

LETTING ITEM NO. 03A
JANUARY 15, 2021 LETTING

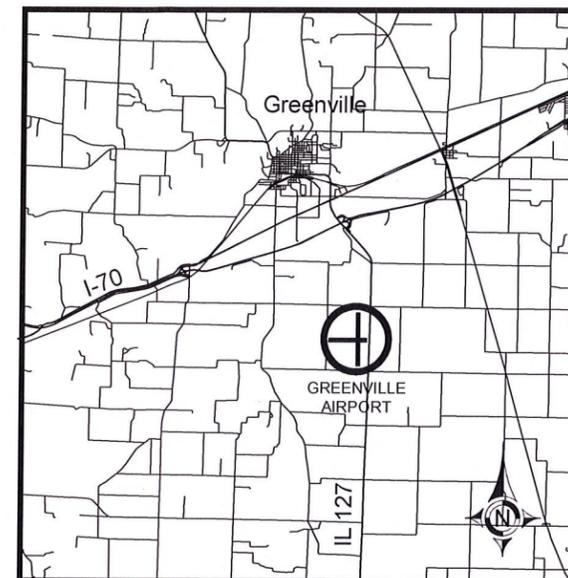
CONSTRUCTION PLANS

GR011
TOTAL SHEETS: 11

FOR GREENVILLE AIRPORT REPLACE RUNWAY AND TAXIWAY LIGHTS AND CABLES



LOCATION MAP



VICINITY MAP

100% SUBMITTAL NOVEMBER 13, 2020

ILLINOIS PROJECT NUMBER: GRE-4810
SBG PROJECT NUMBER: 3-17-SBGP-139/162

GREENVILLE, ILLINOIS
BOND COUNTY



19 Nov 2020 - 8:20am X:\2020\20098\acPlans\20-098 Cover and Quantity Sheets.dwg: Layout Tab 'Cover'

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: 11/13/2020
LICENSE NUMBER: 062-035047
LICENSE EXPIRATION DATE: NOVEMBER 30, 2021

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: 11/13/2020
LICENSE NUMBER: 062-041196
LICENSE EXPIRATION DATE: NOVEMBER 30, 2021

GREENVILLE AIRPORT AUTHORITY
CHAIRMAN
APPROVED BY: *Joseph W. Anderson*
DATE: 11/17/20
SECRETARY
ATTESTED BY: *Ronald A. Vasek*
DATE: 11-17-20

GREENVILLE AIRPORT

IL PROJECT NO. GRE-4810

SBG NO. 3-17-SBGP-139/162

SUMMARY OF QUANTITIES
& INDEX OF SHEETS

SHEET 2 OF 11

GR011

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
AR108158	1/C #8 5KV UG CABLE IN UD	L.F.	21625
AR108706	1/C #6 COUNTERPOISE	L.F.	12000
AR108756	1/C #6 GROUND	L.F.	1250
AR109311	7.5 KW REGULATOR, STYLE 1	EACH	2
AR109410	VAULT WIRING	L.S.	1
AR109903	REMOVE REGULATOR	EACH	2
AR110014	4" DIRECTIONAL BORE	L.F.	222
AR110024	2-4" DIRECTIONAL BORE	L.F.	30
AR110610	ELECTRICAL HANDHOLE	EACH	2
AR125411	MITL - STAKE MOUNTED - LED	EACH	50
AR125416	MITL - BASE MOUNTED - LED	EACH	11
AR125441	TAXI GUIDANCE SIGN, 1 CHARACTER	EACH	1
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EACH	1
AR125506	MIRL, STAKE MOUNTED - LED	EACH	31
AR125511	MIRL, BASE MOUNTED - LED	EACH	10
AR125541	MI THRESHOLD LIGHT STAKE MTD - LED	EACH	14
AR125546	MI THRESHOLD LIGHT BASE MTD - LED	EACH	2
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	105
AR125902	REMOVE BASE MOUNTED LIGHT	EACH	10
AR125904	REMOVE TAXI GUIDANCE SIGN	EACH	2
AR150520	MOBILIZATION	L.S.	1
AR901525	SEEDING	L.S.	1

INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES & INDEX OF SHEETS
3	CONSTRUCTION SAFETY & PHASING PLAN
4	ELECTRICAL PLAN 1
5	ELECTRICAL PLAN 2
6	ELECTRICAL PLAN 3
7	ELECTRICAL PLAN 4
8	ELECTRICAL DETAILS 1
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10	ELECTRICAL DETAILS 3
11	ELECTRICAL DETAILS 4

GREENVILLE AIRPORT
IL PROJECT NO. GRE-4810
SBG NO. 3-17-SBGP-139/162
CONSTRUCTION SAFETY & PHASING PLAN
SHEET 3 OF 11 | **GR011**

SCOPE OF WORK

THE PROJECT SCOPE CONSISTS OF REMOVING THE EXISTING RUNWAY LIGHTS, THRESHOLD LIGHTS AND TAXIWAY LIGHTS AND INSTALLING NEW RUNWAY LIGHTS, THRESHOLD LIGHTS AND TAXIWAY LIGHTS ALONG WITH OTHER NECESSARY AND RELATED WORK.

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.

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 INCIDENTAL TO THE PROJECT 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

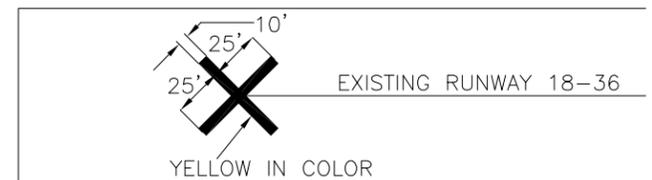
THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT IS 12 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A CONCRETE MIXING TRUCK.

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:

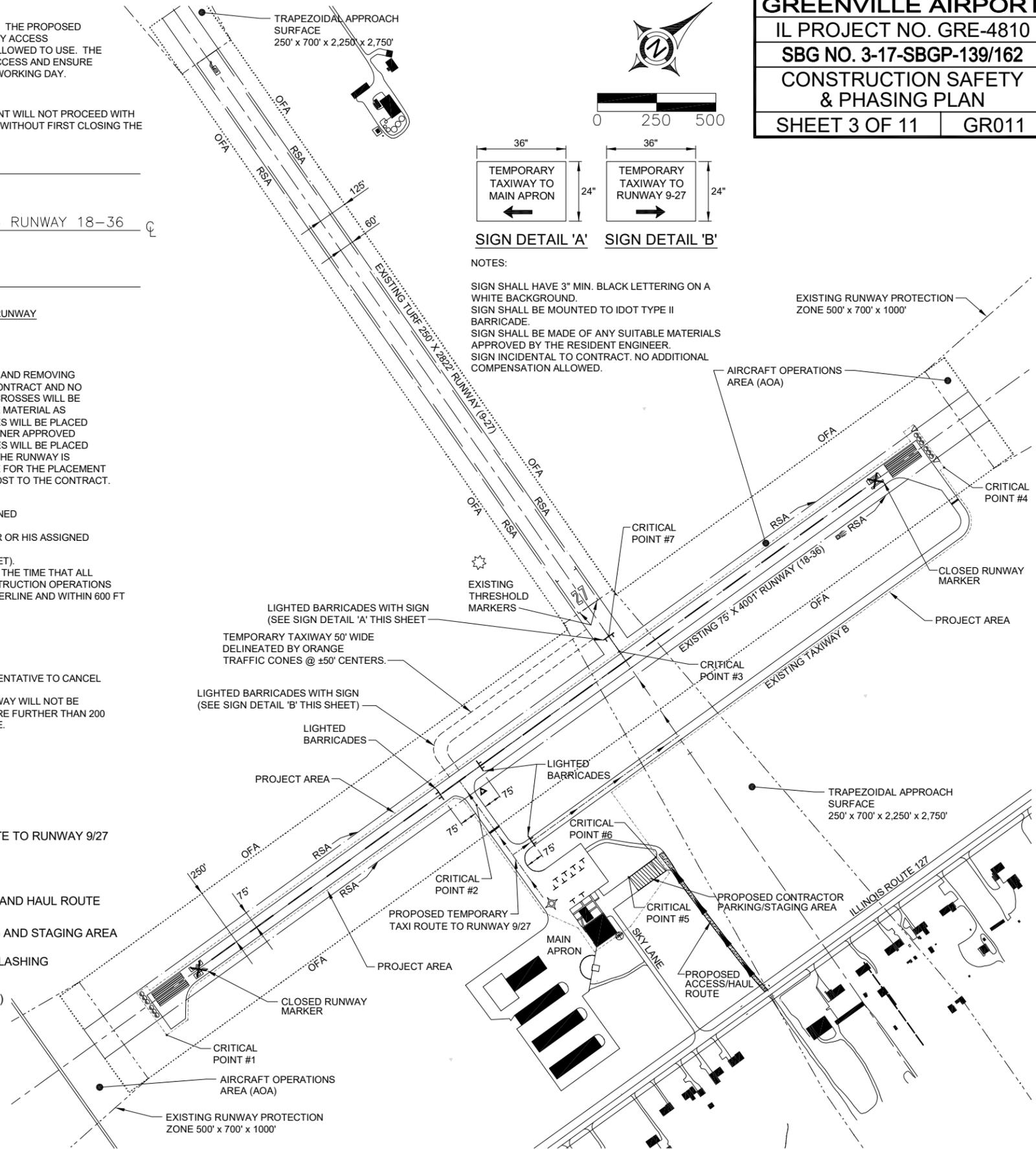
- * REMOVE CROSSES.
- * REMOVE LIGHTED BARRICADES.
- * NOTIFY THE AIRPORT MANAGER OR HIS REPRESENTATIVE TO CANCEL THE NOTAM.
- * CANCELLATION OF THE NOTAM. A CLOSED RUNWAY WILL NOT BE RE-OPENED UNTIL ALL EQUIPMENT AND WORK ARE FURTHER THAN 200 FEET FROM THE AFFECTED RUNWAY CENTERLINE.
- * RUNWAY LIGHTS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

LEGEND

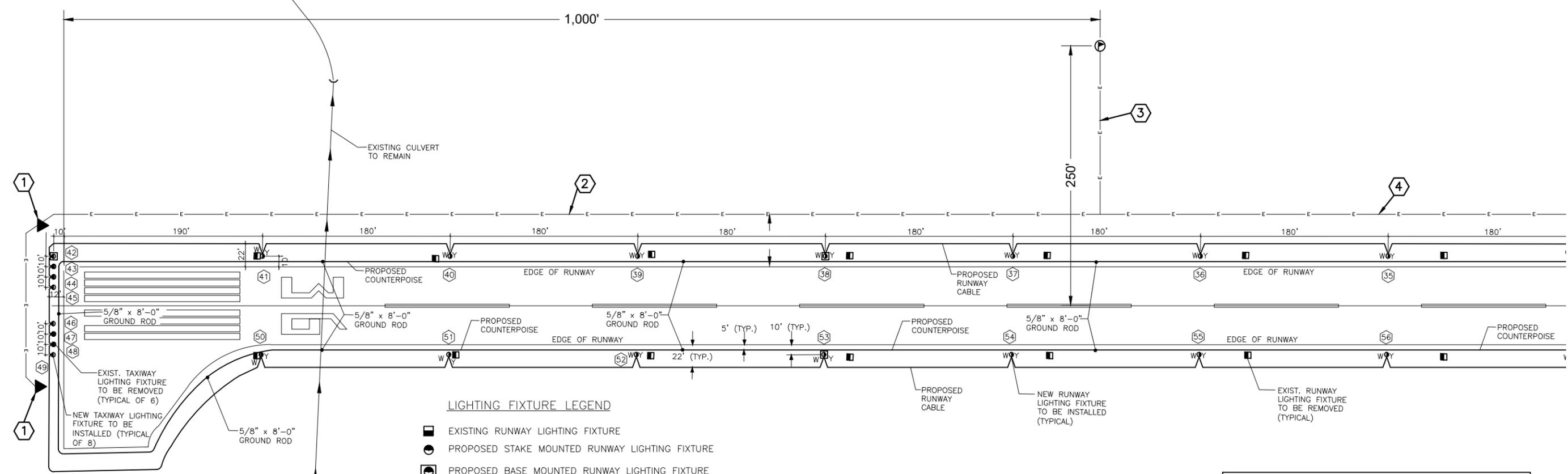
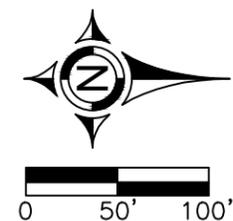
- EXISTING PAVEMENT
- PROPOSED TEMPORARY TAXI ROUTE TO RUNWAY 9/27
- EXISTING BUILDINGS
- PROPOSED CONTRACTOR ACCESS AND HAUL ROUTE
- PROPOSED CONTRACTOR PARKING AND STAGING AREA
- IDOT TYPE II BARRICADE WITH RED FLASHING LIGHTS - 10' MAX SPACING (REQUIRED WHEN RUNWAY 18/36 IS CLOSED AND RUNWAY 9/27 IS OPEN)
- AIRCRAFT OPERATIONS AREA (AOA)

CRITICAL POINTS

NO.	LATITUDE	LONGITUDE	ELEVATION
1	38° 49' 48.51" N	89° 22' 33.15" W	530.0' MSL
2	38° 50' 04.51" N	89° 22' 33.53" W	535.0' MSL
3	38° 50' 13.34" N	89° 22' 35.77" W	538.0' MSL
4	38° 50' 28.43" N	89° 22' 33.68" W	538.0' MSL
5	38° 50' 07.86" N	89° 22' 25.67" W	537.0' MSL
6	38° 50' 09.34" N	89° 22' 25.68" W	537.0' MSL
7	38° 50' 13.07" N	89° 22' 36.73" W	535.0' MSL



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- LIGHTING FIXTURE LEGEND**
- EXISTING RUNWAY LIGHTING FIXTURE
 - PROPOSED STAKE MOUNTED RUNWAY LIGHTING FIXTURE
 - PROPOSED BASE MOUNTED RUNWAY LIGHTING FIXTURE
 - PROPOSED STAKE MOUNTED TAXIWAY LIGHTING FIXTURE
 - PROPOSED BASE MOUNTED TAXIWAY LIGHTING FIXTURE

NOTE:
 ALL L-867 BASES SHALL BE 16" INSIDE DIAMETER X 24" DEEP

GENERAL NOTE
 EXISTING UNDERGROUND AIRFIELD LIGHTING CIRCUITS ARE SHOWN WHERE LOCATIONS ARE RELEVANT TO NEW CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE. THESE AREAS SHALL BE HAND-EXCAVATED TO AVOID DAMAGE. ANY DAMAGE TO SAME SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER.

- PLAN NOTES**
- ① Existing REIL system for Runway 36 to remain.
 - ② Existing 4/C #2 600 V Type C in unit duct for 120/240 volt feed to Runway 36 REIL system to remain.
 - ③ Existing 3/C, #2, 600 V, Type C in unit duct for 120 volt feed to Runway 36 supplemental wind cone to remain.
 - ④ Existing 4/C #2 and 3/C #2 Type C unit duct to remain.

NOTE:
 CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL UTILITIES WHETHER SHOWN ON PLANS OR NOT.

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GENERAL NOTE

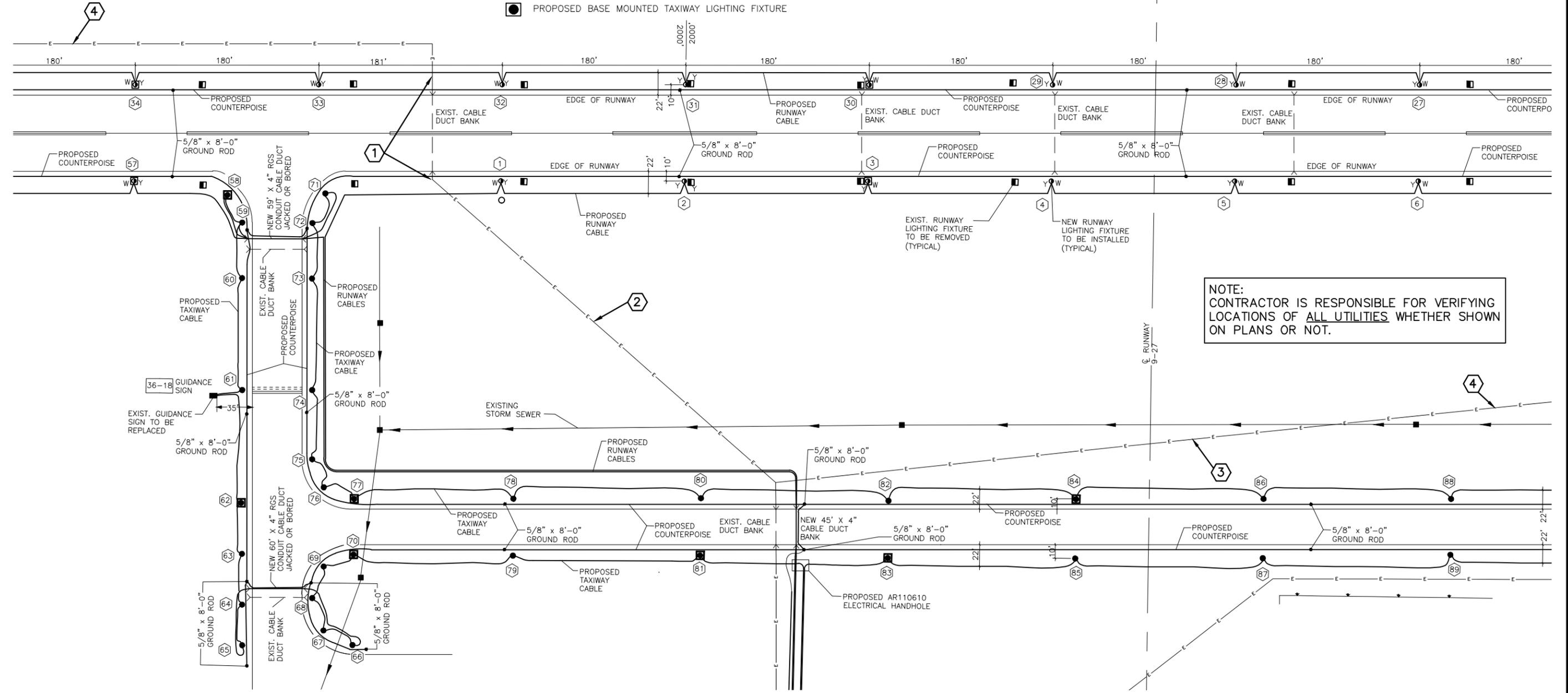
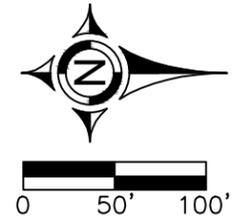
EXISTING UNDERGROUND AIRFIELD LIGHTING CIRCUITS ARE SHOWN WHERE LOCATIONS ARE RELEVANT TO NEW CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE. THESE AREAS SHALL BE HAND-EXCAVATED TO AVOID DAMAGE. ANY DAMAGE TO SAME SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER.

PLAN NOTES

- ① Locate and avoid existing airfield lighting underground cables. Any damage to same shall be repaired or replaced to the satisfaction of the Engineer.
- ② Existing 4/C #2 (36 REIL), and 3/C #2 (36 wind cone) Type C unit ducts to remain.
- ③ Existing 3/C #4 600 V Type C in unit duct for 120 volt feed to supplemental wind cone (Runway 18) to remain.
- ④ See Sheet 4 & 7 for continuation.
- ⑤ Taxiway light fixtures are indicated at the existing fixture locations. Existing taxiway light fixtures are to be removed and new installed.

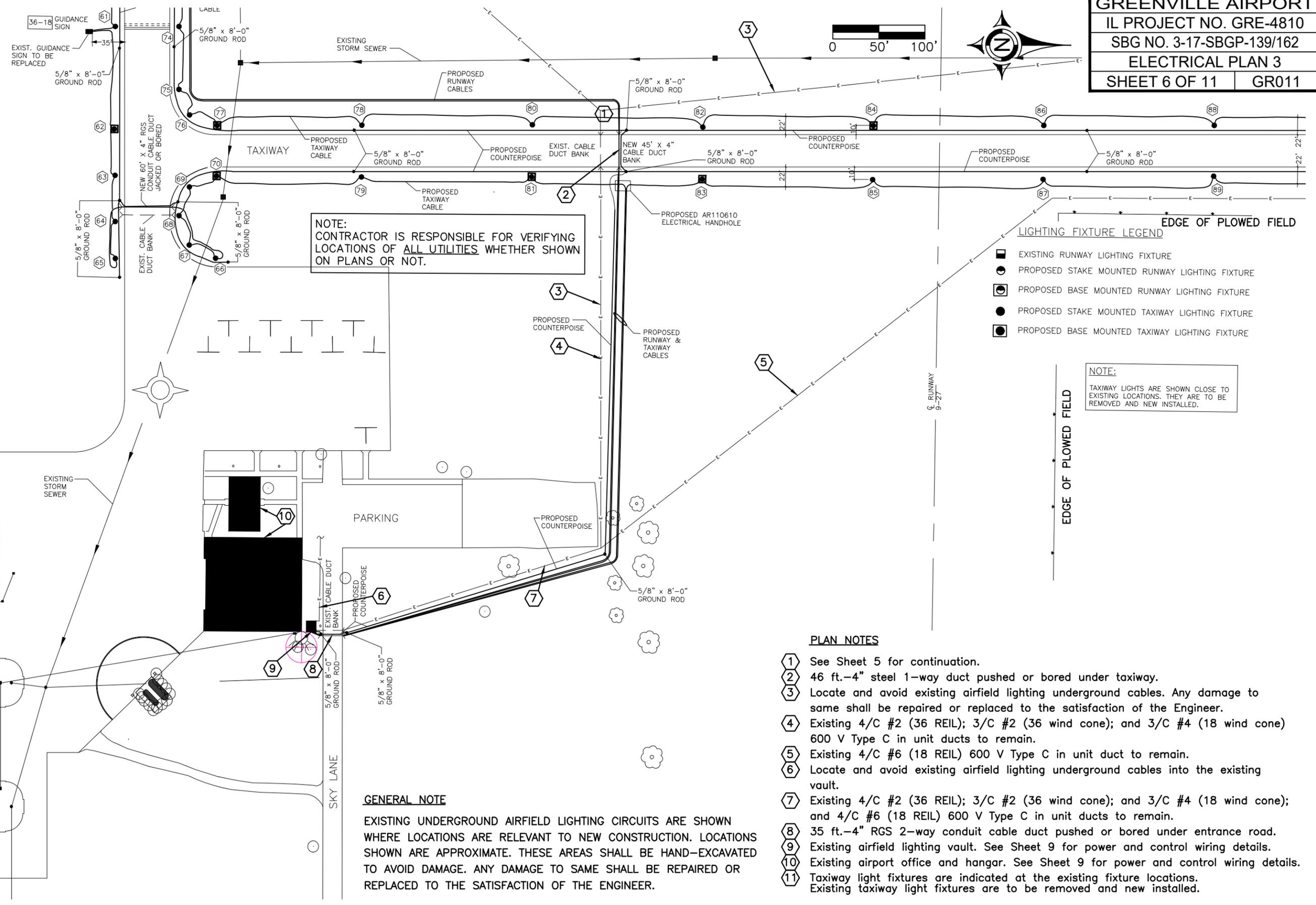
LIGHTING FIXTURE LEGEND

- EXISTING RUNWAY LIGHTING FIXTURE
- PROPOSED STAKE MOUNTED RUNWAY LIGHTING FIXTURE
- PROPOSED BASE MOUNTED RUNWAY LIGHTING FIXTURE
- PROPOSED STAKE MOUNTED TAXIWAY LIGHTING FIXTURE
- PROPOSED BASE MOUNTED TAXIWAY LIGHTING FIXTURE



NOTE:
 CONTRACTOR IS RESPONSIBLE FOR VERIFYING
 LOCATIONS OF ALL UTILITIES WHETHER SHOWN
 ON PLANS OR NOT.

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NOTE:
 CONTRACTOR IS RESPONSIBLE FOR VERIFYING
 LOCATIONS OF ALL UTILITIES WHETHER SHOWN
 ON PLANS OR NOT.

NOTE:
 TAXIWAY LIGHTS ARE SHOWN CLOSE TO
 EXISTING LOCATIONS. THEY ARE TO BE
 REMOVED AND NEW INSTALLED.

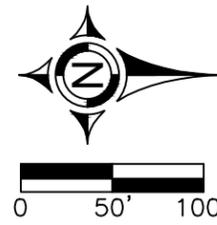
- LIGHTING FIXTURE LEGEND**
- EXISTING RUNWAY LIGHTING FIXTURE
 - PROPOSED STAKE MOUNTED RUNWAY LIGHTING FIXTURE
 - ⊙ PROPOSED BASE MOUNTED RUNWAY LIGHTING FIXTURE
 - PROPOSED STAKE MOUNTED TAXIWAY LIGHTING FIXTURE
 - ⊙ PROPOSED BASE MOUNTED TAXIWAY LIGHTING FIXTURE

PLAN NOTES

- 1 See Sheet 5 for continuation.
- 2 46 ft.-4" steel 1-way duct pushed or bored under taxiway.
- 3 Locate and avoid existing airfield lighting underground cables. Any damage to same shall be repaired or replaced to the satisfaction of the Engineer.
- 4 Existing 4/C #2 (36 REIL); 3/C #2 (36 wind cone); and 3/C #4 (18 wind cone) 600 V Type C in unit ducts to remain.
- 5 Existing 4/C #6 (18 REIL) 600 V Type C in unit duct to remain.
- 6 Locate and avoid existing airfield lighting underground cables into the existing vault.
- 7 Existing 4/C #2 (36 REIL); 3/C #2 (36 wind cone); and 3/C #4 (18 wind cone); and 4/C #6 (18 REIL) 600 V Type C in unit ducts to remain.
- 8 35 ft.-4" RGS 2-way conduit cable duct pushed or bored under entrance road.
- 9 Existing airfield lighting vault. See Sheet 9 for power and control wiring details.
- 10 Existing airport office and hangar. See Sheet 9 for power and control wiring details.
- 11 Taxiway light fixtures are indicated at the existing fixture locations. Existing taxiway light fixtures are to be removed and new installed.

GENERAL NOTE

EXISTING UNDERGROUND AIRFIELD LIGHTING CIRCUITS ARE SHOWN WHERE LOCATIONS ARE RELEVANT TO NEW CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE. THESE AREAS SHALL BE HAND-EXCAVATED TO AVOID DAMAGE. ANY DAMAGE TO SAME SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER.



PLAN NOTES

- ① Existing 3/C #4 600 V Type C in unit duct for 120 volt feed to supplemental wind cone (Runway 18) to remain.
- ② Existing REIL system for Runway 18 to remain.
- ③ Existing 4/C #6 600 V Type C in unit duct for 120/240 volt feed to Runway 18 REIL system to remain.

GENERAL NOTE

EXISTING UNDERGROUND AIRFIELD LIGHTING CIRCUITS ARE SHOWN WHERE LOCATIONS ARE RELEVANT TO NEW CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE. THESE AREAS SHALL BE HAND-EXCAVATED TO AVOID DAMAGE. ANY DAMAGE TO SAME SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER.

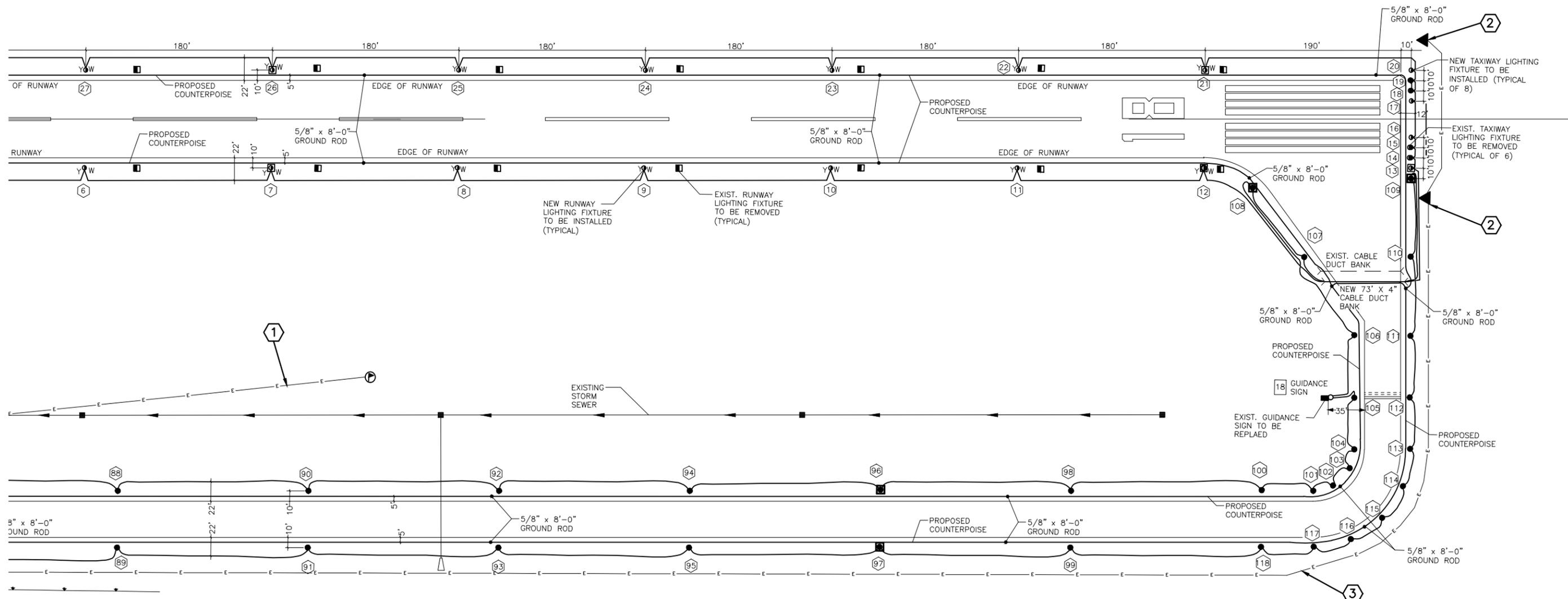
LIGHTING FIXTURE LEGEND

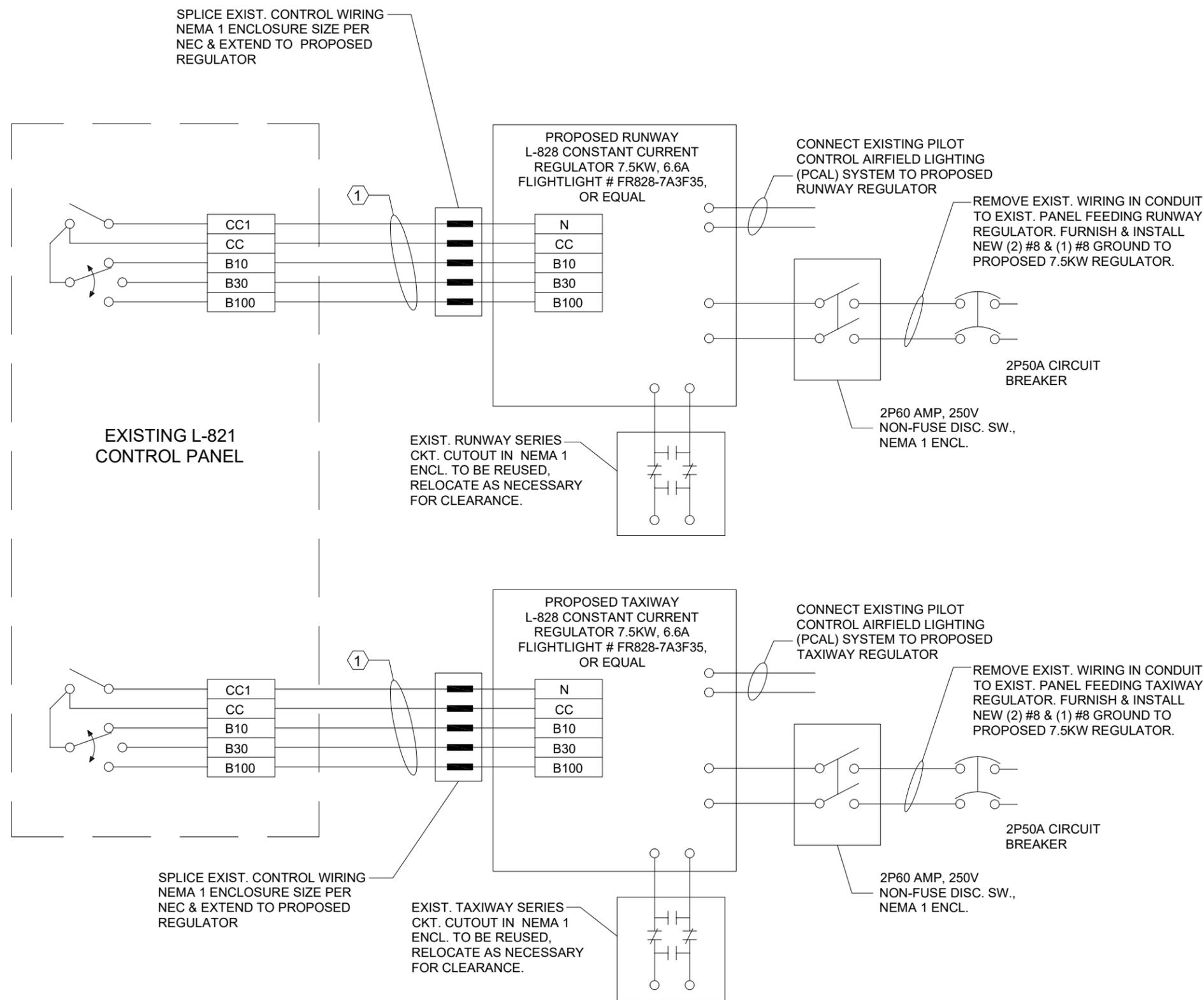
- EXISTING RUNWAY LIGHTING FIXTURE
- PROPOSED STAKE MOUNTED RUNWAY LIGHTING FIXTURE
- ⊙ PROPOSED BASE MOUNTED RUNWAY LIGHTING FIXTURE
- PROPOSED STAKE MOUNTED TAXIWAY LIGHTING FIXTURE
- ⊙ PROPOSED BASE MOUNTED TAXIWAY LIGHTING FIXTURE

NOTE:
 ALL L-867 BASES SHALL BE 16" INSIDE DIAMETER X 24" DEEP

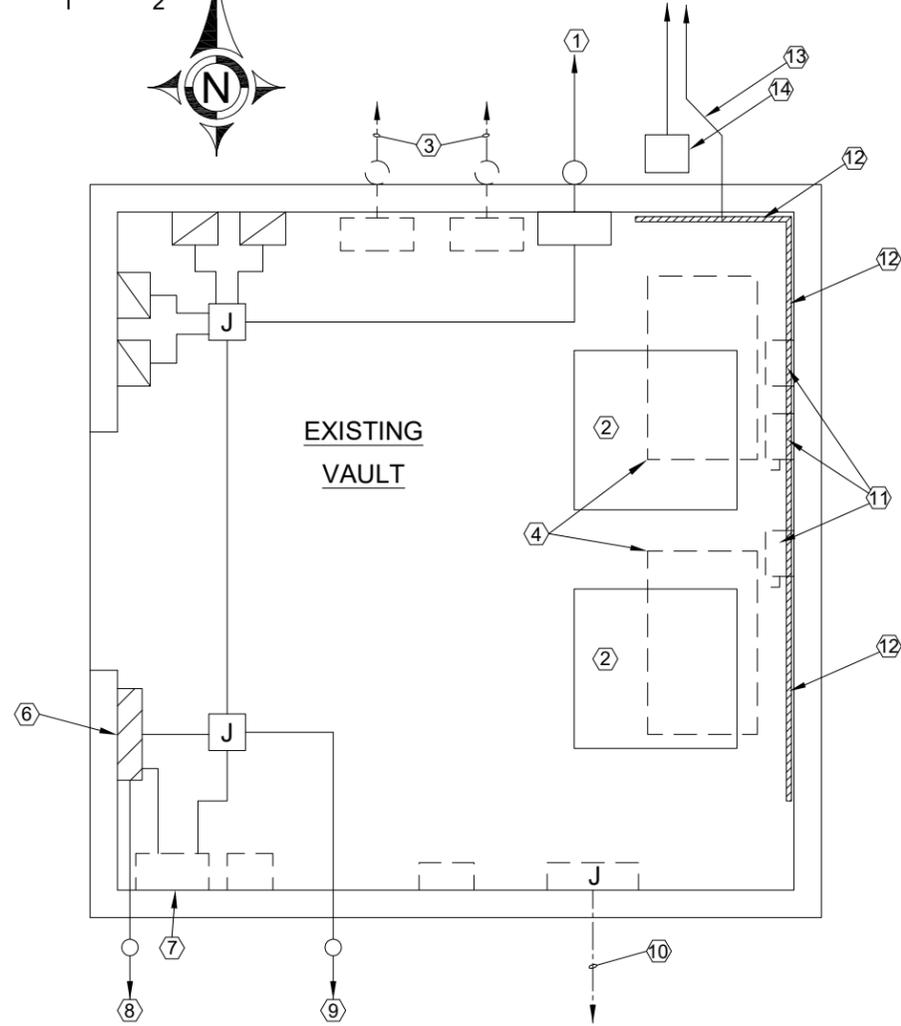
NOTE:
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- DETAIL NOTES:**
- ① EXISTING REGULATOR CONTROL WIRING TO TERMINAL BUILDING L-821 CONTROL PANEL.
 - ② ALL ELECTRICAL EQUIPMENT SHALL BE PROPERLY LABELED AND CABLES TAGGED.
 - ③ THE CONTRACTOR SHALL INSURE THAT ALL ELECTRICAL EQUIPMENT IN THE VAULT IS GROUNDED TO THE NEW GROUND BUS.
 - ④ THE CONTRACTOR SHALL FURNISH AND INSTALL TWO 2P50 AMP CIRCUIT BREAKERS IN EXISTING PANEL.



VAULT PLAN

DETAIL NOTES:

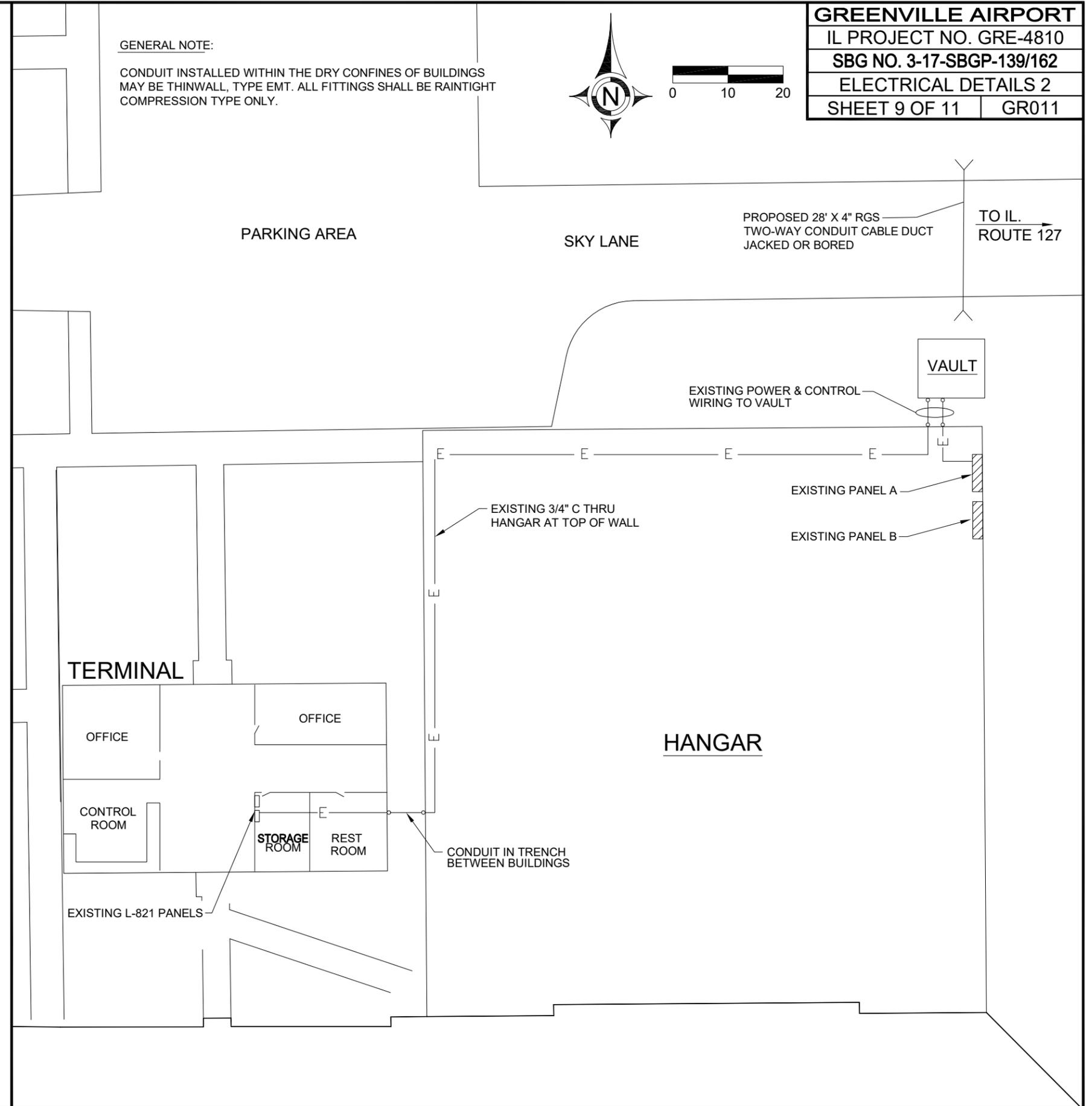
- ① Existing underground feeds in 4" C to REIL systems and wind cones. See Site Plans for continuation.
- ② Proposed runway and taxiway L-828 constant current regulators.
- ③ Existing underground airfield lighting circuits. Locate as necessary to avoid damaging.
- ④ Existing airfield lighting regulators - To be removed. Salvage to become property of Contractor.
- ⑤ See Control Schematic and 1-Line Diagram for conduit/wire requirements.
- ⑥ Existing vault airfield lighting load center.
- ⑦ Existing Pilot Controller Airfield Lighting (PCAL) system to remain. Proposed runway and taxiway shall be connected for control.
- ⑧ Existing power feeds from existing hangar panel.
- ⑨ Existing regulator control wiring to terminal building L-821 control panel.
- ⑩ Existing power and control underground wiring to hangar. Locate as necessary to avoid damaging.
- ⑪ Existing disconnect switches, runway and taxiway series circuit cutouts to be relocated for clearance.
- ⑫ Proposed ground bus to be installed low on wall with stand-off insulators. Ground Bus to be 1/4" x 2", overall length approximately 10'. Connect existing grounding system and new counterpoise to new ground bus.
- ⑬ Proposed counterpoise, connect to proposed ground bus.
- ⑭ Proposed AR110610 Electrical Handhole with solid cover. Runway and Taxiway series circuits enter and extend to series cutouts and constant current regulators.

GENERAL NOTE:

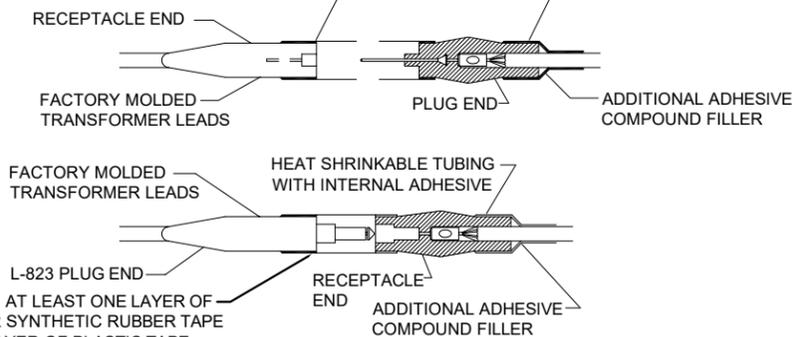
CONDUIT INSTALLED WITHIN THE DRY CONFINES OF BUILDINGS MAY BE THINWALL, TYPE EMT. ALL FITTINGS SHALL BE RAIN-TIGHT COMPRESSION TYPE ONLY.



GREENVILLE AIRPORT	
IL PROJECT NO. GRE-4810	
SBG NO. 3-17-SBGP-139/162	
ELECTRICAL DETAILS 2	
SHEET 9 OF 11	GR011



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.

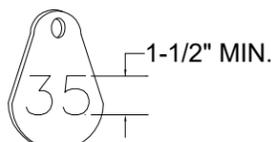
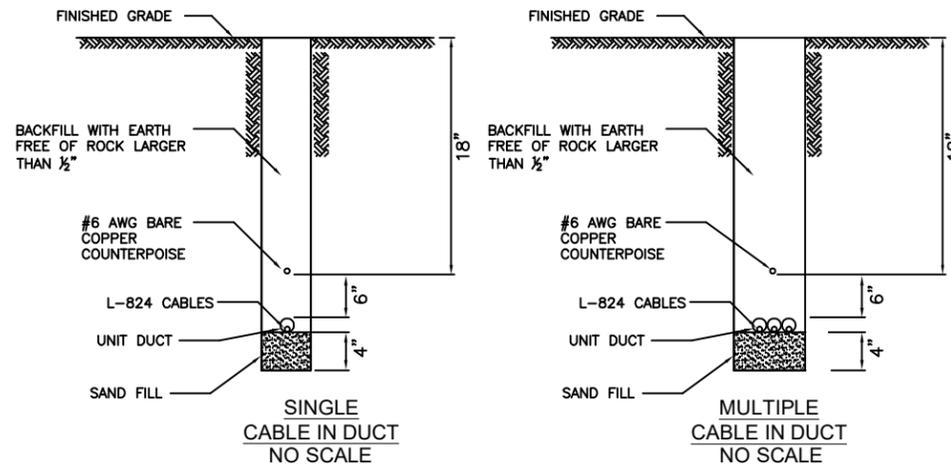


WRAP WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF JOINT.

CONNECTIONS AT SIGNS, RUNWAY & TAXIWAY LIGHTS

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 MANUFACTURER'S INSTRUCTIONS.

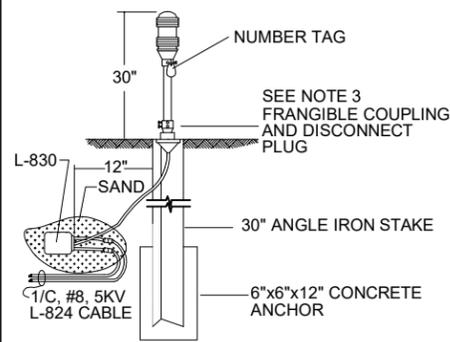


TAG DETAIL
NO SCALE

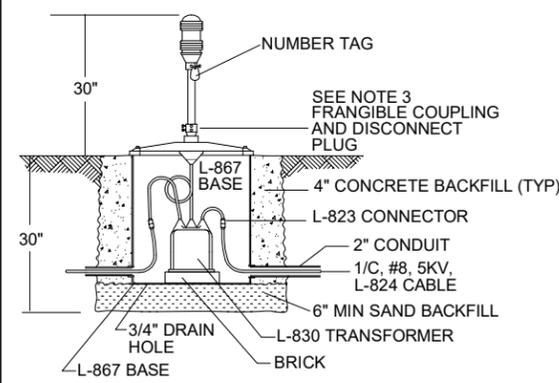
NOTE:
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY (WHITE WITH BLACK NUMBERS)

NUMBER TAGS

RUNWAY & TAXIWAY LIGHTING FIXTURES
NO SCALE



MEDIUM INTENSITY, SERIES CIRCUIT STAKE MOUNTED

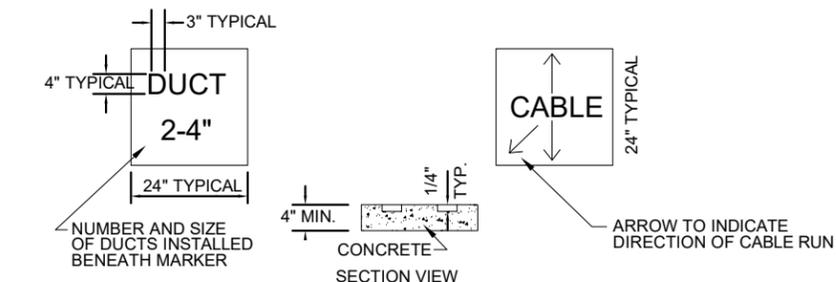
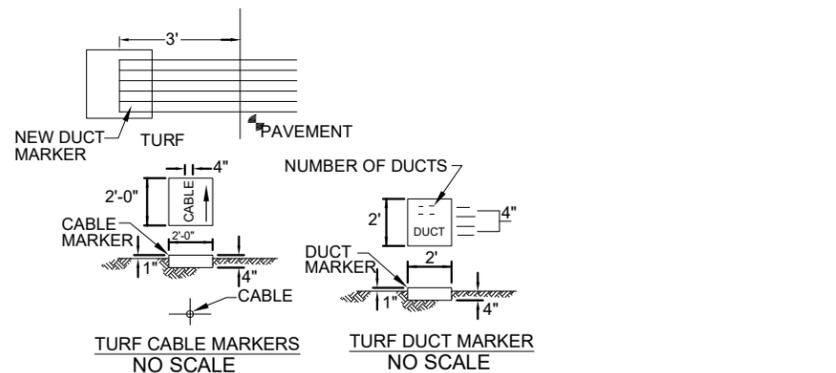


MEDIUM INTENSITY, SERIES CIRCUIT BASE MOUNTED

- 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.)

LIGHTING FIXTURE SCHEDULE

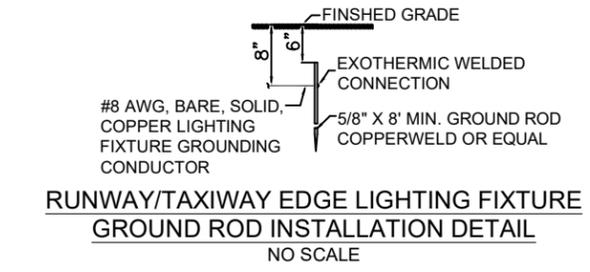
FAA TYPE	USE	DESCRIPTION	CIRCUIT
L-862(L)	MEDIUM INTENSITY RUNWAY EDGE	ADB # EREL6WY38S00102 EATON, FLIGHTLIGHT, OR EQUAL	6.6 AMPS
L-862(L)	MEDIUM INTENSITY RUNWAY EDGE	ADB # EREL6YW38S00102 EATON, FLIGHTLIGHT, OR EQUAL	6.6 AMPS
L-862(L)	MEDIUM INTENSITY RUNWAY EDGE	ADB # EREL6YY38S00102 EATON, FLIGHTLIGHT, OR EQUAL	6.6 AMPS
L-862E(L)	MEDIUM INTENSITY RUNWAY THRESHOLD	ADB # EREL6RG08S00102 EATON, FLIGHTLIGHT, OR EQUAL	6.6 AMPS
L-861T(L)	MEDIUM INTENSITY TAXIWAY EDGE	ADB # ETES-6611 EATON, FLIGHTLIGHT, OR EQUAL	6.6 AMPS
L-858R(L)	MEDIUM INTENSITY SIGN WHITE ON RED	ADB # SR2171X321 (CORD RIGHT LEG) EATON, FLIGHTLIGHT, OR EQUAL.	6.6 AMPS
L-858R(L)	MEDIUM INTENSITY SIGN WHITE ON RED	ADB # SR2171X321 (CORD RIGHT LEG) EATON, FLIGHTLIGHT, OR EQUAL.	6.6 AMPS



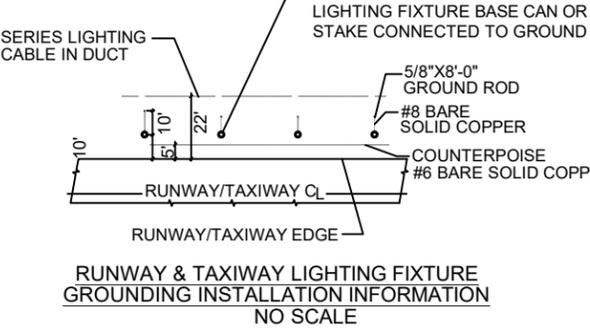
- NOTES:**
- MARKERS SHALL BE PLACED AS SPECIFIED IN ITEMS 108, 109 & 125 OF THE SPECIFICATIONS.
 - COST OF CONCRETE MARKERS IS INCIDENTAL TO THE ASSOCIATED ITEMS OF DUCT OR CABLE.
 - EDGE EXPOSED CONCRETE WITH A 1/2" RADIUS TOOL.
 - WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED, SOME OF THE FOLLOWING 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.

CABLE AND DUCT MARKERS
NO SCALE

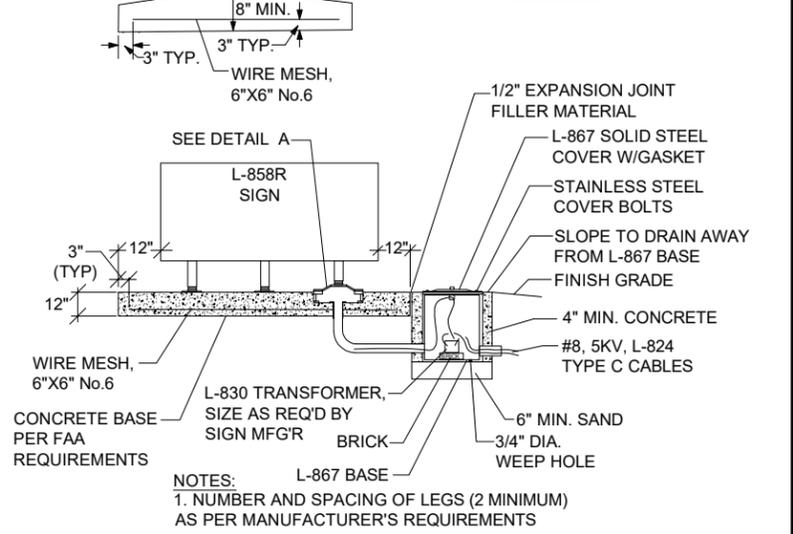
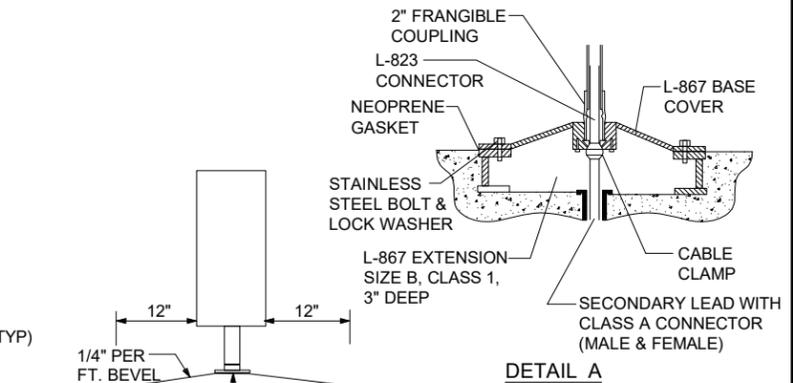
- NOTES:**
- THE RESISTANCE TO GROUND OF THE FIXTURE GROUND RODS SHALL NOT EXCEED 25 OHMS.
 - COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.



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



RUNWAY & TAXIWAY LIGHTING FIXTURE GROUNDING INSTALLATION INFORMATION
NO SCALE



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 SEEDED. 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.