

LETTING ITEM NO. 16A  
 APRIL 28, 2023 LETTING

# CONSTRUCTION PLANS FOR GREENVILLE AIRPORT

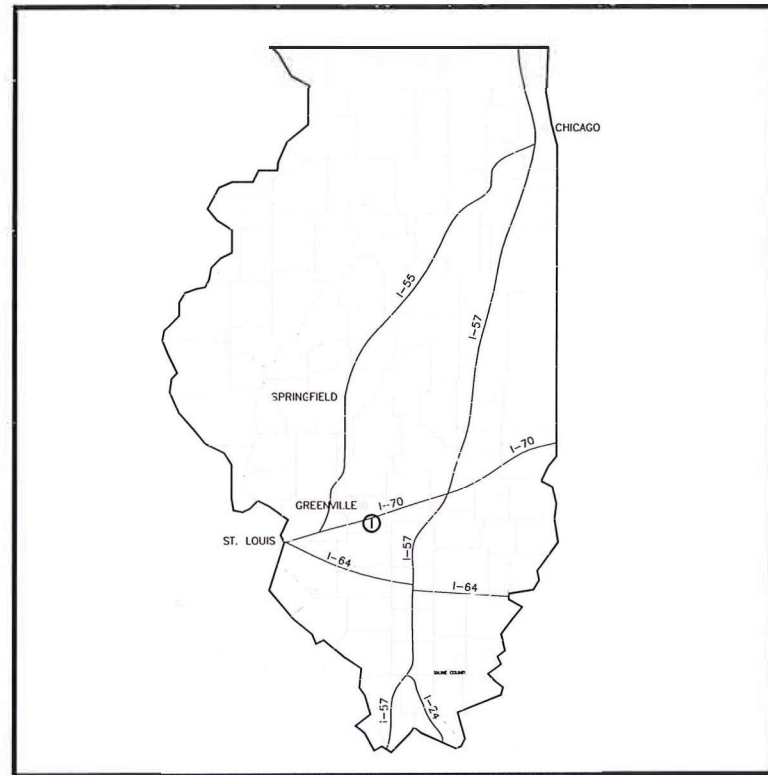
GR012  
 TOTAL SHEETS: 16

## REPLACE EXISTING WEATHER EQUIPMENT WITH AWOS-II EQUIPMENT

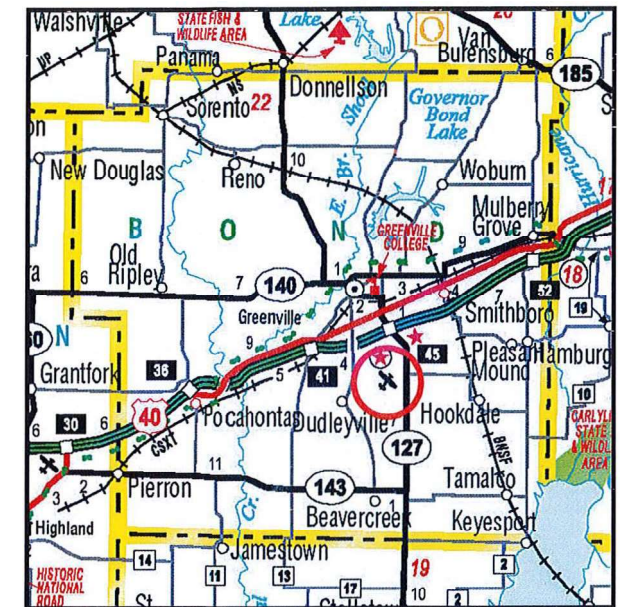
100% SUBMITTAL MARCH 3, 2023

ILLINOIS PROJECT NUMBER: GRE-4879  
 SBG PROJECT NUMBER: 3-17-SBGP-162/171/184

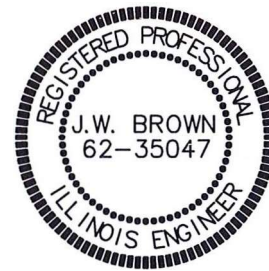
GREENVILLE, ILLINOIS  
 BOND COUNTY



LOCATION MAP



VICINITY MAP



**DESIGN INFORMATION**  
 - CRITICAL AIRCRAFT = CESSNA CITATION III  
 - AIRCRAFT APPROACH CATEGORY (AAC) = B  
 - AIRPLANE DESIGN GROUP (ADG) = II  
 - TAXIWAY DESIGN GROUP (TDG) = 2  
 - DEPARTURE WEIGHT = 22,000 LBS.

BROWN AND ROBERTS, INC.  
 CONSULTING ENGINEER  
 PRESIDENT  
 SUBMITTED BY: *J.W. Brown*  
 JIM W. BROWN  
 DATE SUBMITTED: MARCH 3, 2023  
 LICENSE NUMBER: 062-035047  
 LICENSE EXPIRATION DATE: NOVEMBER 30, 2023

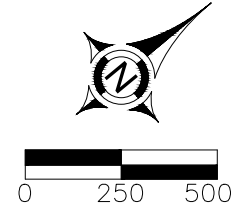
PLANS PREPARED BY:  
  
 BROWN AND ROBERTS, INC.  
 1 WESTRIDGE ROAD  
 HARRISBURG, IL. 62946  
 (618) 252-8111

DON FULLER  
 ELECTRICAL ENGINEER  
 SUBMITTED BY: *Don Fuller*  
 DON FULLER  
 DATE SUBMITTED: MARCH 3, 2023  
 LICENSE NUMBER: 062-041196  
 LICENSE EXPIRATION DATE: NOVEMBER 30, 2023

GREENVILLE AIRPORT AUTHORITY  
 CHAIRMAN  
 APPROVED BY: *Randy Vead* 3/3/2023  
 DATE  
 SECRETARY  
 ATTESTED BY: *Donald L. Fuller* 3/3/2023  
 DATE

SUMMARY OF QUANTITIES			
ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
AR108052	POWER CABLE IN CONDUIT	FOOT	800
AR109200	INSTALL ELECTRICAL EQUIPMENT	L SUM	1
AR110014	4" DIRECTIONAL BORE	FOOT	350
AR110610	ELECTRICAL HANDHOLE	EACH	4
AR150520	MOBILIZATION	L SUM	1
AR152411	UNCLASSIFIED EXCAVATION	L SUM	1
AR162506	CLASS E FENCE 6'	FOOT	124
AR162606	CLASS E GATE - 6'	EACH	1
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	200
AR801251	REMOVE EXISTING WEATHER OBSERVATION EQUIPMENT	L SUM	1
AR801252	AWOS-II, INSTALLED	L SUM	1
AR901525	SEEDING	L SUM	1

INDEX OF SHEETS	
SHEET NUMBER	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES & INDEX OF SHEETS
3	CONSTRUCTION SAFETY & PHASING PLAN
4	SITE PLAN
5	AWOS SITE PLAN
6	TOWER CRADLE SITE PLAN
7	AWOS TOWER DETAILS
8	AWOS FOUNDATION DETAILS
9	ELECTRICAL DETAILS 1
10	ELECTRICAL DETAILS 2
11	ELECTRICAL DETAILS 3
12	ELECTRICAL DETAILS 4
13	ELECTRICAL DETAILS 5
14	GENERAL ELECTRICAL NOTES
15	FENCE DETAILS 1
16	FENCE DETAILS 2



**SCOPE OF WORK**

THE PROJECT SCOPE CONSISTS OF THE REMOVAL OF THE EXISTING WEATHER OBSERVATION SYSTEM AND CONSTRUCTION OF A NEW AWOS-II WEATHER OBSERVATION SYSTEM.

**PROPOSED SAFETY PLAN**

GENERAL- THE GREENVILLE AIRPORT CURRENTLY HAS A TURF RUNWAY 9-27 WHICH IS 2822 FT. x 250 FT. AND A PAVED RUNWAY 18-36 WHICH IS 4001 FT. x 75 FT.

IT IS ANTICIPATED THAT NO CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT WILL IMPACT ANY AIRCRAFT OPERATIONS ON THE AIRPORT RUNWAYS.

**ANY WORK WITHIN 125' OF THE CENTERLINE OF A RUNWAY WILL REQUIRE CLOSURE OF THAT RUNWAY.**

THE CONTRACTOR SHALL SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) CONFIRMING COMPLIANCE WITH THE CONSTRUCTION SAFETY PHASING PLAN (CSPP) PRIOR TO THE ISSUANCE OF THE NOTICE TO PROCEED AS SPECIFIED IN FAA AC 150/5370-2.

**CONTRACTOR'S RESPONSIBILITIES**

IDENTIFICATION- THE CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE PROPERLY MARKED WITH 3-FOOT SQUARE INTERNATIONAL ORANGE AND WHITE CHECKERED FLAGS ANYTIME THEY ARE ON AIRPORT PROPERTY.

THE CONTRACTOR AND HIS EMPLOYEES SHALL BE RESTRICTED TO THE WORK AREA.

EQUIPMENT PARKING AND STORAGE- THE CONTRACTOR'S EQUIPMENT PARKING, STORAGE, AND EMPLOYEE PARKING WILL BE AT THE LOCATION SHOWN ON THIS SHEET. ONLY CONTRACTOR VEHICLES AND EQUIPMENT REQUIRED FOR CONSTRUCTION WILL BE ALLOWED OUTSIDE THIS AREA.

BARRICADES AND TRAFFIC CONES- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS REQUIRED AND AS DIRECTED BY THE RESIDENT ENGINEER. BARRICADES, THEIR MAINTENANCE, PLACEMENT, AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING PAVEMENTS CAUSED BY HIS PERSONNEL OR EQUIPMENT.

**ACCESS/HAUL ROUTE AND EQUIPMENT PARKING**

THE CONTRACTOR WILL USE THE DESIGNATED ACCESS/HAUL ROUTE AND EQUIPMENT PARKING AREA SHOWN ON THIS SAFETY PLAN. THE PROPOSED EQUIPMENT PARKING AREA WILL BE APPROXIMATELY 70-FT BY 150-FT. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED ACCESS/HAUL ROUTE AND PARKING AREA THROUGHOUT THE COURSE OF THE PROJECT. AT THE CONCLUSION OF THE PROJECT, ALL AREAS DISTURBED WILL BE RESTORED AS NEEDED TO ITS ORIGINAL STATE. RESTORATION OF THE ACCESS/HAUL ROUTE AND EQUIPMENT PARKING AREA WILL BE CONSIDERED INCLUDED WITH THE AR150540 HAUL ROUTE PAY ITEM AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**UTILITY NOTE**

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AND ORGANIZATIONS THAT HAVE LINES OR CONDUITS IN THE PROPOSED WORK AREA. ALL LINES AND CONDUITS SHALL BE LOCATED AND IDENTIFIED FOR DEPTH BEFORE ANY EXCAVATION BEGINS. THE CONTRACTOR SHALL CALL JULIE (1-800-892-0123) TO ACCOMPLISH THESE REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL NON-JULIE UTILITIES LOCATED WITHIN THE PROPOSED CONSTRUCTION LIMITS. THESE UTILITIES ARE TO BE LOCATED PRIOR TO THE START OF CONSTRUCTION.

**J.U.L.I.E. INFORMATION**

COUNTY.....BOND  
 CITY.....GREENVILLE (4 MI SOUTHEAST)  
 TOWNSHIP.....CENTRAL  
 SECTION NO.....36  
 NEAREST MAJOR ROAD INTERSECTION...ILLINOIS RT. 127 & SKY LANE  
 AIRPORT ADDRESS...GREENVILLE AIRPORT  
 1374 SKY LANE  
 GREENVILLE, IL 62246

**HEIGHT OF CONSTRUCTION EQUIPMENT**

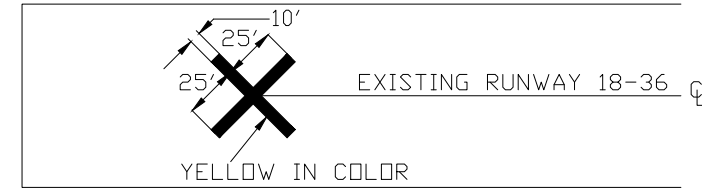
THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT IS 40 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A CRANE.

**AIRPORT SECURITY**

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE PROPOSED HAUL ROUTE SHOWN ON THIS SAFETY PLAN IS THE ONLY ACCESS CONTRACTOR EQUIPMENT AND PERSONNEL WILL BE ALLOWED TO USE. THE CONTRACTOR SHALL PROVIDE BARRICADES AT THIS ACCESS AND ENSURE THE BARRICADES ARE IN PLACE AT THE END OF EACH WORKING DAY.

**AIRCRAFT OPERATIONAL AREA**

THE CONTRACTOR, HIS EMPLOYEES, OR ANY EQUIPMENT WILL NOT PROCEED WITH ANY WORK WITHIN THE AIRCRAFT OPERATIONAL AREA WITHOUT FIRST CLOSING THE RUNWAY.



**DETAIL OF CROSS FOR CLOSED RUNWAY**  
 "NOT TO SCALE"

**NOTE:**

THE COST OF CONSTRUCTING, PLACING, MAINTAINING, AND REMOVING CROSSES WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE CROSSES WILL BE YELLOW IN COLOR AND SHALL BE MADE OF A SUITABLE MATERIAL AS APPROVED BY THE RESIDENT ENGINEER. THE CROSSES WILL BE PLACED AT THE ENDS OF THE RUNWAY AND SECURED IN A MANNER APPROVED BY THE RESIDENT ENGINEER. THE PROPOSED CROSSES WILL BE PLACED WHEN THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES AT NO ADDITIONAL COST TO THE CONTRACT.

**RUNWAY CLOSURE PROCEDURES:**

- \* CONTACT THE AIRPORT MANAGER OR HIS ASSIGNED REPRESENTATIVE.
- \* ISSUANCE OF NOTAM BY THE AIRPORT MANAGER OR HIS ASSIGNED REPRESENTATIVE.
- \* PLACEMENT OF CROSSES (SEE DETAIL THIS SHEET).
- \* PLACEMENT OF LIGHTED BARRICADES. ONLY AT THE TIME THAT ALL OF THE ABOVE ARE COMPLETED MAY ANY CONSTRUCTION OPERATIONS WITHIN 200-FT OF THE AFFECTED RUNWAY CENTERLINE AND WITHIN 600 FT OF THE RUNWAY END BEGIN.
- \* RUNWAY LIGHTS SHALL BE DISABLED

**RUNWAY RE-OPENING PROCEDURES:**

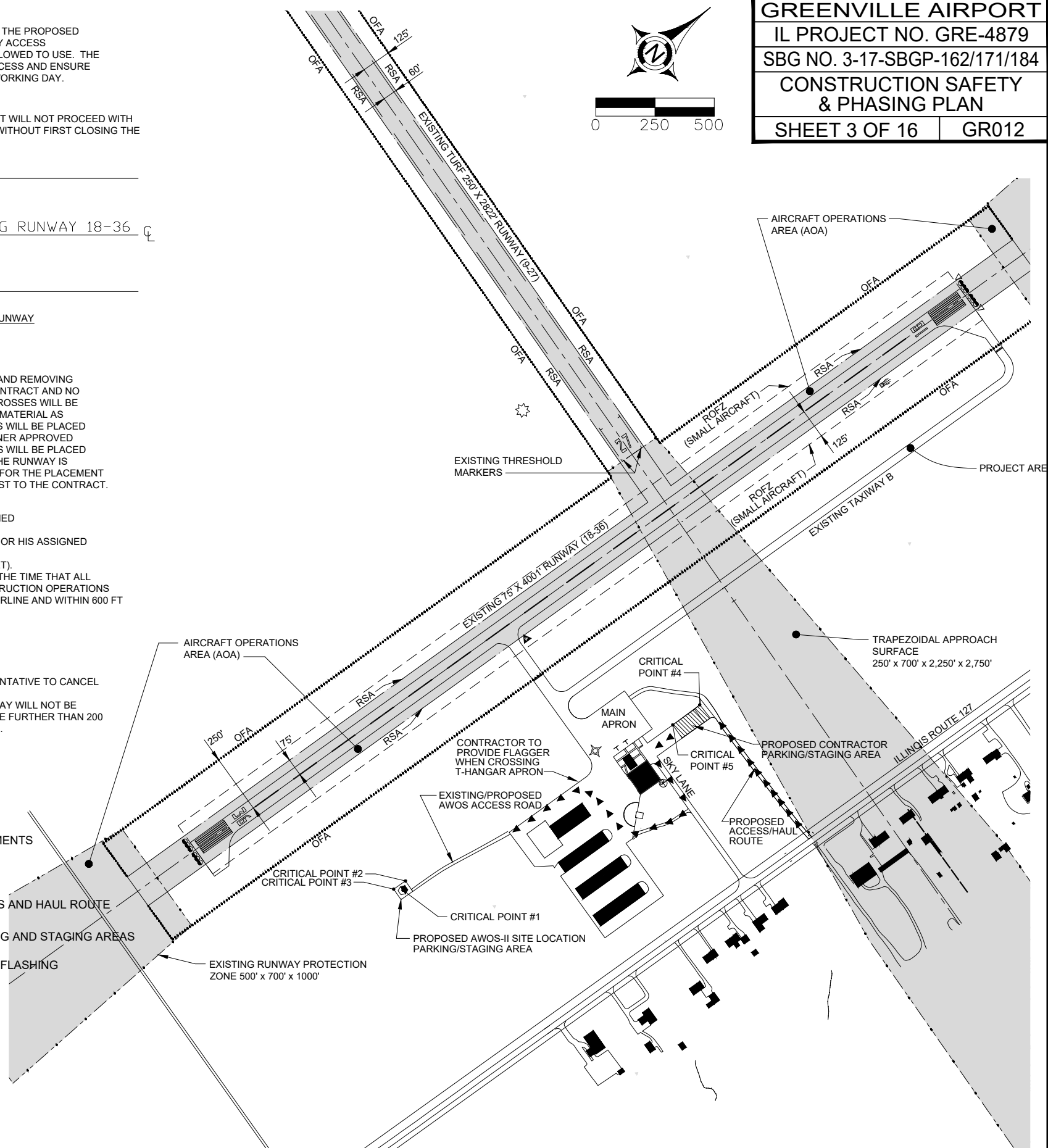
- \* REMOVE CROSSES.
- \* REMOVE LIGHTED BARRICADES.
- \* NOTIFY THE AIRPORT MANAGER OR HIS REPRESENTATIVE TO CANCEL THE NOTAM.
- \* CANCELLATION OF THE NOTAM. A CLOSED RUNWAY WILL NOT BE RE-OPENED UNTIL ALL EQUIPMENT AND WORK ARE FURTHER THAN 200 FEET FROM THE AFFECTED RUNWAY CENTERLINE.
- \* RUNWAY LIGHTS SHALL BE REACTIVATED.

**LEGEND**

- EXISTING PAVEMENT
- PROPOSED PAVEMENT IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED CONTRACTOR ACCESS AND HAUL ROUTE
- PROPOSED CONTRACTOR PARKING AND STAGING AREAS
- IDOT TYPE II BARRICADE WITH RED FLASHING LIGHTS - 10' MAX SPACING
- AIRCRAFT OPERATIONS AREA (AOA)

**CRITICAL POINTS**

NO.	LATITUDE	LONGITUDE	GROUND ELEVATION	DESCRIPTION
1	38° 49' 54.76" N	89° 22' 26.85" W	536.0' MSL	PROPOSED AWOS TOWER (TOP 30' AGL)
2	38° 49' 54.96" N	89° 22' 26.95" W	536.0' MSL	PROPOSED NW CORNER AWOS FENCE (TOP 6' AGL)
3	38° 49' 54.66" N	89° 22' 26.95" W	536.0' MSL	PROPOSED SW CORNER AWOS FENCE (TOP 6' AGL)
4	38° 50' 09.34" N	89° 22' 25.68" W	537.0' MSL	PROPOSED NW CORNER STAGING AREA
5	38° 50' 07.86" N	89° 22' 25.67" W	537.0' MSL	PROPOSED SW CORNER STAGING AREA



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ACCESS ROAD AND AWOS SITE WORK NOTES:

THE CONTRACTOR SHALL EXCAVATE THE TOP SIX (6) INCHES OF EXISTING EARTH FROM THE PROPOSED AWOS SITE AND DISPOSE OF OFF THE AIRPORT SITE BY THE CONTRACTOR.

THE PROPOSED EXCAVATED MATERIAL SHALL BE PAID FOR UNDER ITEM AR152411: UNCLASSIFIED EXCAVATION, PER LUMP SUM.

THE CONTRACTOR SHALL GRADE THE EXISTING AWOS ACCESS ROAD TO A WIDTH OF 12' PRIOR TO PLACEMENT OF CRUSHED AGGREGATE BASE COURSE.

THE GRADING WORK SHALL BE PAID FOR UNDER ITEM AR152411: UNCLASSIFIED EXCAVATION, PER LUMP SUM.

THE CONTRACTOR SHALL PLACE CRUSHED AGGREGATE BASE COURSE OVER THE EXISTING AWOS ACCESS ROAD AT A DEPTH OF FOUR (4) INCHES. THE CRUSHED AGGREGATE BASE COURSE WILL BE COMPACTED WITH A VIBRATORY ROLLER TO THE SATISFACTION OF THE RESIDENT ENGINEER.





THE CONTRACTOR SHALL PLACE CRUSHED AGGREGATE BASE COURSE OVER THE PROPOSED AWOS SITE AT A DEPTH OF SIX (6) INCHES. THE CRUSHED AGGREGATE BASE COURSE SHALL BE COMPACTED WITH A VIBRATORY ROLLER TO THE SATISFACTION OF THE RESIDENT ENGINEER.

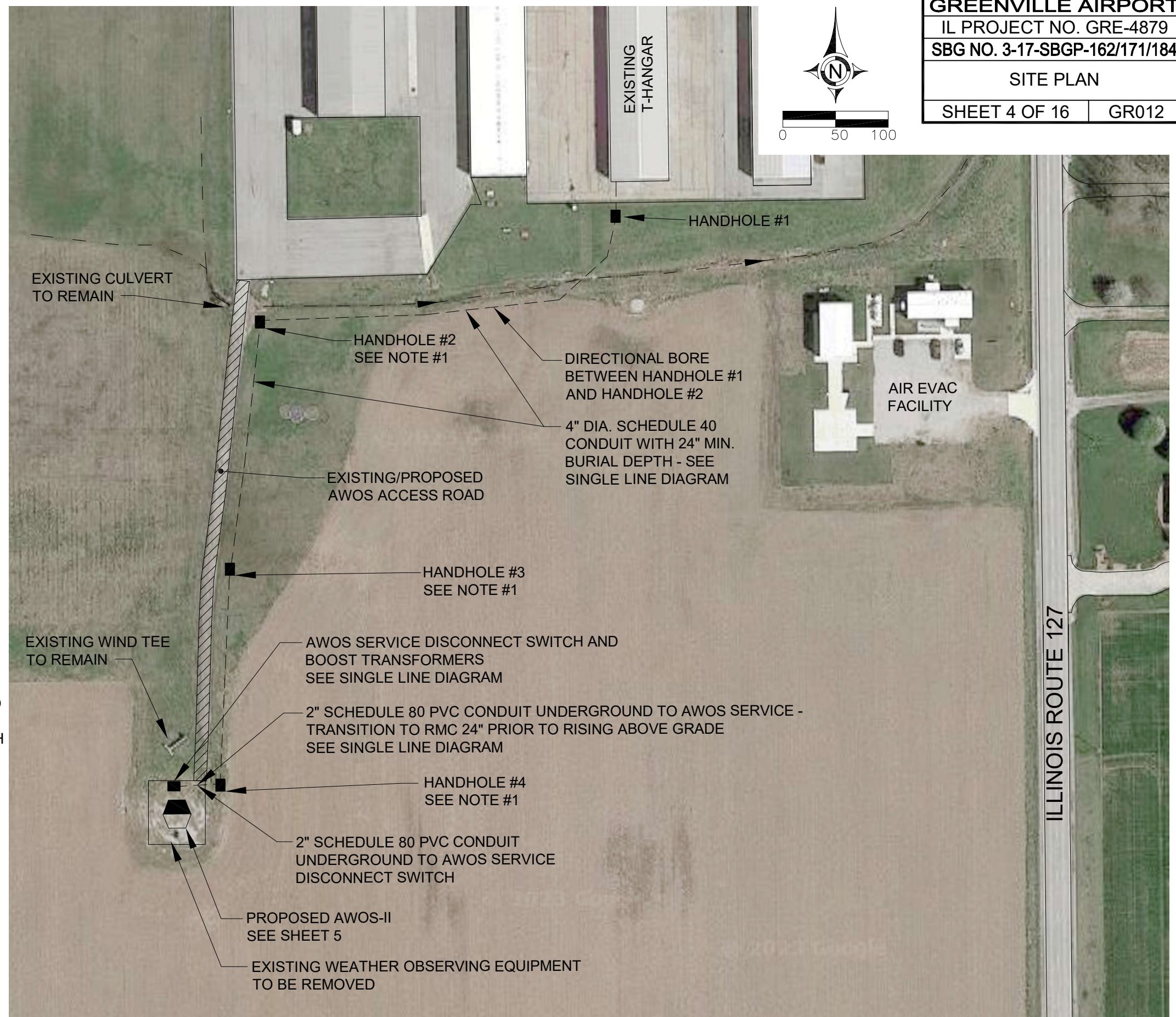
PLACEMENT OF CRUSHED AGGREGATE BASE COURSE WILL BE PAID FOR UNDER ITEM AR209510: CRUSHED AGGREGATE BASE COURSE - PER TON.

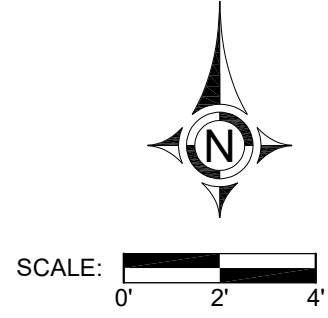
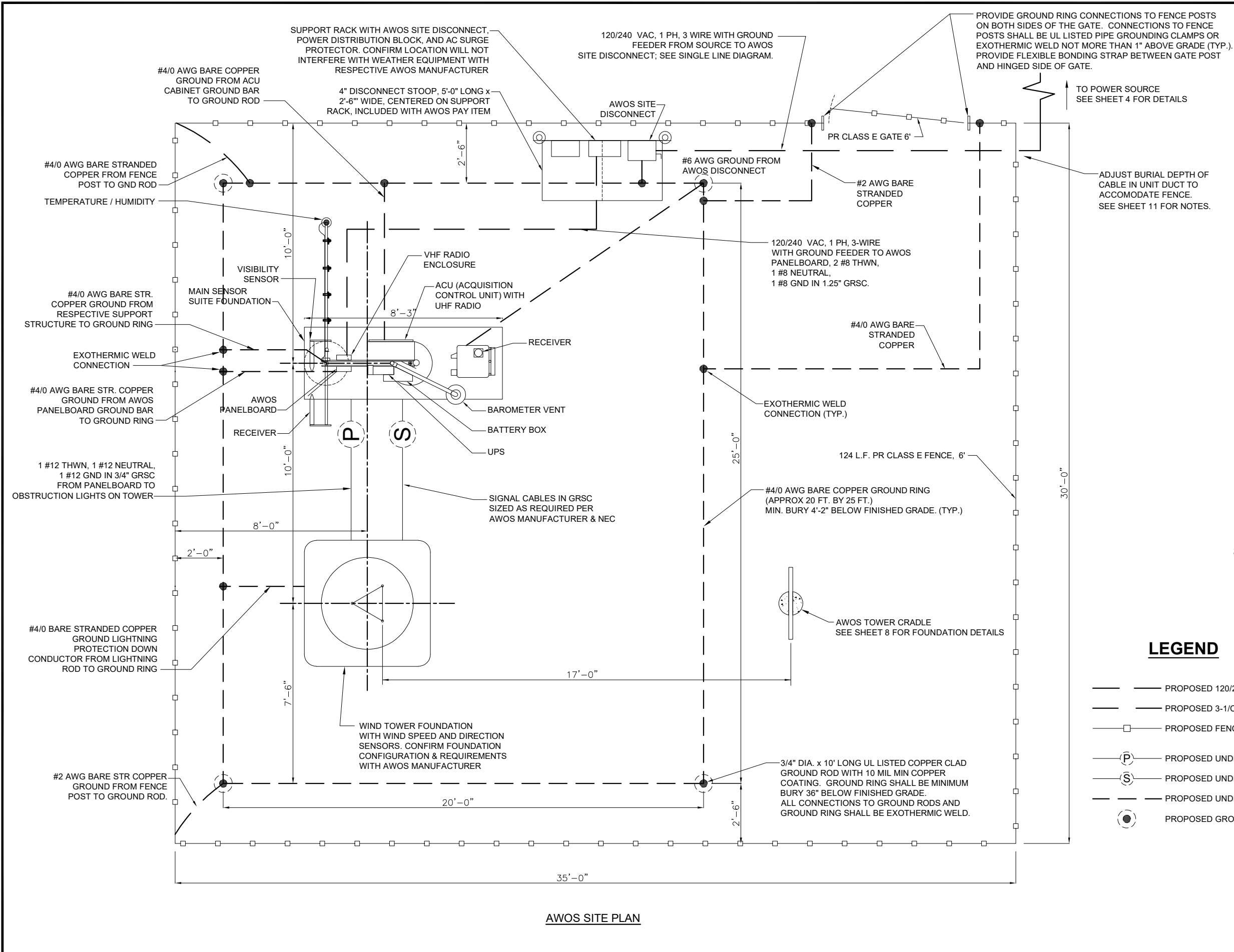
ELECTRICAL HANDHOLE NOTES:

1. ELECTRICAL HANDHOLES SHALL BE FLUSH IN-GROUND PULL BOX 17"W x 30"L x 30"D, EQUAL TO HUBBELL #PG1730HH0081, TIER 22, OR APPROVED EQUAL, MEETING IDOT SPECIFICATIONS FOR FLUSH IN-GROUND PULL BOXES. BOXES AND LIDS SHALL HAVE GASKETS.
2. BOXES AND LIDS SHALL HAVE LOGO "DANGER - HIGH VOLTAGE"

LEGEND

-  PROPOSED AWOS
-  PROPOSED BURIED ELECTRIC IN CONDUIT
-  PROPOSED ELECTRIC HANDHOLE
-  PROPOSED AWOS ACCESS ROAD



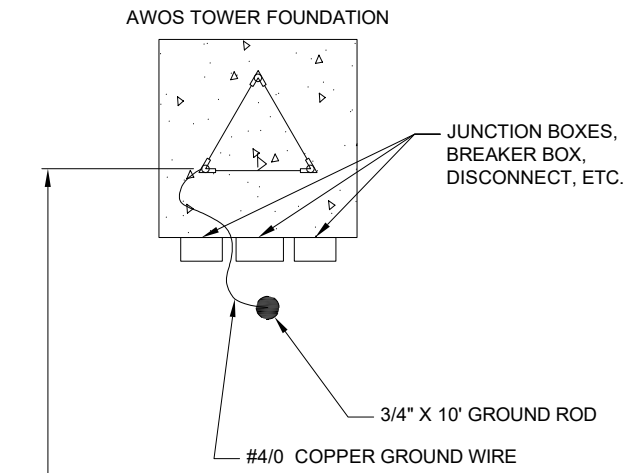


**LEGEND**

- PROPOSED 120/240 VAC, 1PH, 3W, FEEDER IN GRSC
- PROPOSED 3-1/C #6 XLP-USE, 600V CABLE IN UNIT DUCT
- PROPOSED FENCE
- Ⓟ PROPOSED UNDERGROUND AWOS EQUIPMENT POWER WIRING IN GRSC
- Ⓢ PROPOSED UNDERGROUND AWOS SIGNAL WIRING IN GRSC
- PROPOSED UNDERGROUND COPPER GROUNDING ELECTRODE CONDUCTOR
- PROPOSED GROUND ROD

**AWOS SITE PLAN**

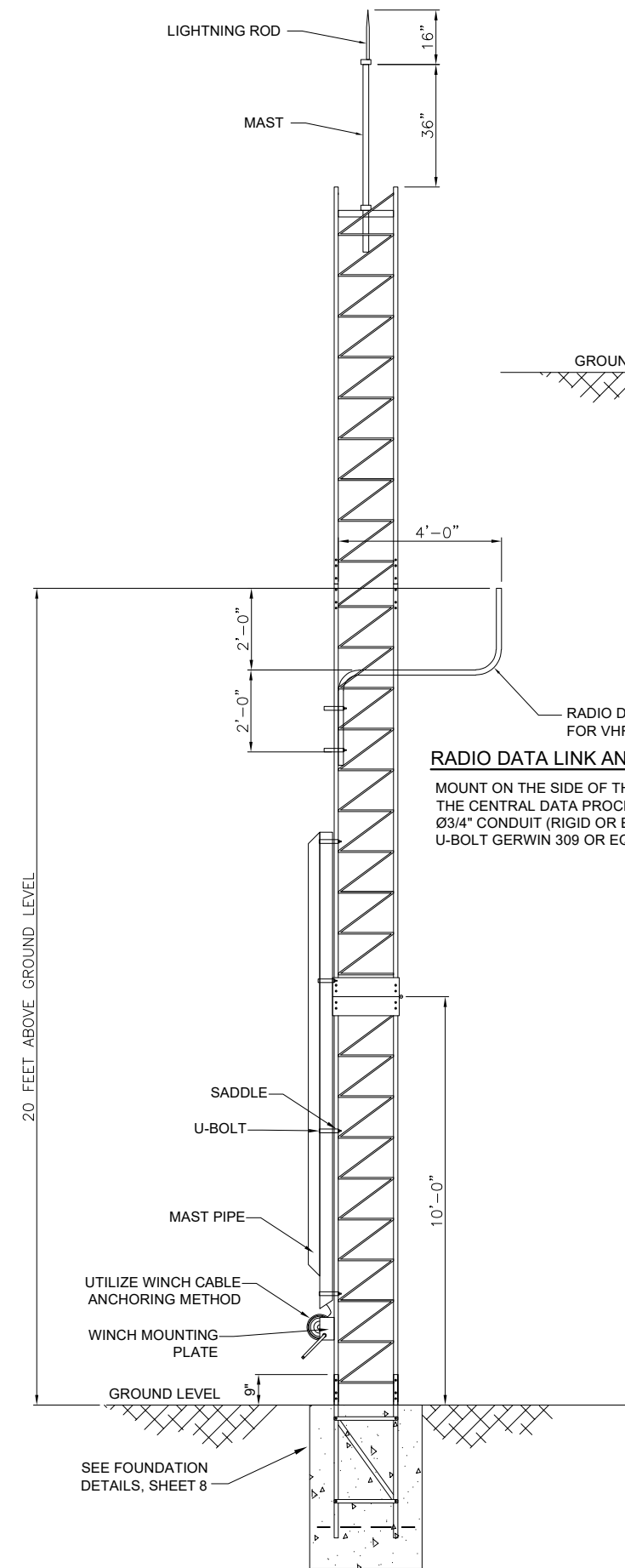
22 Mar 2023 - 4:32pm X:\2021\21181\oc\Plans\5-14 AWOS and Electrical Details.dwg: Layout Tab '5-AWOS Site Plan'



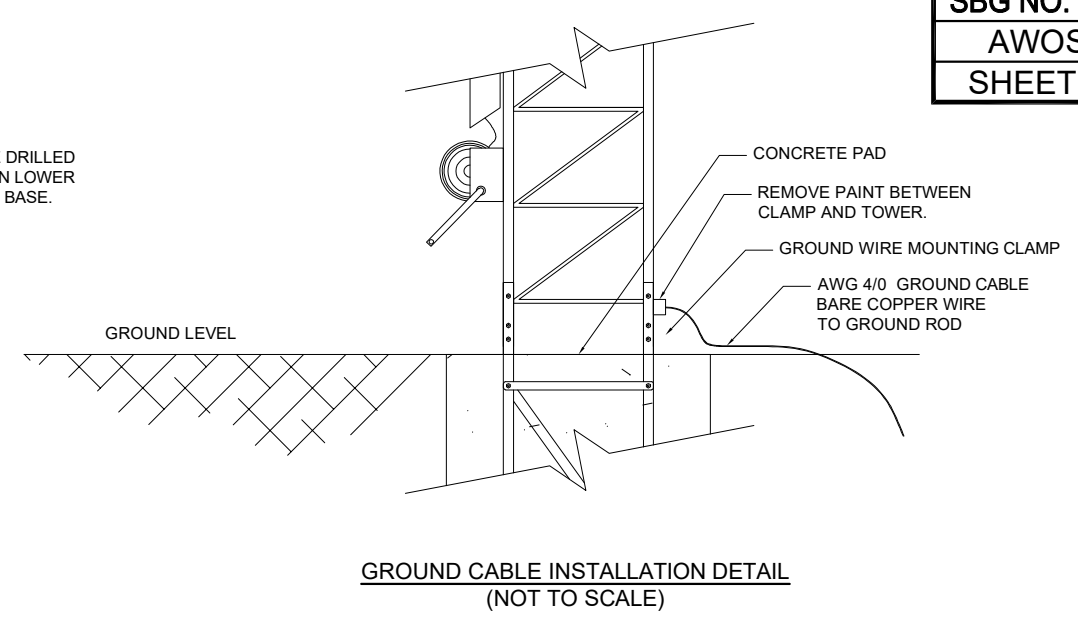
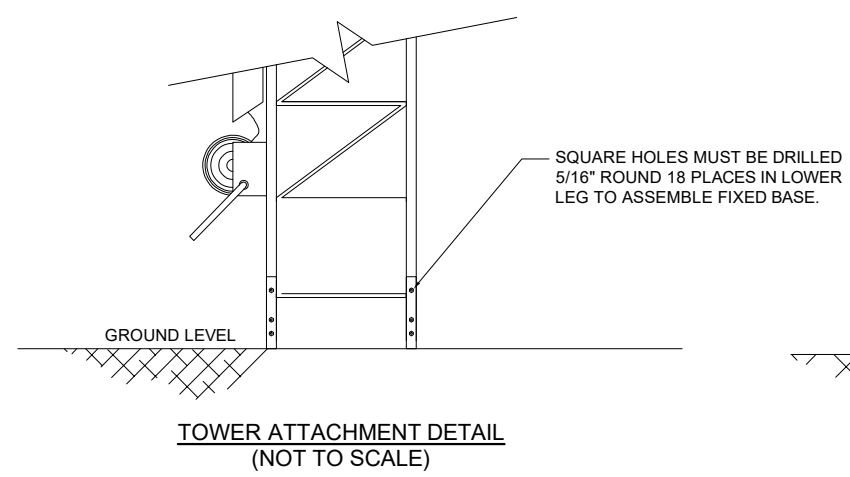
NOTES:

1. DO NOT BEND GROUNDING CABLE TO LESS THAN 8" RADIUS

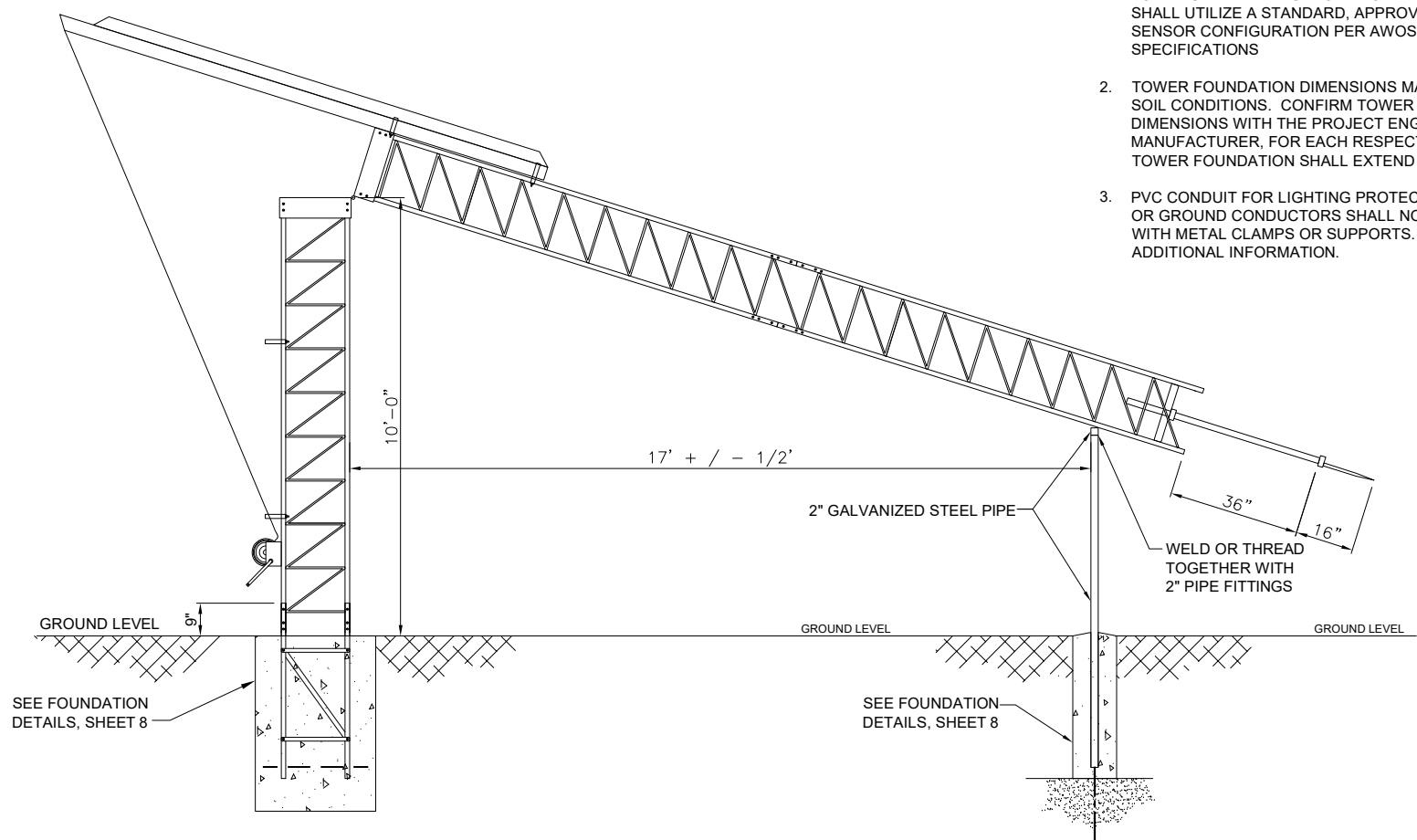
TOWER PAD & CRADLE - SITE LAYOUT AND GROUNDING



**RADIO DATA LINK ANTENNA MAST**  
 MOUNT ON THE SIDE OF THE TOWER NEAREST THE CENTRAL DATA PROCESSOR EQUIPMENT. Ø3/4" CONDUIT (RIGID OR EMT.) 1 REQUIRED. U-BOLT GERWIN 309 OR EQUIVALENT REQUIRED.



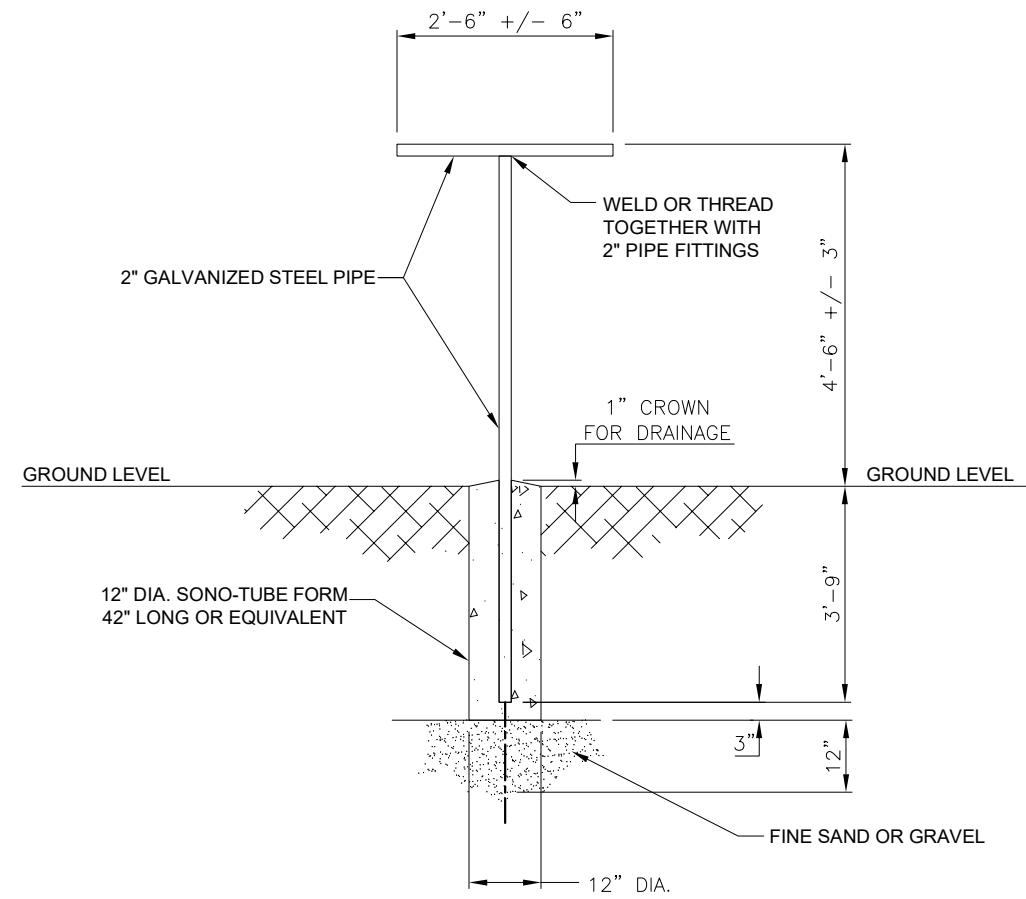
- TOWER DETAIL NOTES:**
1. THE TOWER BASE DETAIL, AND SENSOR CONFIGURATION ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT DETAILED BASE DRAWINGS, TOWER DRAWINGS, AND SENSOR CONFIGURATIONS TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. THIS DETAIL IS FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR SHALL UTILIZE A STANDARD, APPROVED TOWER AND SENSOR CONFIGURATION PER AWOS MANUFACTURER'S SPECIFICATIONS
  2. TOWER FOUNDATION DIMENSIONS MAY VARY DUE TO SOIL CONDITIONS. CONFIRM TOWER FOUNDATION DIMENSIONS WITH THE PROJECT ENGINEER AND AWOS MANUFACTURER, FOR EACH RESPECTIVE SITE. TOWER FOUNDATION SHALL EXTEND BELOW FROST LINE.
  3. PVC CONDUIT FOR LIGHTING PROTECTION CONDUCTORS OR GROUND CONDUCTORS SHALL NOT BE ENCIRCLED WITH METAL CLAMPS OR SUPPORTS. SEE SPECS FOR ADDITIONAL INFORMATION.





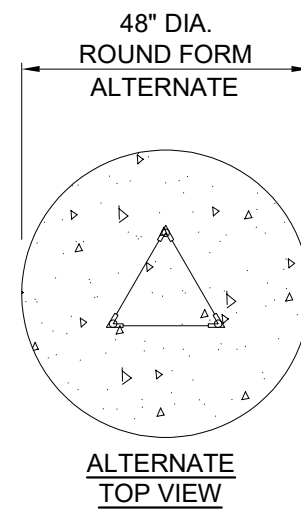
**NOTES:**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE AWOS TOWER AND ALL ITS ATTACHMENTS HAS SUFFICIENT CLEAR SPACE WHEN LOWERED INTO THE FOLD OVER POSITION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE AWOS TOWER IS ORIENTED IN THE TOWER FOUNDATION TO FACILITATE LOWERING INTO THE FOLD OVER POSITION ON THE CRADLE.
3. ALL FIELD WELDS SHALL BE COATED WITH ANTI-RUST GRAY COLORED PAINT.

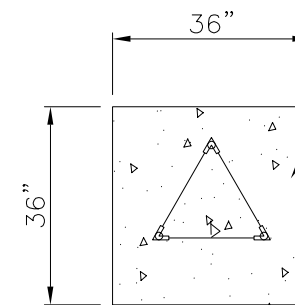


**FOLDOVER TOWER CRADLE FOUNDATION DETAILS**

(NOT TO SCALE)

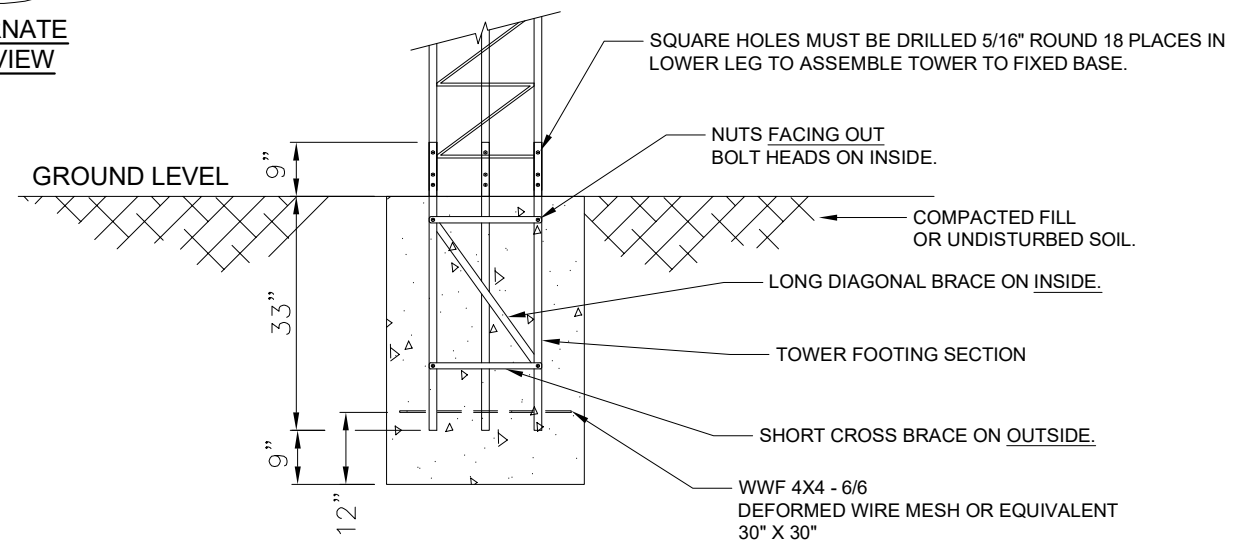


**ALTERNATE TOP VIEW**



**TOP VIEW**

1. THE CONCRETE MUST HAVE 3,500 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH IN ACCORDANCE WITH SECTION 610 STRUCTURAL CONCRETE.
2. THE FOUNDATION SHALL BE DESIGNED BY THE CONTRACTOR AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY EXISTING SOIL CONDITIONS.

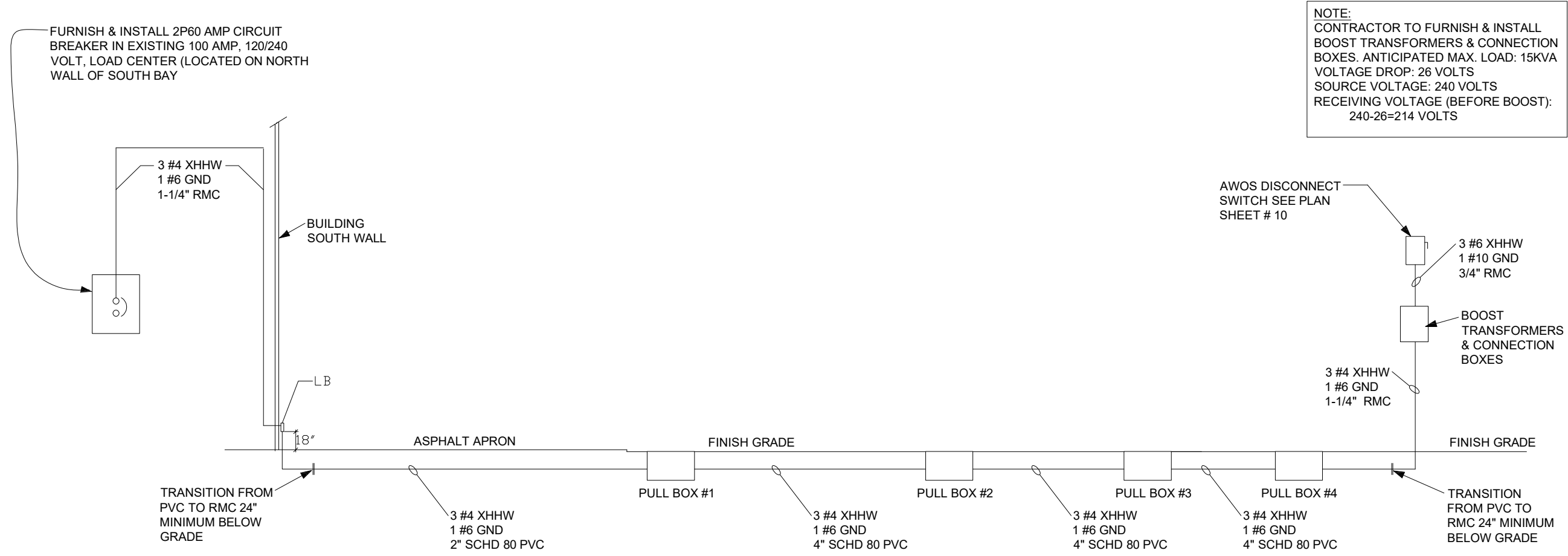


**SECTION VIEW**

**FOLDOVER TOWER FOUNDATION DETAILS**

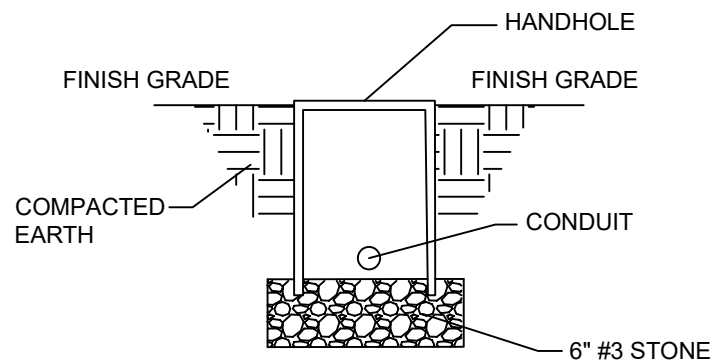
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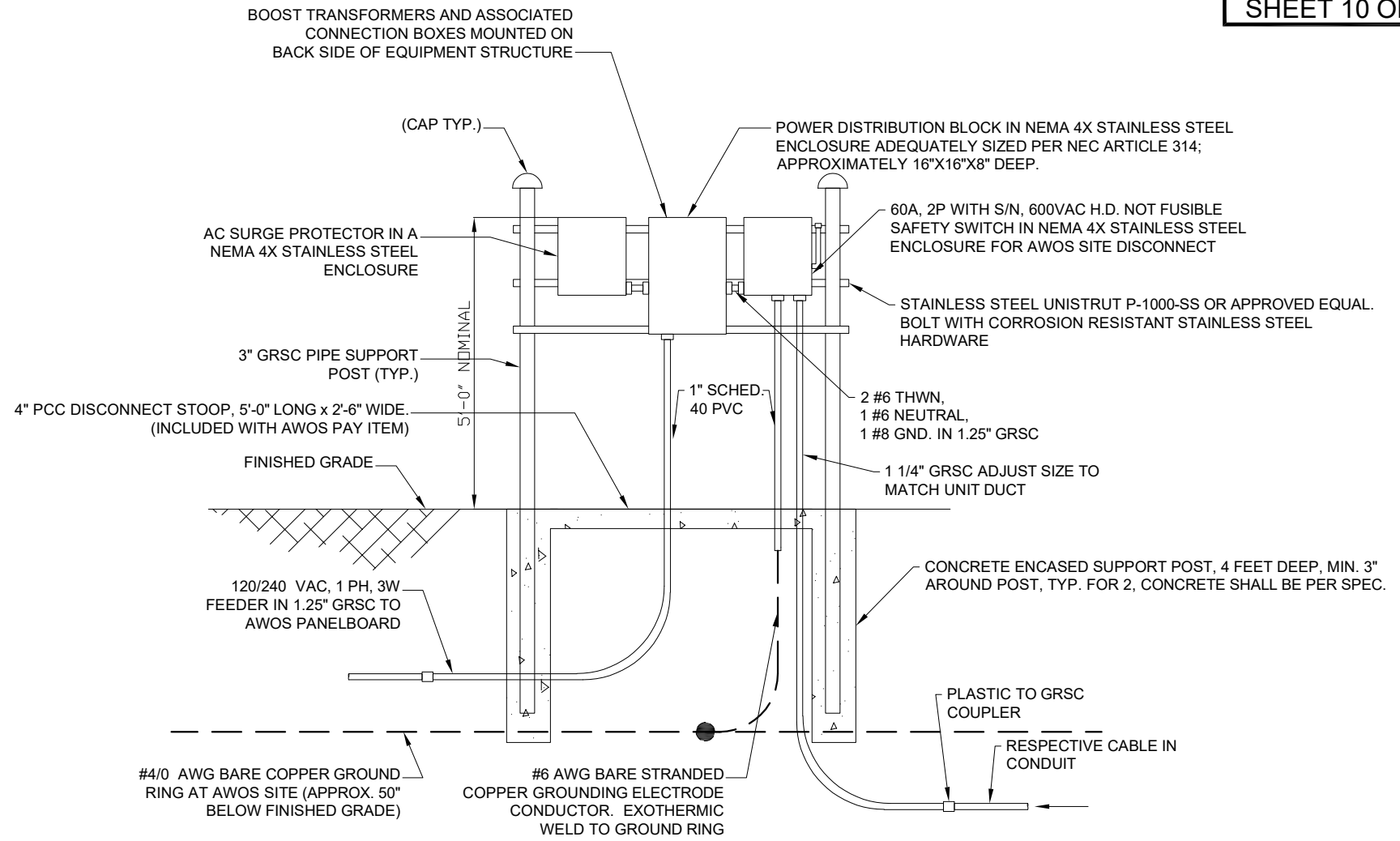


**NOTE:**  
 CONTRACTOR TO FURNISH & INSTALL BOOST TRANSFORMERS & CONNECTION BOXES. ANTICIPATED MAX. LOAD: 15KVA  
 VOLTAGE DROP: 26 VOLTS  
 SOURCE VOLTAGE: 240 VOLTS  
 RECEIVING VOLTAGE (BEFORE BOOST): 240-26=214 VOLTS

**ELEMENTARY AWOS SINGLE LINE DIAGRAM**  
 NO SCALE



**HANDHOLE DETAIL**  
NO SCALE



**NOTES:**

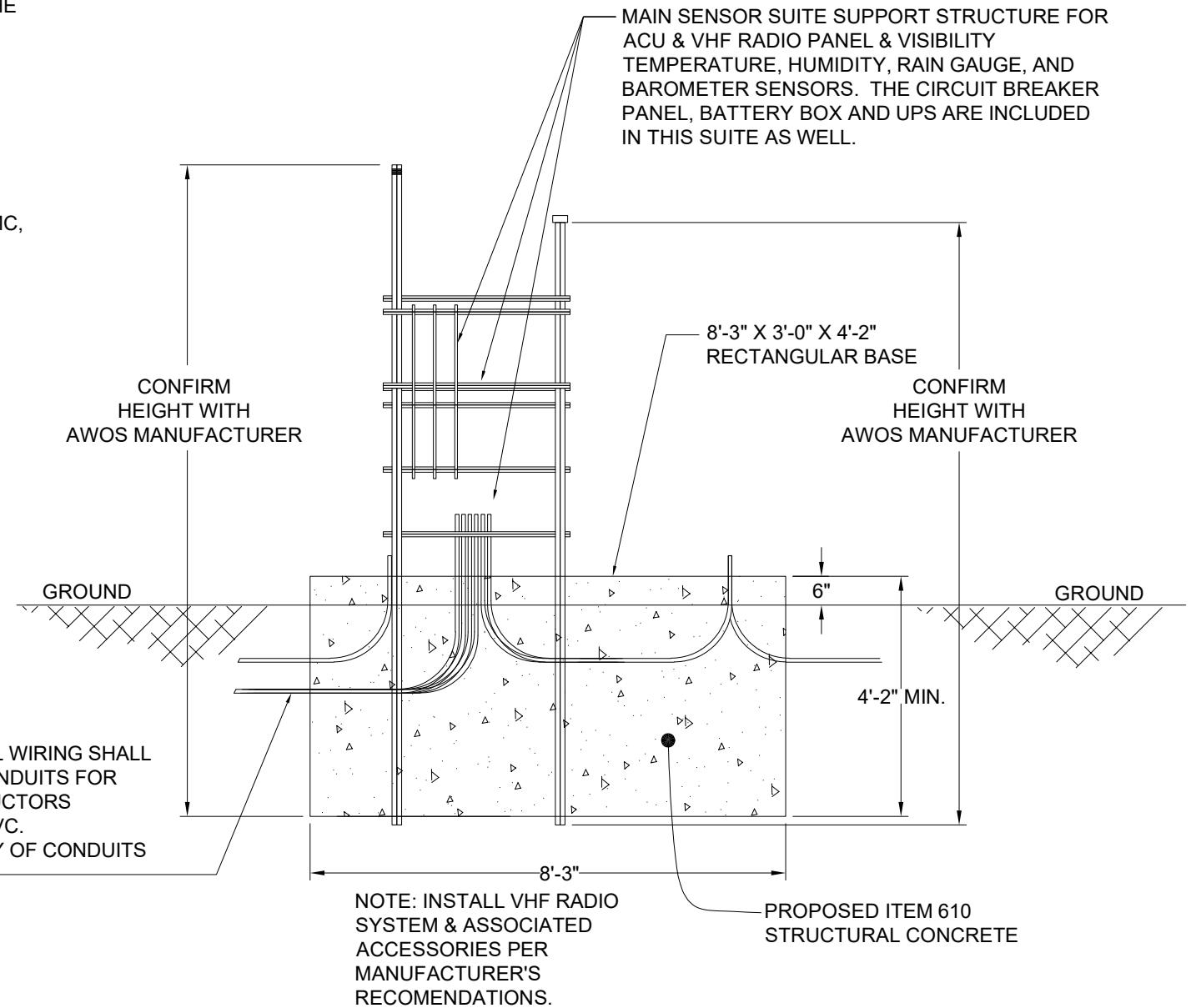
1. SEE ELECTRICAL ONE-LINE DIAGRAMS FOR ADDITIONAL INFORMATION ON EQUIPMENT AND WIRING.
2. FIELD VERIFY LOCATION OF SUPPORT RACK INSTALLATION WITH RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE, COORDINATE LOCATION WITH FENCING, AWOS EQUIPMENT, AND GROUNDING RING.
3. PROVIDE NEMA 4, 4X HUBS FOR ALL CONDUIT ENTRIES INTO NEMA 4, 4X RATED ENCLOSURES TO MAINTAIN THE NEMA 4, 4X RATING.

**AWOS SITE DISCONNECT ELEVATION**  
(NOT TO SCALE)

GENERAL ELECTRICAL NOTES:

**NOTES:**

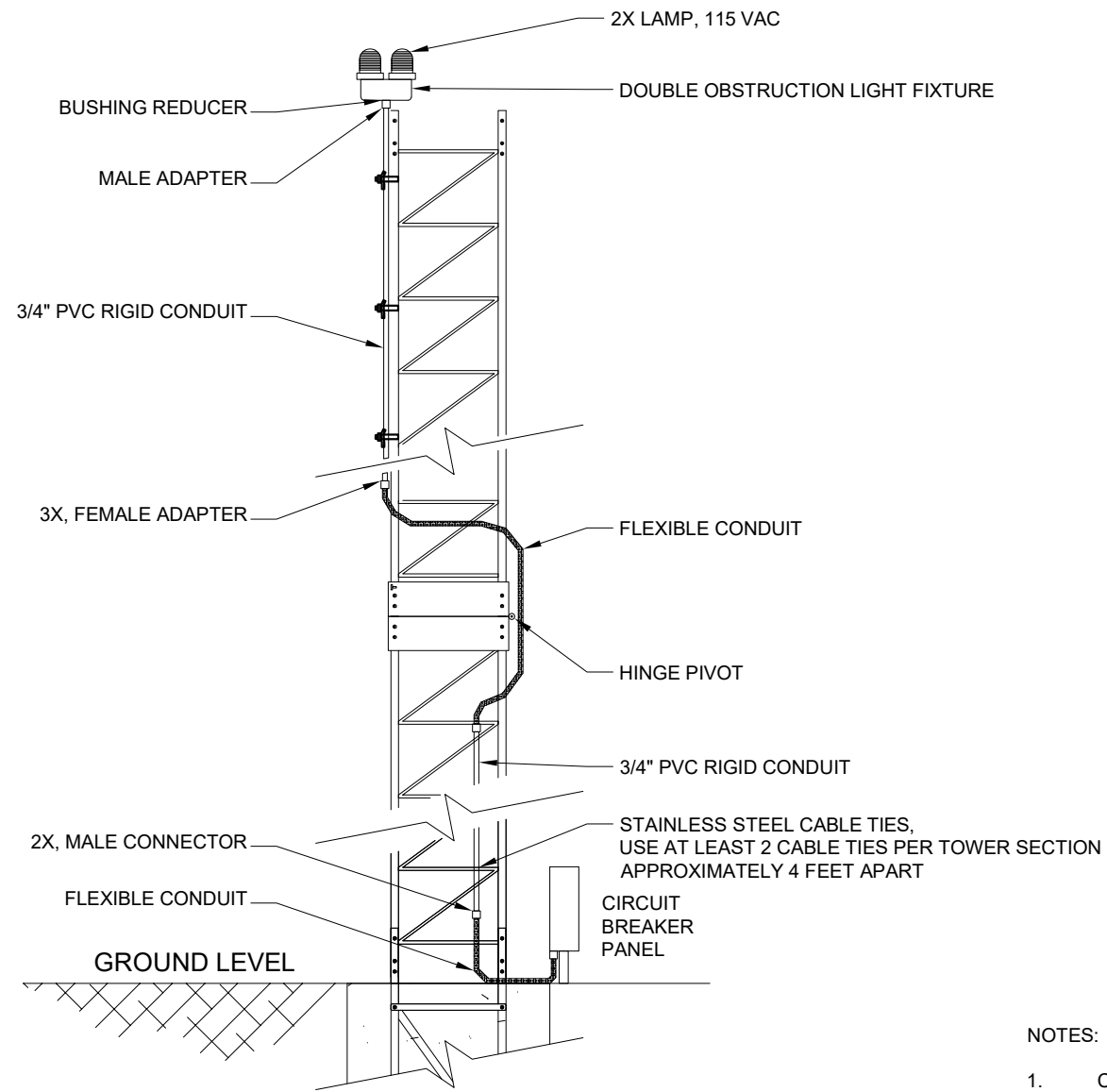
1. DETAILS ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT DETAILED MANUFACTURER'S SHOP DRAWINGS TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE NOTICE TO PROCEED.
2. POWER AND SENSOR CABLE/CONDUITS SHALL BE BURIED AT A DEPTH OF 2' BELOW TOP OF FINISHED GRADE AND SHALL BE IN GALVANIZED RIGID STEEL CONDUIT
3. THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE INTERIOR OF THE HANGAR BUILDING AND CONSULT WITH THE AIRPORT MANAGER BEFORE DETERMINING THE EXACT LOCATION OF EQUIPMENT, CABLE AND CONDUIT RUNS. WIRING LOCATED AT THE HANGAR BUILDING SHALL BE IN METAL CONDUIT (GRSC, IMC, OR EMT) AND SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
4. PER NEC 513 THE ENTIRE AREA OF THE HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS 1, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE THE FLOOR. PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREA WITHIN 5FT. ABOVE THE UPPER SURFACE OF WINGS AND OF THE ENGINE ENCLOSURES. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATION AND INSTALLED IN CONFORMANCE WITH THE NEC 500, 501, AND 513 AS WELL AS OTHER APPLICABLE CODES AND REQUIREMENTS.



CONDUITS FOR POWER & SIGNAL WIRING SHALL BE GALVANIZED RIGID STEEL CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS SHALL BE SCHEDULE 40 OR 80 PVC. CONFIRM SIZE, TYPE & QUANTITY OF CONDUITS WITH AWOS MANUFACTURER.

**AWOS EQUIPMENT FRAME ELEVATION**  
(NOT TO SCALE)

CONFIRM FOUNDATION REQUIREMENTS, DIMENSIONS AND DETAILS WITH RESPECTIVE AWOS MANUFACTURER. AND ADJUST TO CONFORM TO THE AWOS MANUFACTURER RECOMMENDATIONS AND RESPECTIVE SITE CONDITIONS.



**SIDE VIEW**

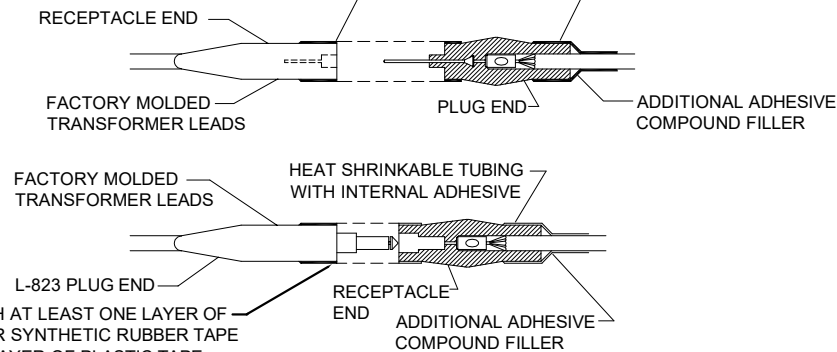
**NOTES:**

1. CUT CONDUIT LENGTH AS REQUIRED TO FIT INSTALLATION
2. TRANSITION TO FLEXIBLE CONDUIT ON THE HINGE SIDE, ENSURING IT WILL NOT INTERFERE WITH THE HINGE.
3. ATTACH ADAPTERS AND CONDUIT TOGETHER WITH PVC CEMENT.
4. WIRE TOWER LIGHTS IN PARALLEL.

**OBSTRUCTION LIGHT INSTALLATION FOR FOLDOVER TOWER**



WRAP WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1 1/2 INCHES ON EACH SIDE OF JOINT.



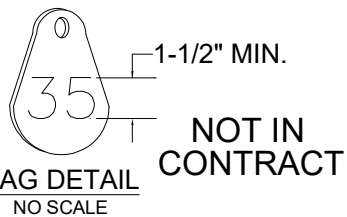
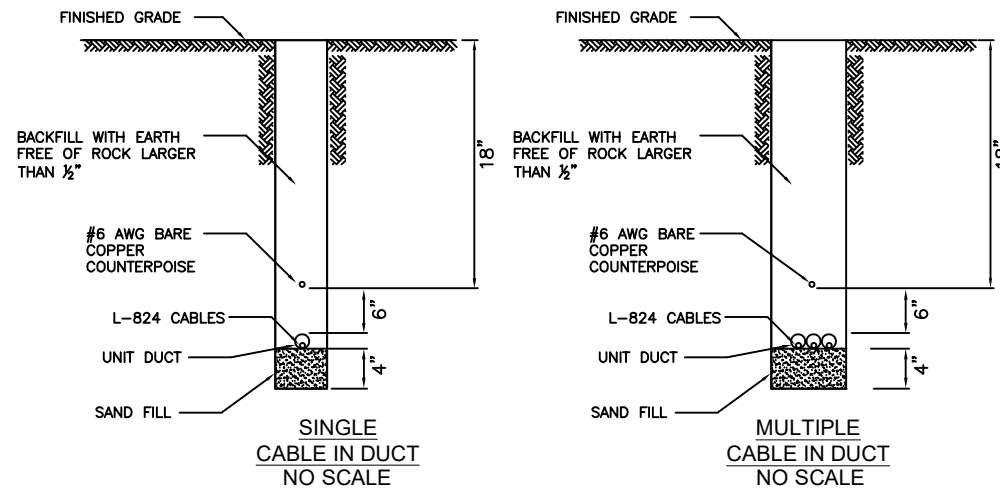
WRAP WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF JOINT.

**CONNECTIONS AT SIGNS, RUNWAY & TAXIWAY LIGHTS**

**\*\*\*NOT IN CONTRACT\*\*\***

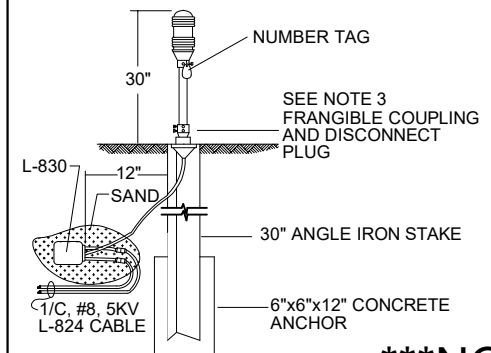
**NOTES:**

- INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE
- CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR/LUG MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. THE CRIMPING TOOL USED MUST BE LISTED BY THE L-823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURE'S INSTRUCTIONS.



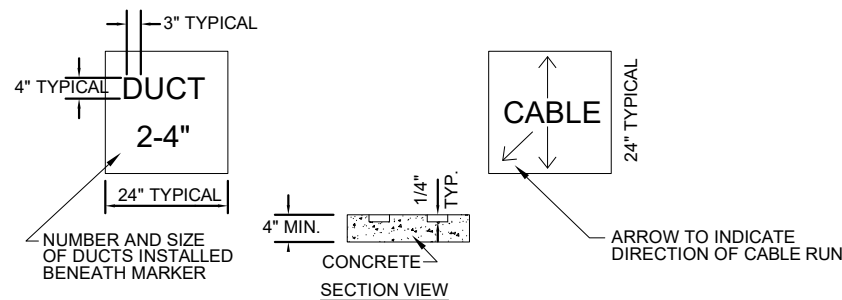
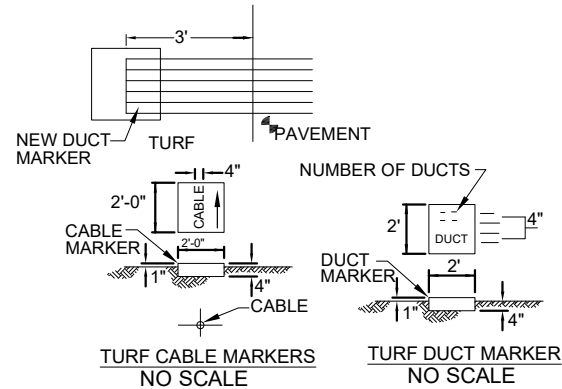
**NOTE:**  
 AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY (WHITE WITH BLACK NUMBERS)

**NUMBER TAGS  
 RUNWAY & TAXIWAY LIGHTING FIXTURES  
 NO SCALE**



**MEDIUM INTENSITY, SERIES CIRCUIT  
 STAKE MOUNTED**

**\*\*\*NOT IN CONTRACT\*\*\***

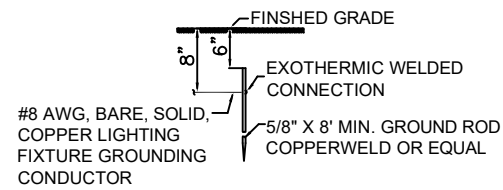


**NOTES:**

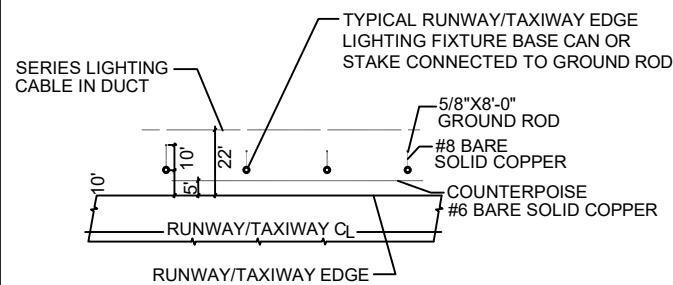
- MARKERS SHALL BE PLACED AS SPECIFIED IN ITEMS 108, 109 & 125 OF THE SPECIFICATIONS.
- COST OF CONCRETE MARKERS IS INCIDENTAL TO THE ASSOCIATED ITEMS OF DUCT OR CABLE.
- EDGE EXPOSED CONCRETE WITH A 1/2" RADIUS TOOL.
- WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED, SOME OF THE FOLLOWING METHODS SHALL BE EMPLOYED:
  - REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE
  - INCREASE THE MARKER SIZE TO 30" x 30" MAX.
  - PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.

**\*\*\*NOT IN CONTRACT\*\*\***

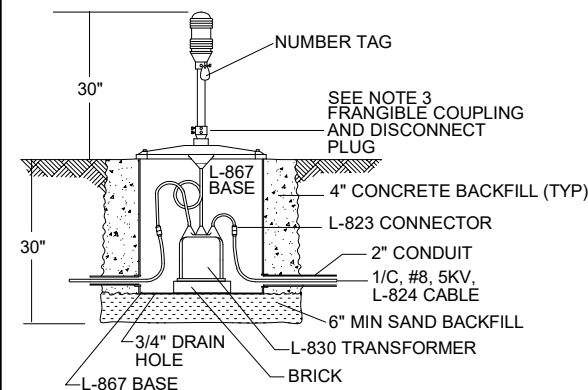
- NOTES:**
- THE RESISTANCE TO GROUND OF THE FIXTURE GROUND RODS SHALL NOT EXCEED 25 OHMS.
  - COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.



**RUNWAY/TAXIWAY EDGE LIGHTING FIXTURE  
 GROUND ROD INSTALLATION DETAIL  
 NO SCALE**



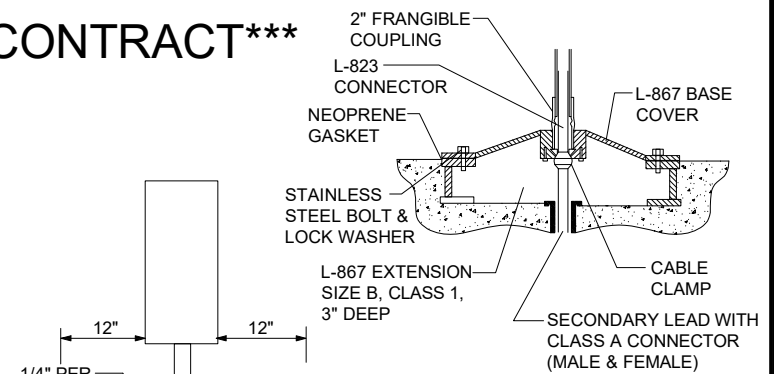
**RUNWAY & TAXIWAY LIGHTING FIXTURE  
 GROUNDING INSTALLATION INFORMATION  
 NO SCALE**



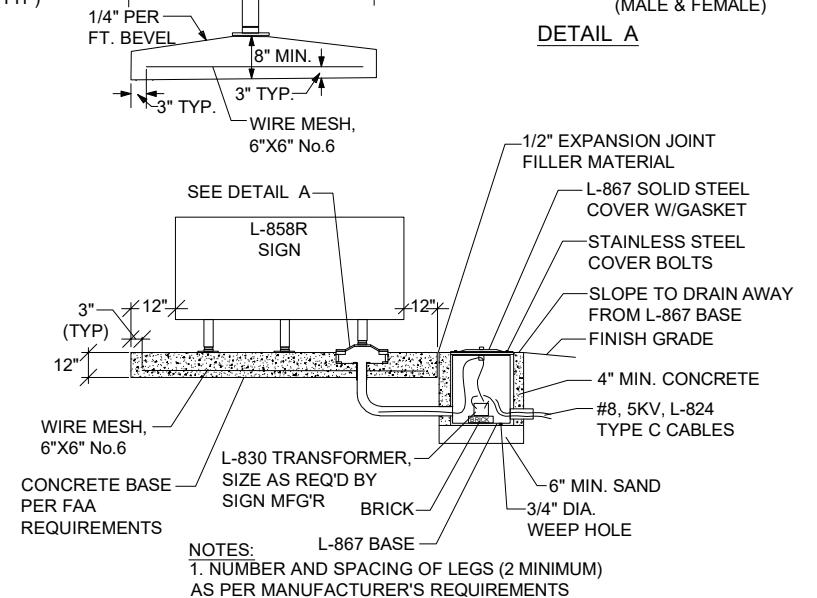
**MEDIUM INTENSITY, SERIES CIRCUIT  
 BASE MOUNTED**

**NOTES:**

- PROVIDE AT LEAST 2 FT. OF SLACK FOR EACH PRIMARY & SECONDARY CABLE AT ALL LIGHT FIXTURES & SIGNS.
- FOR STAKE MOUNTING, ENCASE THE TRANSFORMER, CONNECTORS AND CABLE SLACK IN SAND.
- BREAKING-POINT FRANGIBLE COUPLING SHALL BE LOCATED 3 INCHES MAX. ABOVE GRADE.
- SEE LIGHTING SCHEDULE THIS SHEET
- ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL (LOCKWASHERS, NUTS & BOLTS, ETC.)



**DETAIL A**

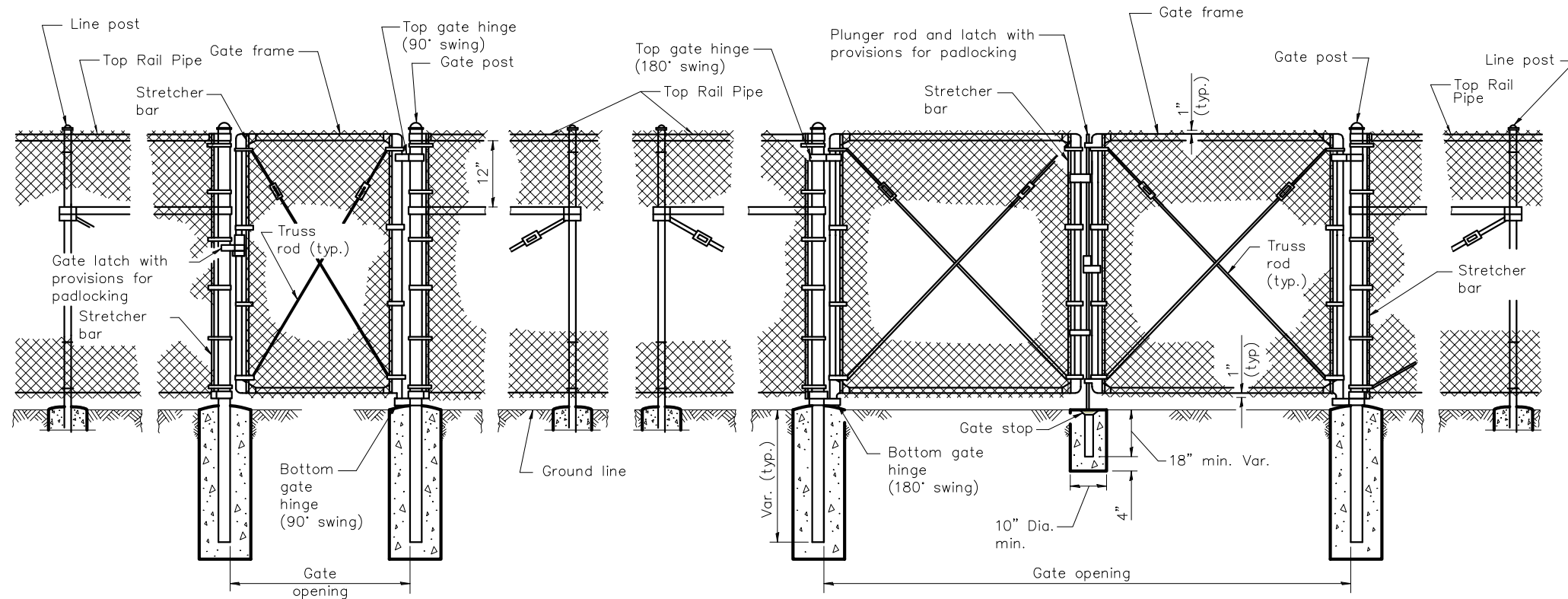


- NOTES:**
- NUMBER AND SPACING OF LEGS (2 MINIMUM) AS PER MANUFACTURER'S REQUIREMENTS

**SIGN PEDESTALS**

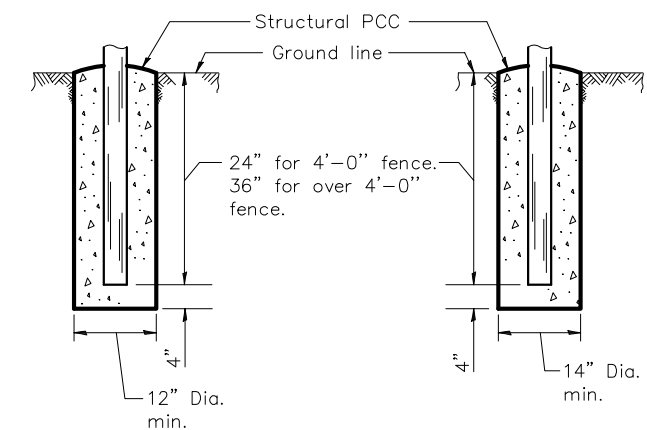
GENERAL ELECTRICAL NOTES:

1. THE ELECTRICAL INSTALLATION, AS A MINIMUM, SHALL MEET THE NATIONAL ELECTRICAL CODE AND LOCAL REGULATIONS.
2. IN LIEU OF STENCILING, CONTRACTOR SHALL FURNISH AND INSTALL PLASTIC LAMINATED ENGRAVED LEGEND PLATES SECURELY FASTENED TO EQUIPMENT WITH TAPPING OR MACHINE SCREWS. LEGEND PLATES SHALL BE 1/2" HIGH BLACK LETTERS ON WHITE BACKGROUND.
3. COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE, INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR SINGLE PHASE, THREE WIRE SYSTEMS, AND BLACK, RED AND BLUE SHALL BE USED FOR THREE PHASE SYSTEMS. NEUTRAL CONDUCTOR SIZE NO. 6 AWG OR SMALLER SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS SIZE LARGER THAN NO. 6 SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS.
4. ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
5. ALL WIRING SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
6. GROUND ALL NONCURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT BY USING INSULATED COPPER WIRE TO BE RUN INSIDE CABINETS AND IN CONDUITS TOGETHER WITH OTHER WIRES.
7. ALL GROUND CONNECTIONS TO BUSES, PANEL, ETC., SHALL BE MADE WITH PRESSURE TYPE SOLDERLESS LUG CLAMPS. SOLDERED OR BOLT & WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. CONNECTIONS TO GROUND RODS & GROUND RING SHALL BE MADE WITH EXOTHERMIC WELDING PROCESS.
8. RIGID STEEL CONDUIT SHALL BE USED THROUGHOUT THE INSTALLATION UNLESS OTHERWISE SPECIFIED. ALL STEEL CONDUITS, & FITTINGS SHALL BE GALVANIZED.
9. FOR INDOOR LOCATIONS EQUIPMENT SUPPORT STRUCTURES, CHANNEL OR STRUT, INCLUDING FASTENING HARDWARE, SHALL BE GALVANIZED. FOR OUTDOOR LOCATIONS EQUIPMENT SUPPORT STRUCTURES, CHANNEL OR STRUT, INCLUDING FASTENING HARDWARE, SHALL BE 316 STAINLESS STEEL.
10. USE DUAL LUGS WHERE TWO WIRES SIZE NO. 6 OR LARGER ARE TO BE CONNECTED TO THE SAME TERMINAL.
11. USE INSULATED CONDUIT BUSHING AT EACH CONDUIT TERMINATION.
12. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
13. UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
14. LABEL BOTH ENDS OF ALL CONTROL CONDUCTORS TO IDENTIFY TERMINAL NUMBER AND CIRCUIT, SUCH LABELING SHALL BE DONE AT ALL TERMINALS AND SPLICES.
15. UNLESS OTHERWISE NOTED, ALL SINGLE CONTROL CONDUCTORS SHALL BE NO. 12 AWG, THHN, STRANDED COPPER, EXTENSIONS TO EXISTING CONTROL CONDUCTORS SHALL BE THE SAME COLOR AS EXISTING.
16. BOTH ENDS OF EACH CONTROL CONDUCTOR SHALL BE TERMINATED AT A TERMINAL BLOCK. THE TERMINAL BLOCKS SHALL BE OF PROPER RATING AND SIZE AND THEY SHALL BE LOCATED IN EQUIPMENT ENCLOSURES OR SPECIAL TERMINAL CABINETS.
17. BOTH ENDS OF ALL CONTROL CONDUCTORS SHALL BE IDENTIFIED AS TO THE CIRCUIT TERMINAL BLOCK, AND TERMINAL NUMBER. ONLY SHRINKABLE PERMANENT LABELS SHALL BE USED.
18. A SEPARATE AND CONTINUOUS NEUTRAL CONDUCTOR SHALL BE INSTALLED AND CONNECTED FOR EACH CIRCUIT IN THE POWER PANEL(S) FROM THE NEUTRAL BAR TO EACH POWER/CONTROL CIRCUIT.
19. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS AND AT EASILY ACCESSIBLE LOCATIONS.
20. UNLESS OTHERWISE NOTED, ALL UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS SHALL BE FAA APPROVED L-824, TYPE C INSULATION. VOLTAGE AND SIZE SHALL BE AS SPECIFIED.
21. THE JOINT OF THE PRIMARY L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE. ONE-HALF LAPPED. EXTENDING AT LEAST 1 INCH ON EACH SIDE OF THE JOINT. HEAT-SHRINK TUBING SHALL BE APPLIED WHERE CABLE ENTERS BACK OF CONNECTOR. SEE DETAIL DRAWING.
22. THE ID OF THE PRIMARY L-823 FIELD ATTACHED CONNECTORS SHALL MATCH THE CABLE OD TO PROVIDE A WATERTIGHT CABLE ENTRANCE.
23. ALL POWER AND CONTROL CIRCUIT CONDUCTORS SHALL BE COPPER. ALUMINUM SHALL NOT BE ACCEPTED. THIS INCLUDES WIRE, CABLE, BUSES, TERMINALS, SWITCH/PANEL COMPONENTS, ETC.
24. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF SIZE SHOWN. LETTER/NUMBERS FOR THE LEGEND TO BE IMPRESSED INTO TOPS OF THE MARKERS SHALL BE PREASSEMBLED AND SECURED IN MOLD BEFORE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
25. THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM (INCLUDING FAA APPROVED EQUIPMENT) ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OF DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
26. IN CASE THE CONTRACTOR SELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATIONS, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
27. THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR, AT NO ADDITIONAL COST, BY EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
28. ALL EXISTING LIGHTS AND SIGNS REMOVED UNDER THIS CONTRACT SHALL BE CONTRACTOR SALVAGE.
29. WHERE EXISTING SIGNS AND FOUNDATIONS ARE TO BE REMOVED, THE AREA SHALL BE BACKFILLED WITH EARTH TO THE ORIGINAL GRADE, COMPACTED AND SEED. SUCH REMOVAL SHALL BECOME CONTRACTOR SALVAGE UNLESS NOTED OTHERWISE.
30. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND CIRCUITS, GAS OR WATER LINES TO AVOID DAMAGE TO EXISTING UTILITIES TO BE RETAINED. EXCAVATING REQUIRED IN CONGESTED AREAS CONTAINING OTHER UTILITIES SHALL BE DONE BY HAND. ANY SUCH WIRING DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY AFTER DISCOVERY AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. ALL UNDERGROUND SPLICES SHALL BE INSPECTED BY THE RESIDENT ENGINEER PRIOR TO BACKFILLING TRENCHES.
31. SHOP DRAWINGS SHALL BE REQUIRED FOR ALL PROPOSED LIGHTING EQUIPMENT INCLUDING CABLE, CABLE CONNECTIONS, TRANSFORMERS, L-867 BASES, & ALL EQUIPMENT ITEMS DESCRIBED UNDER SPECIFICATIONS, OR SHOWN ON THE PLANS.



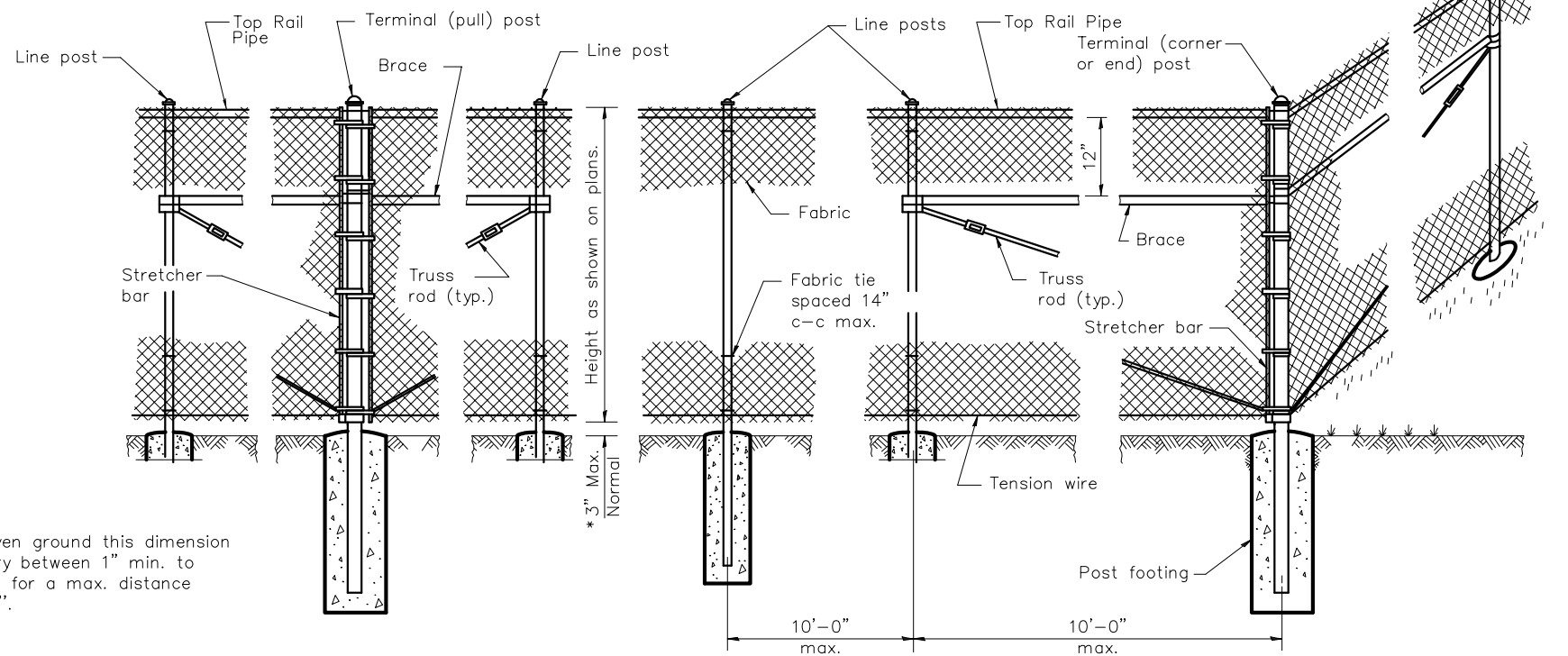
**PEDESTRIAN GATE ARRANGEMENT**

**VEHICLE GATE ARRANGEMENT**



**FOOTING FOR LINE POST**

**FOOTING FOR GATE & TERMINAL POST**



**PULL POST ARRANGEMENT**

**LINE POST ARRANGEMENT**

**CORNER OR END POST ARRANGEMENT**

**NOTES**

1. PULL POSTS SHALL BE PLACED AT LOCATIONS DETERMINED BY THE ENGINEER. THEY SHALL BE PLACED AT 660' INTERVALS BETWEEN POSTS TO WHICH THE ENDS OF THE FABRIC ARE CLAMPED OR MIDWAY BETWEEN SUCH POSTS WHEN THE DISTANCE IS LESS THAN 1320' AND GREATER THAN 660'.
2. CONTINUOUS FENCE SHALL BE GROUNDED AT INTERVALS NOT EXCEEDING 500 FT. EXCEPT THERE SHALL BE A GROUND NOT EXCEEDING 100 FT FROM GATE IN EACH SECTION OF THE FENCE ADJACENT TO THE GATE.
3. FENCE UNDER POWER LINES SHALL BE GROUNDED BY THREE GROUNDS, ONE DIRECTLY UNDER THE CROSSING AND ONE ON EACH SIDE 25 TO 50 FT AWAY. A SINGLE GROUND SHALL BE LOCATED DIRECTLY UNDER EACH TELEPHONE WIRE OR CABLE CROSSING.
4. THE COUNTERPOISE SHALL BE USED ONLY WHERE IT IS IMPOSSIBLE TO DRIVE A GROUND ROD BECAUSE OF IMPERVIOUS EARTH STRUCTURES.
5. THE GROUND WIRE SHALL BE CONNECTED TO THE FABRIC AND THE GROUND ROD BY A MECHANICAL CLAMP OF CAST BRONZE BODY AND BRONZE OR STAINLESS STEEL BOLTS AND WASHERS. WHEN A TENSION WIRE IS REQUIRED, THE BOTTOM CONNECTION OF THE GROUND WIRE SHALL BE MADE TO THE TENSION WIRE.
6. ALL PROPOSED CLASS E FENCE SHALL MEET THE REQUIREMENTS OF IDOT STANDARD 664001 LATEST REVISION, EXCEPT WHERE REVISED ON THESE DETAILS.

