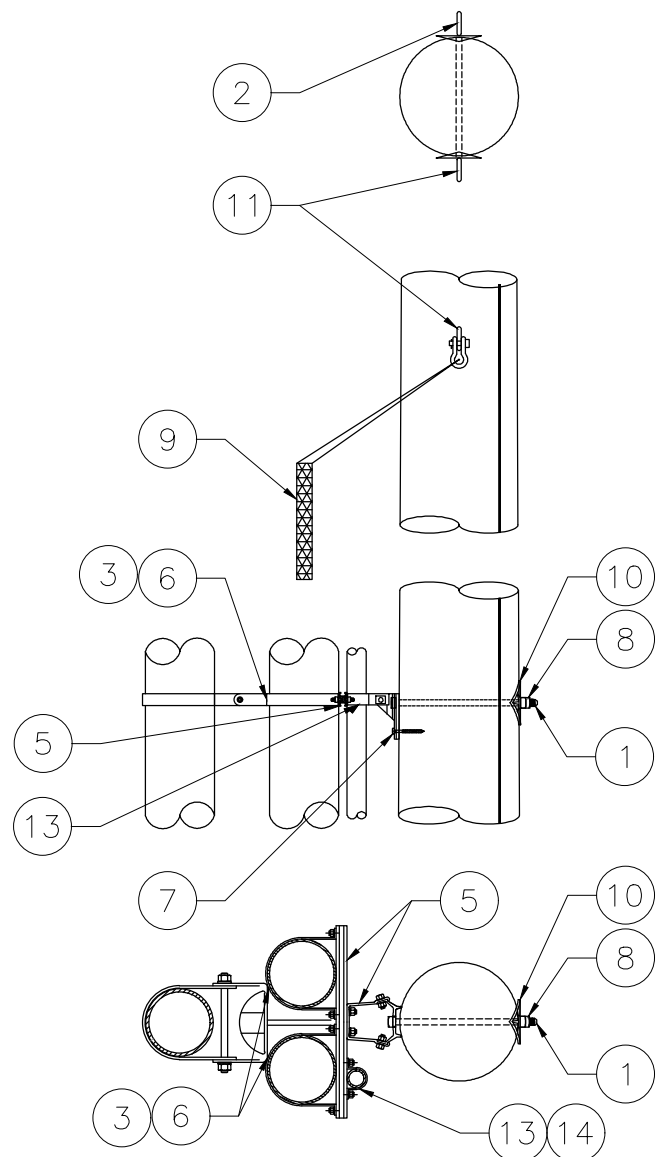


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40 TAMARACK LANE
NYSKAYUNA, NY 12309
(518) 225-9473

AGRICOLA WIND PROJECT - 180MWAC
LIBERTY RENEWABLES INC.
2598 BURNS RD., VENIXCE, NY 13147, CAYUGA COUNTY
34.5KV COLLECTION OVERHEAD LINE
34.5KV RISER

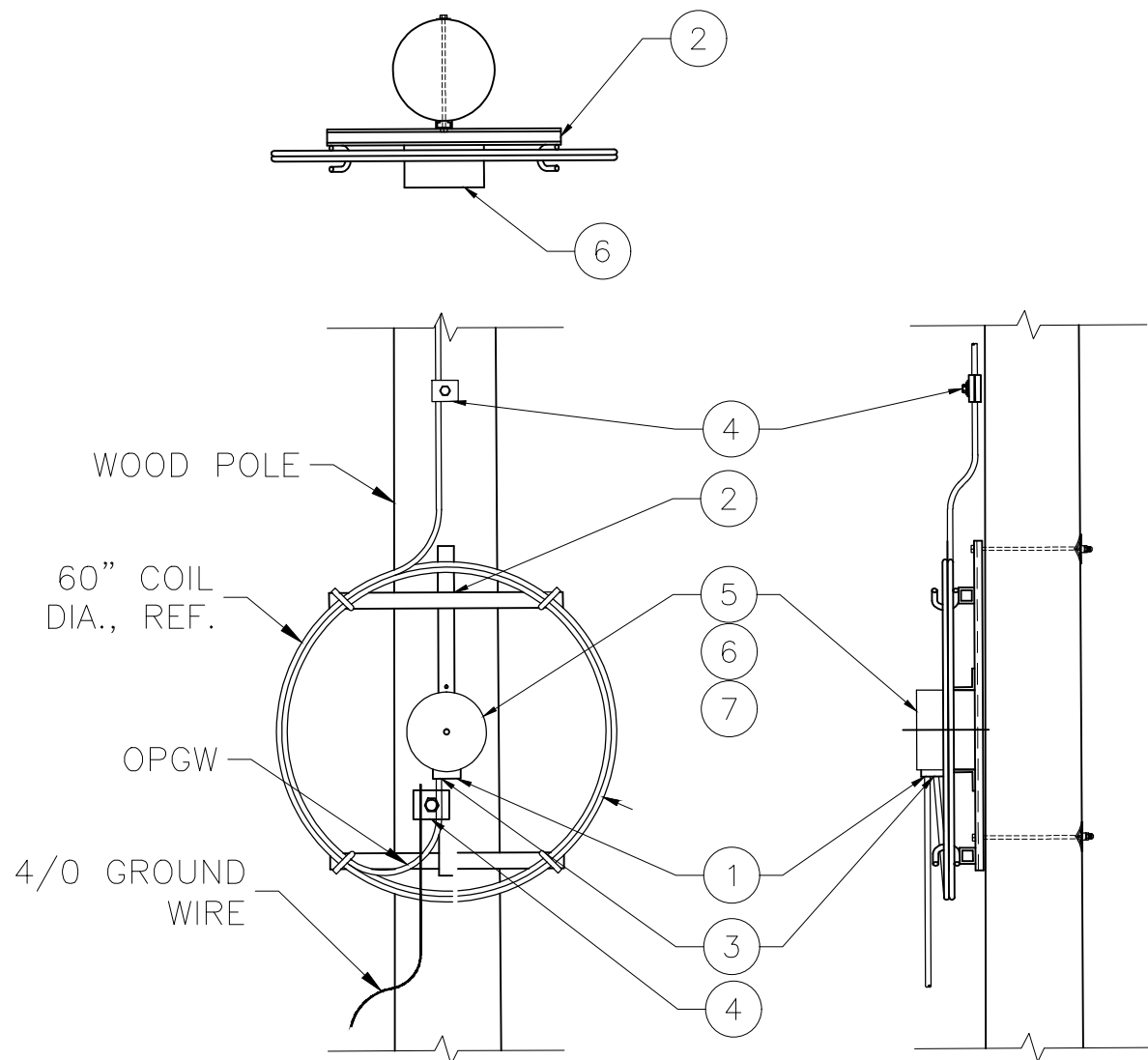
PROJ. NO.	AGCL	
DWG. NO.	AGCL-612	
SIN	1	REV. B
SCALE	AS SHOWN	

DET. 1	BILL OF MATERIALS			NOTES
ITEM	QTY.	DESCRIPTION OF MATERIAL	CODE NO.	
1	3	BOLT, MACHINE, 5/8" x REQ. LENGTH, SQ. HEAD, W/ SQ. NUT, GALV.		
2	1	BOLT, SHOULDER EYE, 5/8"x18"	HUGHES 2721.618-6	
3	1	CONDUIT ELBOW, 6" PVC SCH 80, 48" RAD.		
4	9	CONDUIT HANGER, STRAP KITS 6"ø, W/BOLT, NUT & WASHER	ALUMA-FORM STK-6	
5	9	CONDUIT HANGER, 24" STAND OFF BRACKET 4 WAY T-SLOT (HOLE SIZE 5/8")	ALUMA-FORM 9-CS0-24 (51965)	
6	A/R	CONDUIT 6" PVC SCH. 80, FT.		
7	9	LAG SCREW, FETTER DRIVE 1/2"x4"	HUGHES LS54	
8	1	LOCKNUT, SQUARE, FOR 5/8" BOLT, GALV. STEEL	MACLEAN J8583	
9	3	SUPPORT GRIP, SINGLE EYE, 2.0"-2.5" CABLE SIZE, SINGLE WEAVE TINE COATED BRONZE	HUBBELL 02202021	
10	1	WASHER, CURVED, 4"x4"x3/16", FOR 5/8" BOLT	HUGHES CW60	
11	1	NUT, OVAL EYE, 5/8"	JOSLYN J1092	
12	1	CONDUIT ELBOW, 3" PVC SCH 80, 36" RAD.		
13	3	CONDUIT HANGER, STRAP KITS 3"ø, W/BOLT, NUT & WASHER	ALUMA-FORM STK-3	
14	A/R	CONDUIT 3" PVC SCH. 80, FT.		

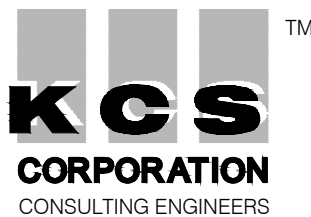


1
- **DETAIL**
CONDUIT MOUNTING BRACKET POLE CONNECTIONS

DET. 1	BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION OF MATERIAL	CODE NO.
1	-		
2	1	OPGW COIL BRACKET	AFL CB-44
3	1	OPGW CONNECTOR KIT FOR OPGW 0.646"ø CABLE	AFL OCKS186646
4	8	OPGW DOWNLEAD CLAMP FOR 0.646"ø CABLE W/ TENSION BANDING BRACKET KIT	AFL OGW 562/655
5	2	OPGW GROUNDING CLAMP FOR BARE COPPER WIRE 4/0 AWG 19 STRANDS, 0.528"ø	AFL OBCQN2E21
6	1	OPGW SPLICE ENCLOSURE (INCL. 4 SLICE TRAYS FOR UP TO 48 FIBERS)	AFL SB01-48 (4 ST1)
7	1	OPGW SPLICE PROTECTOR	PROTECTION SLEEVES INCL. IN ST1



2
- **DETAIL**
OPGW SPLICE BOX POLE CONNECTION



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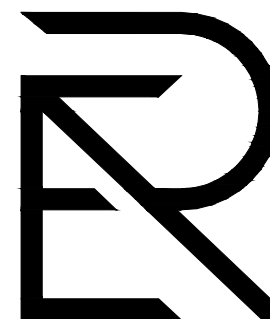
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B	08/13/2024	ISSUED FOR PERMIT	VD	MS	MS	
A	05/03/2024	ISSUED FOR 60% REVIEW	VD	MS	MS	

DRAWING CREATED
BY SEEMESH M.
SETHI, P.E.,
NEW YORK STATE



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AGRICOLA WIND PROJECT - 180MWAC
LIBERTY RENEWABLES INC.
2598 BURNS RD., VENIXCE, NY 13147, CAYUGA COUNTY
34.5KV COLLECTION OVERHEAD LINE
34.5KV RISER

PROJ. NO.	AGCL	
DWG. NO.	AGCL-613	
SIN	1	REV. B
SCALE:	AS SHOWN	