

LETTING ITEM NO. 04A

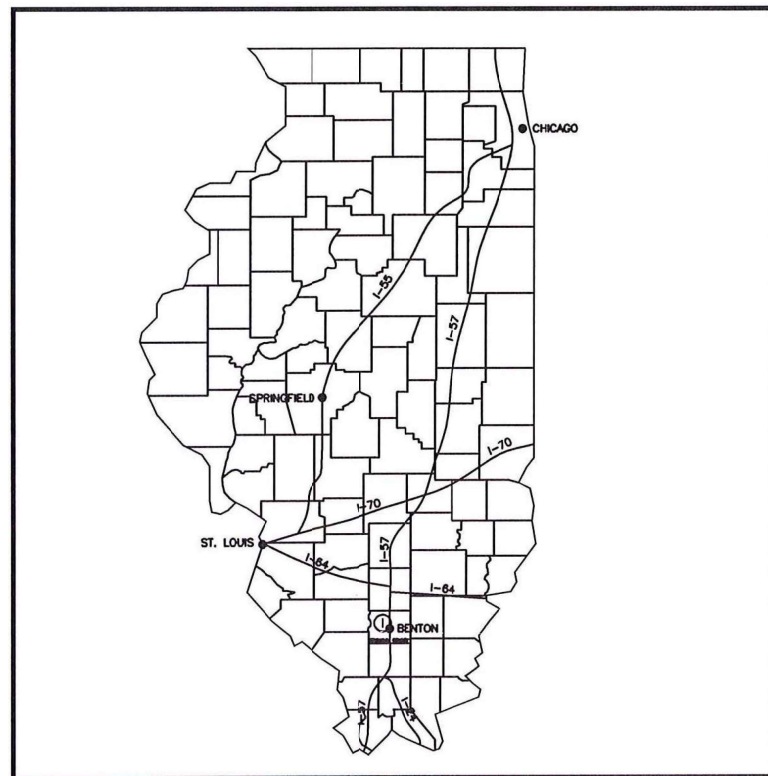
NOVEMBER 8, 2024 LETTING

BN020

TOTAL SHEETS: 14

# CONSTRUCTION PLANS FOR BENTON MUNICIPAL AIRPORT

## REPLACE RUNWAY & TAXIWAY LIGHTS, WIND CONE, AND REILS



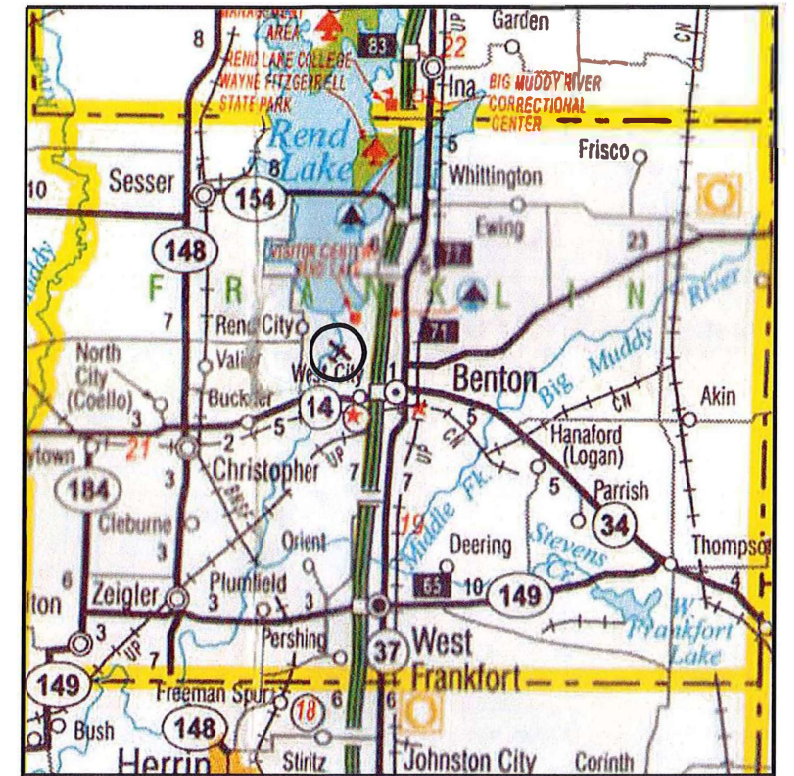
LOCATION MAP

100% SUBMITTAL - SEPTEMBER 13, 2024

ILLINOIS PROJECT NUMBER: H96-4872

SBG PROJECT NUMBER: 3-17-SBGP-162/171/184/TBD

BENTON, ILLINOIS  
FRANKLIN COUNTY



VICINITY MAP



**DESIGN INFORMATION**

- CRITICAL AIRCRAFT = BEECHCRAFT SUPER KING AIR B200
- AIRCRAFT APPROACH CATEGORY (AAC) = B
- AIRPLANE DESIGN GROUP (ADG) = II
- TAXIWAY DESIGN GROUP (TDG) = 2A
- DEPARTURE WEIGHT = 12,500 LBS.

BROWN AND ROBERTS, INC.  
CONSULTING ENGINEERS  
PRESIDENT

SUBMITTED BY *[Signature]*  
JIM W. BROWN, AS PRESIDENT

DATE SUBMITTED 2/27/2024

LISC. NUMBER 062-035047

LISC. EXP. DATE NOVEMBER 30, 2025

DONALD L. FULLER  
ELECTRICAL ENGINEER

SUBMITTED BY *[Signature]*  
DON FULLER

DATE SUBMITTED 2/27/2024

LISC. NUMBER 062-041196

LISC. EXP. DATE NOVEMBER 30, 2025

CITY OF BENTON  
MAYOR

APPROVED BY *[Signature]*  
LEE MESSERSMITH DATE

CITY CLERK

ATTESTED BY *[Signature]*  
BROOK CRAIG DATE



20 Feb 2024 - 2:37pm X:\2022\22125\ac\plans\22125 Cover and Quantity - Index Sheets.dwg: Layout Tab 'Cover'

INDEX OF SHEETS	
SHEET NUMBER	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES & INDEX OF SHEETS
3	CONSTRUCTION SAFETY & PHASING PLAN
4	EXISTING PLAN VIEW 1
5	EXISTING PLAN VIEW 2
6	EXISTING PLAN VIEW 3
7	PROPOSED PLAN VIEW 1
8	PROPOSED PLAN VIEW 2
9	PROPOSED PLAN VIEW 3
10	RUNWAY END AND TERMINAL BUILDING DETAILS
11	REIL INSTALLATION DETAILS
12	WIND CONE DETAILS
13	TYPICAL ELECTRICAL DETAILS
14	GENERAL ELECTRICAL NOTES

SUMMARY OF QUANTITIES			
ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
AR107712	L-807 WIND CONE - 12' LIGHTED	EACH	1
AR107900	REMOVE WIND CONE	EACH	1
AR108158	1/C #8 5KV UG CABLE IN UD	FOOT	13,000
AR108656	3/C #6 600 V UG CABLE IN UD	FOOT	500
AR108706	1/C #6 COUNTERPOISE	FOOT	12,000
AR108756	1/C #6 GROUND	FOOT	1,000
AR109311	7.5 KW REGULATOR, STYLE 1	EACH	1
AR109410	VAULT WIRING	L SUM	1
AR109903	REMOVE REGULATOR	EACH	1
AR110610	ELECTRICAL HANDHOLE	EACH	2
AR125411	MITL - STAKE MOUNTED - LED	EACH	39
AR125416	MITL - BASE MOUNTED - LED	EACH	7
AR125506	MIRL, STAKE MOUNTED - LED	EACH	30
AR125511	MIRL, BASE MOUNTED - LED	EACH	10
AR125541	MI THRESHOLD LIGHT STAKE MTD - LED	EACH	12
AR125546	MI THRESHOLD LIGHT BASE MTD - LED	EACH	2
AR125610	REILS	PAIR	2
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	87
AR125902	REMOVE BASE MOUNTED LIGHT	EACH	12
AR125907	REMOVE REILS	PAIR	2
AR150520	MOBILIZATION	L SUM	1
AR901525	SEEDING	L SUM	1

**SCOPE OF WORK**

THE PROJECT SCOPE CONSISTS OF THE REPLACEMENT OF THE RUNWAY AND TAXIWAY LIGHTS AND CABLES, WIND CONE, AND RUNWAY END IDENTIFIER LIGHTS (REILS).

**PROPOSED SAFETY PLAN**

GENERAL- THE BENTON MUNICIPAL AIRPORT CURRENTLY HAS A PAVED NORTH-SOUTH RUNWAY (4000-FT BY 75-FT).

ANY WORK WITHIN 125 OF THE CENTERLINE WILL REQUIRE CLOSURE OF THE RUNWAY.

THE CONTRACTOR SHALL SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) CONFIRMING COMPLIANCE WITH THE CONSTRUCTION SAFETY PLANING 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.

**HAUL ROUTE AND EQUIPMENT PARKING**

THE CONTRACTOR WILL USE THE DESIGNATED HAUL ROUTE AND EQUIPMENT PARKING AREA SHOWN ON THIS SAFETY PLAN. THE PROPOSED EQUIPMENT PARKING AREA WILL BE APPROXIMATELY 100-FT BY 200-FT. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED 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 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 AND AIRPORT 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.....FRANKLIN  
 CITY.....BENTON  
 TOWNSHIP.....BROWNING  
 SECTION NO.....12 & 13  
 NEAREST MAJOR ROAD INTERSECTION...RT 37 PETROFF RD.  
 AIRPORT ADDRESS....BENTON MUNICIPAL AIRPORT  
 P.O. BOX 158  
 BENTON, IL. 62812

**AIRPORT SECURITY**

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE PROPOSED HAUL ROUTE SHOWN ON THIS SAFETY PLAN IS THE ONLY ACCESS. THE 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.

**BENTON MUNICIPAL AIRPORT**

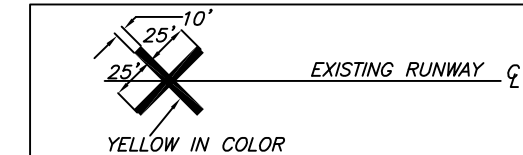
**IL PROJECT NO. H96-4872**

**SBG NO. 3-17-SBGP-162/171/184/TBD**

**CONSTRUCTION SAFETY & PHASING PLAN**

**SHEET 3 OF 14**

**BN020**



**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 FT. FROM THE AFFECTED RUNWAY CENTERLINE
- \* RUNWAY LIGHTS SHALL BE REACTIVATED.

**HEIGHT OF CONSTRUCTION EQUIPMENT**

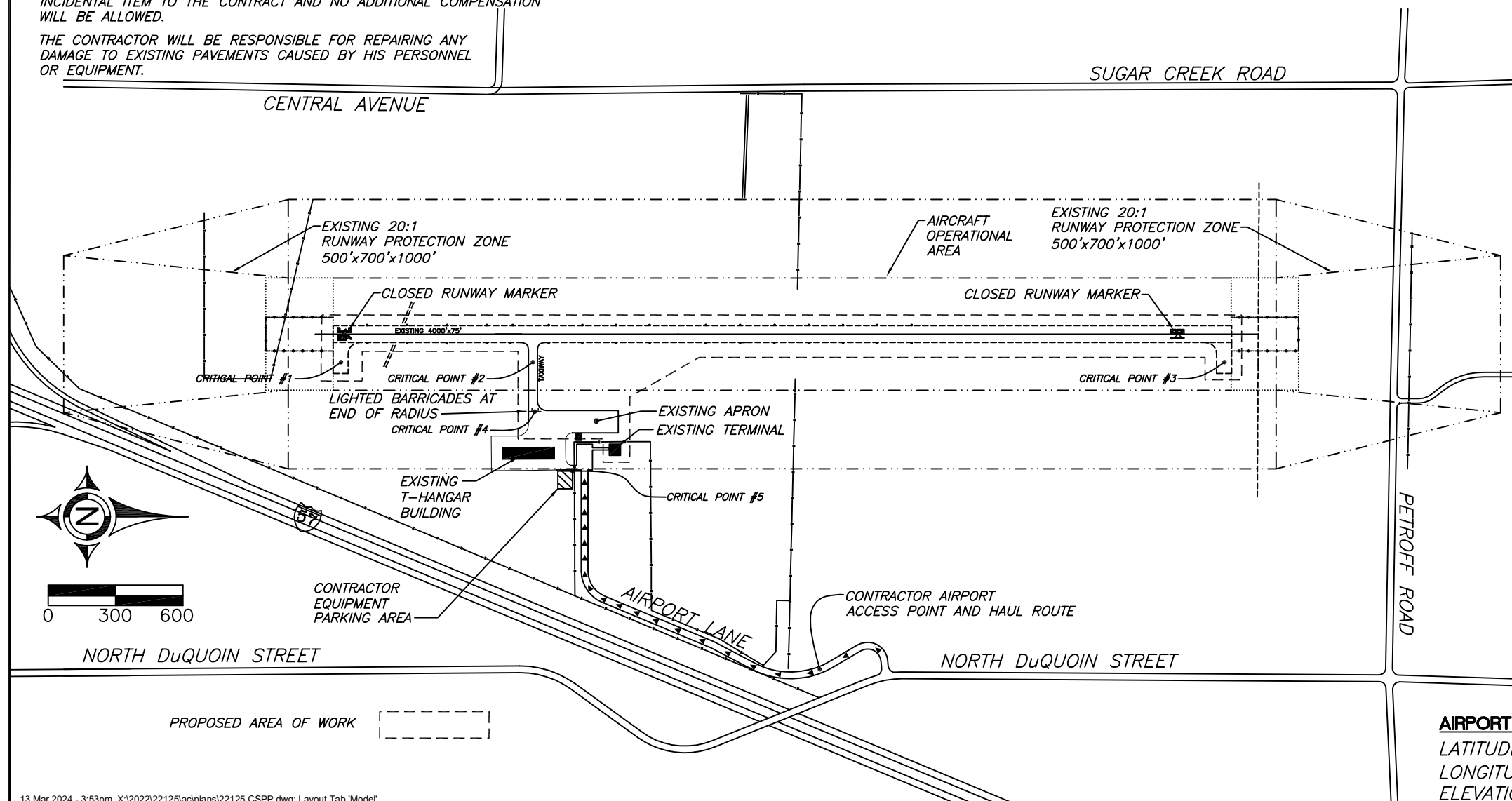
THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT IS 12 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A CONCRETE MIXING TRUCK.

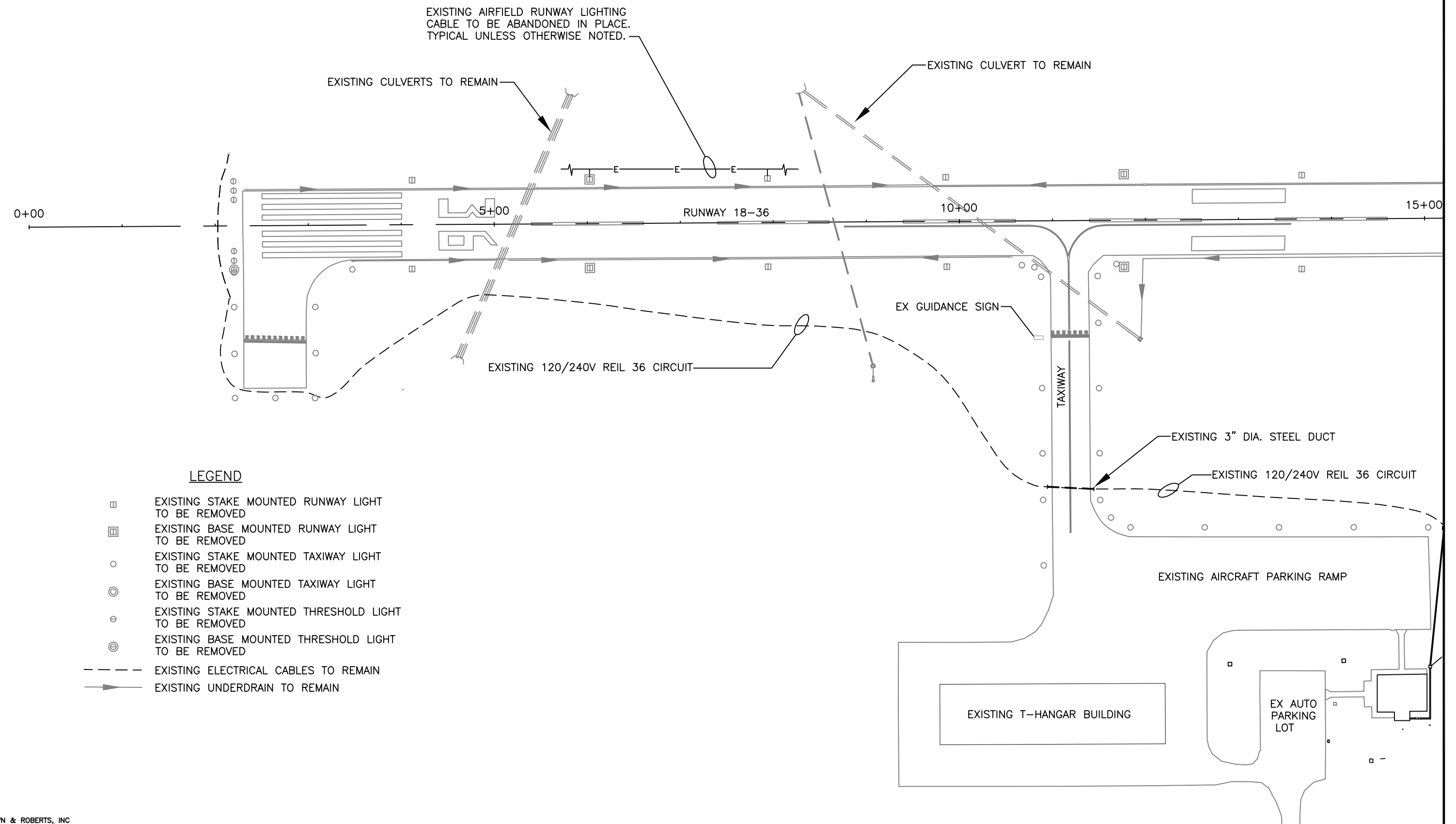
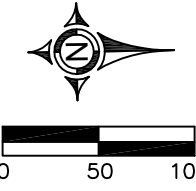
**CRITICAL POINT LIST**

CRITICAL PT. NO.	LATITUDE	LONGITUDE	ELEVATION (MSL)	DESCRIPTION
1	38° 00' 11.21"N	88° 56' 02.08"W	442.0	CL TURNAROUND, 125' FROM RUNWAY CL
2	38° 00' 19.66"N	88° 56' 02.23"W	439.5	CL TAXIWAY, 125' FROM RUNWAY CL
3	38° 00' 50.11"N	88° 56' 02.73"W	443.5	CL TURNAROUND, 125' FROM RUNWAY CL
4	38° 00' 19.72"N	88° 55' 59.56"W	442.0	BARRICADE LOCATION - END OF TAXIWAY
5	38° 00' 21.15"N	88° 55' 55.55"W	443.0	NW CORNER EQUIPMENT PARKING AREA

**AIRPORT REFERENCE POINT:**

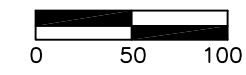
LATITUDE: 38° 00' 24.334"N  
 LONGITUDE: 88° 56' 03.910"W  
 ELEVATION: 444 MSL





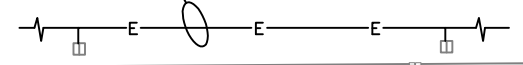
- LEGEND**
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
  - ▣ EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
  - EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
  - ⊙ EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
  - ⊖ EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
  - ⊗ EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
  - - - EXISTING ELECTRICAL CABLES TO REMAIN
  - ➔ EXISTING UNDERDRAIN TO REMAIN

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**BENTON MUNICIPAL AIRPORT**  
 IL PROJECT NO. H96-4872  
 SBG NO. 3-17-SBGP-162/171/184/TBD  
 EXISTING PLAN VIEW 2  
 SHEET 5 OF 14 | BN020

EXISTING AIRFIELD RUNWAY LIGHTING  
 CABLE TO BE ABANDONED IN PLACE.  
 TYPICAL UNLESS OTHERWISE NOTED.



15+00

20+00

RUNWAY 18-36

25+00

EXISTING 240V PAPI CIRCUIT AND  
 EXISTING 120/240V REIL 18 CIRCUIT

EXISTING ELECTRICAL HANDHOLE







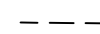

EXISTING WIND CONE

EXISTING AIRCRAFT  
 PARKING  
 APRON

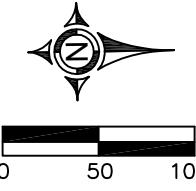
EXISTING ELECTRICAL  
 HANDHOLE TO REMAIN  
 EXISTING AIRPORT  
 TERMINAL BUILDING

EXISTING ANTENNA  
 TOWER TO REMAIN

**LEGEND**

-  EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
-  EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
-  EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
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-  EXISTING ELECTRICAL CABLES TO REMAIN
-  EXISTING UNDERDRAIN TO REMAIN

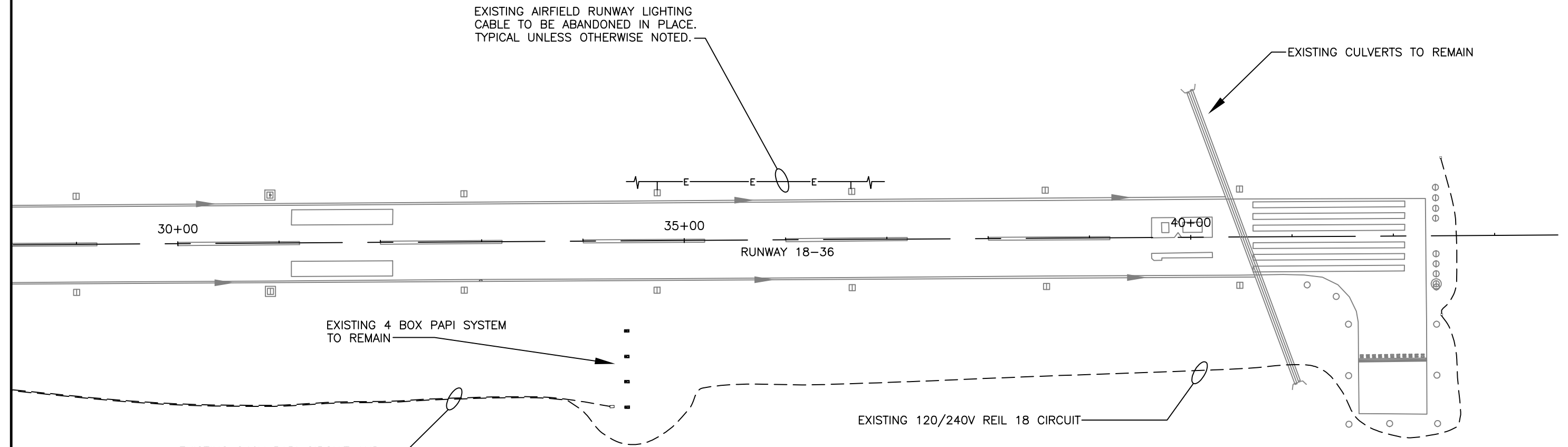
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**BENTON MUNICIPAL AIRPORT**  
 IL PROJECT NO. H96-4872  
 SBG NO. 3-17-SBGP-162/171/184/TBD  
 EXISTING PLAN VIEW 3  
 SHEET 6 OF 14 | BN020

EXISTING AIRFIELD RUNWAY LIGHTING  
 CABLE TO BE ABANDONED IN PLACE.  
 TYPICAL UNLESS OTHERWISE NOTED.

EXISTING CULVERTS TO REMAIN

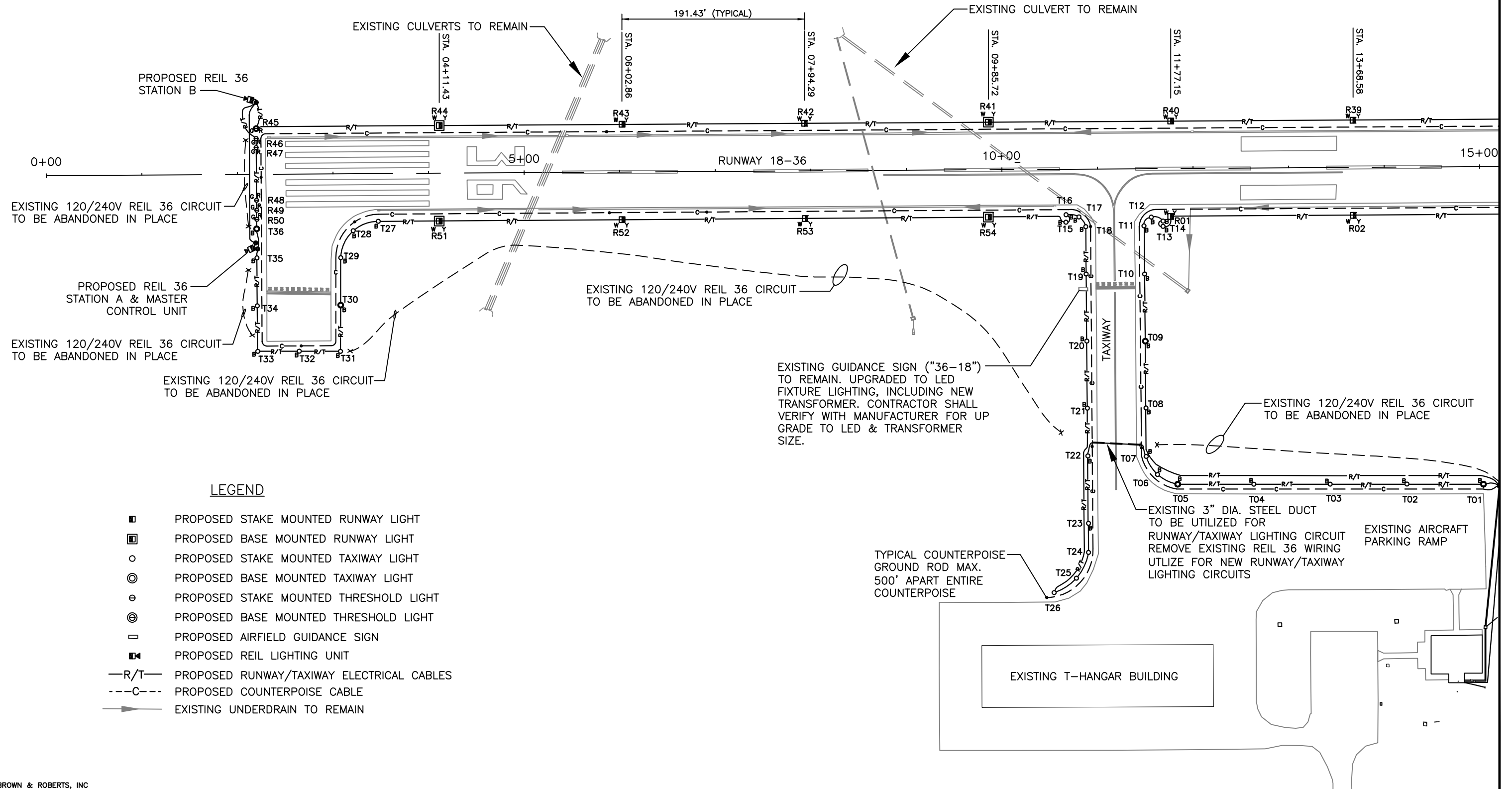
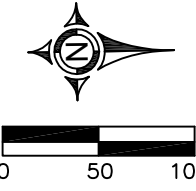


**LEGEND**

- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- ▣ EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- ⊙ EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- ⊖ EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- ⊕ EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- - - EXISTING ELECTRICAL CABLES TO REMAIN
- ➔ EXISTING UNDERDRAIN TO REMAIN

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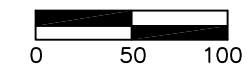




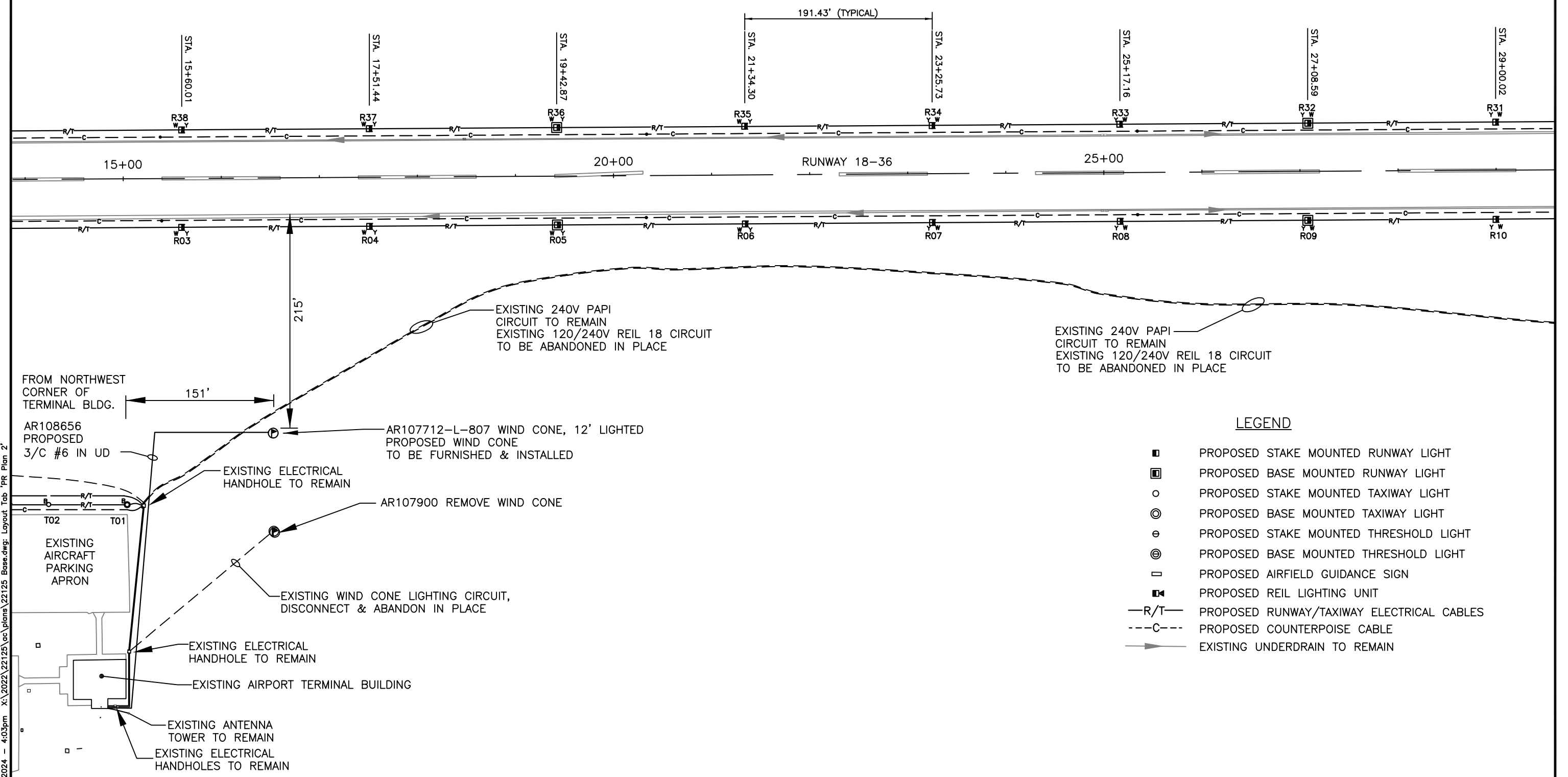
**LEGEND**

- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- ▣ PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- ⊙ PROPOSED BASE MOUNTED TAXIWAY LIGHT
- ⊖ PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- ⊕ PROPOSED BASE MOUNTED THRESHOLD LIGHT
- PROPOSED AIRFIELD GUIDANCE SIGN
- PROPOSED REIL LIGHTING UNIT
- R/T- PROPOSED RUNWAY/TAXIWAY ELECTRICAL CABLES
- C- PROPOSED COUNTERPOISE CABLE
- EXISTING UNDERDRAIN TO REMAIN

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**BENTON MUNICIPAL AIRPORT**  
 IL PROJECT NO. H96-4872  
 SBG NO. 3-17-SBGP-162/171/184/TBD  
 PROPOSED PLAN VIEW 2  
 SHEET 8 OF 14 | BN020

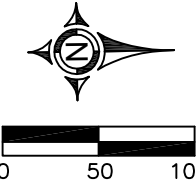


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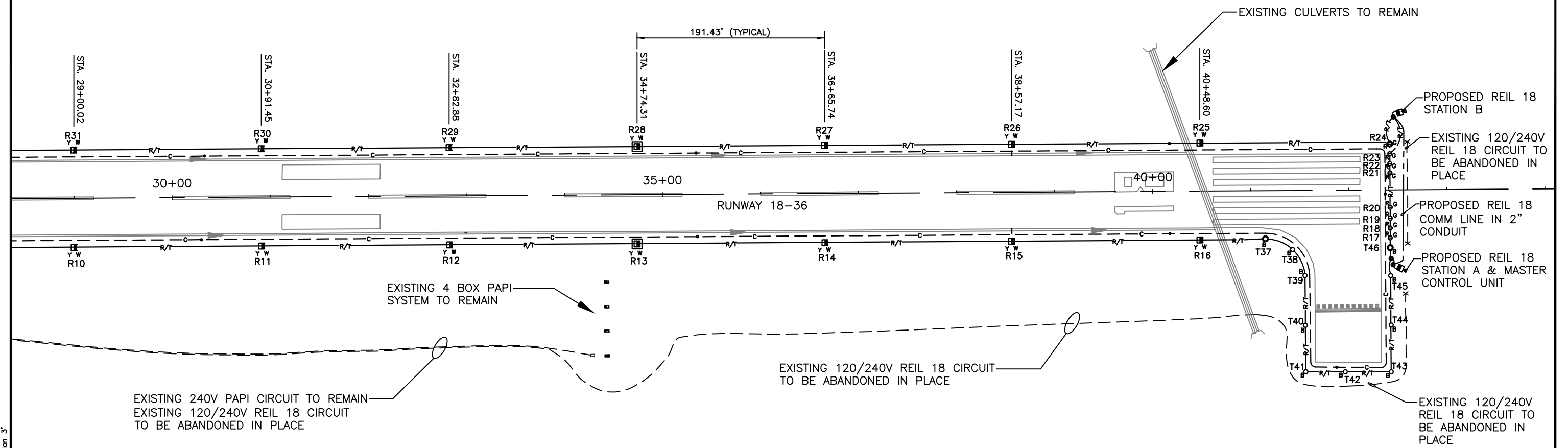
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- ▣ PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- ⊙ PROPOSED BASE MOUNTED TAXIWAY LIGHT
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- ⊗ PROPOSED BASE MOUNTED THRESHOLD LIGHT
- ▢ PROPOSED AIRFIELD GUIDANCE SIGN
- ⊠ PROPOSED REIL LIGHTING UNIT
- R/T— PROPOSED RUNWAY/TAXIWAY ELECTRICAL CABLES
- C--- PROPOSED COUNTERPOISE CABLE
- ▶ EXISTING UNDERDRAIN TO REMAIN

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**BENTON MUNICIPAL AIRPORT**  
 IL PROJECT NO. H96-4872  
 SBG NO. 3-17-SBGP-162/171/184/TBD  
 PROPOSED PLAN VIEW 3  
 SHEET 9 OF 14 | BN020

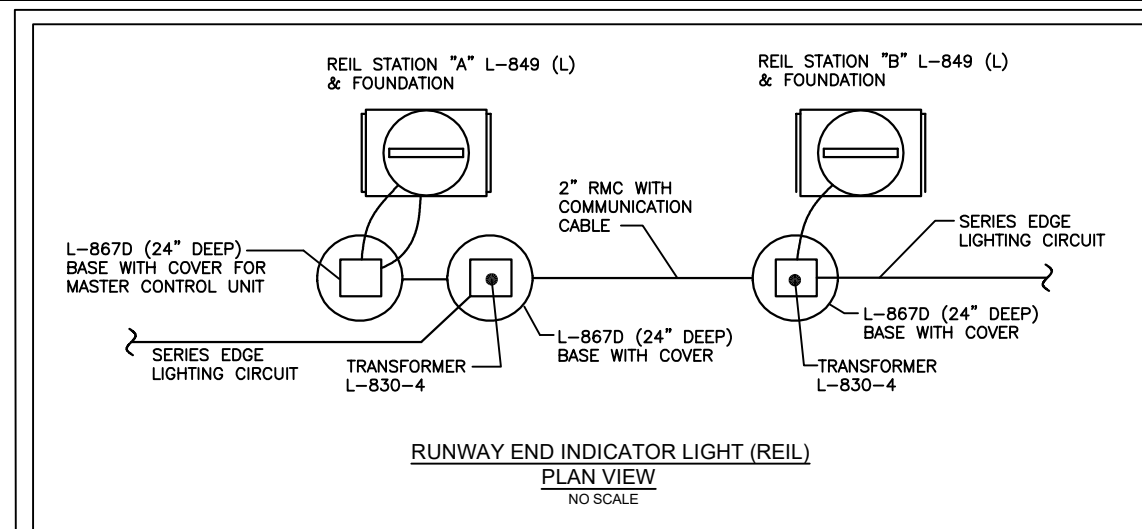
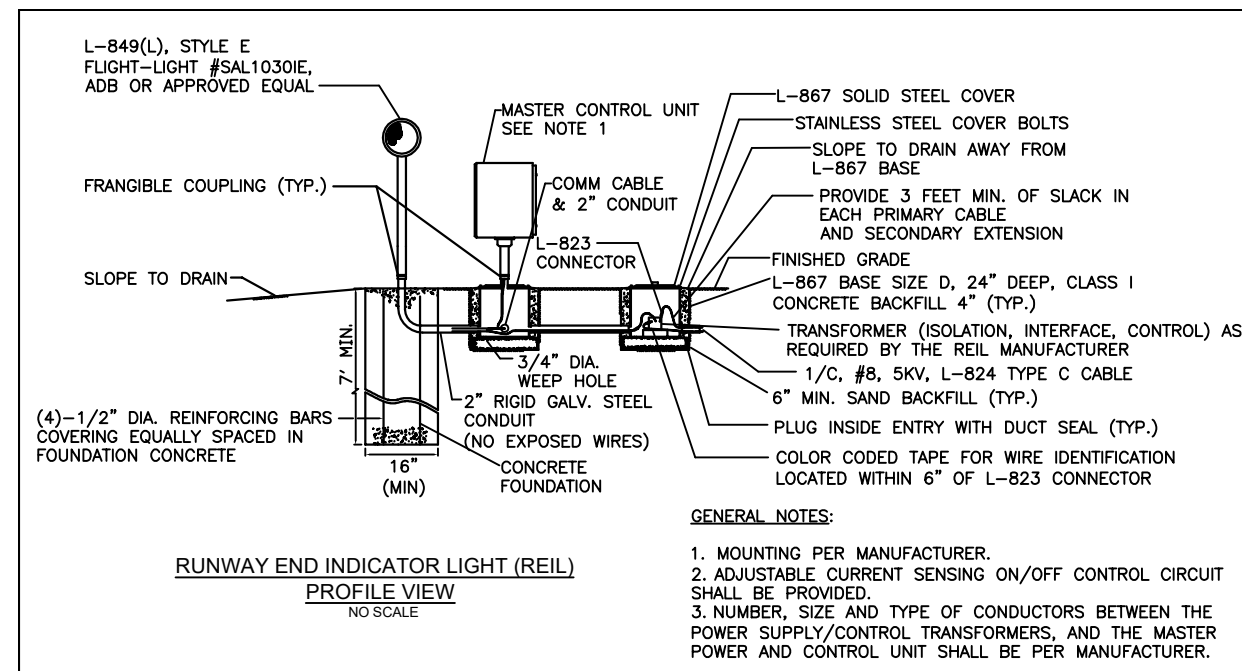


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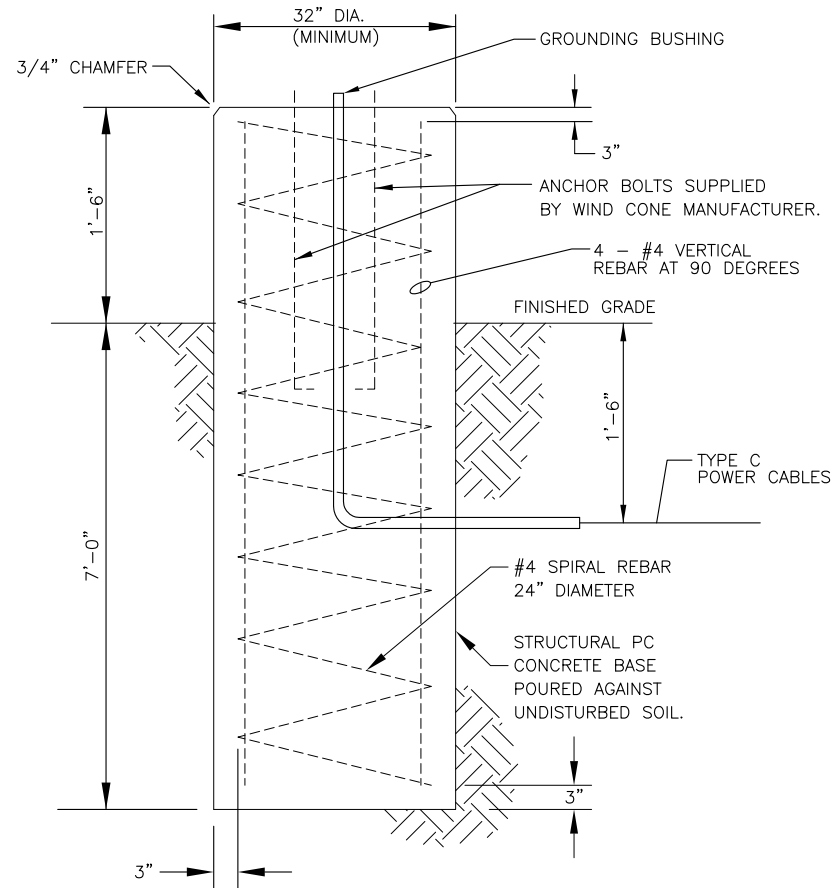
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- ▣ PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- ⊙ PROPOSED BASE MOUNTED TAXIWAY LIGHT
- ⦶ PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- ⊕ PROPOSED BASE MOUNTED THRESHOLD LIGHT
- PROPOSED AIRFIELD GUIDANCE SIGN
- ◻ PROPOSED REIL LIGHTING UNIT
- R/T— PROPOSED RUNWAY/TAXIWAY ELECTRICAL CABLES
- C--- PROPOSED COUNTERPOISE CABLE
- ▶ EXISTING UNDERDRAIN TO REMAIN

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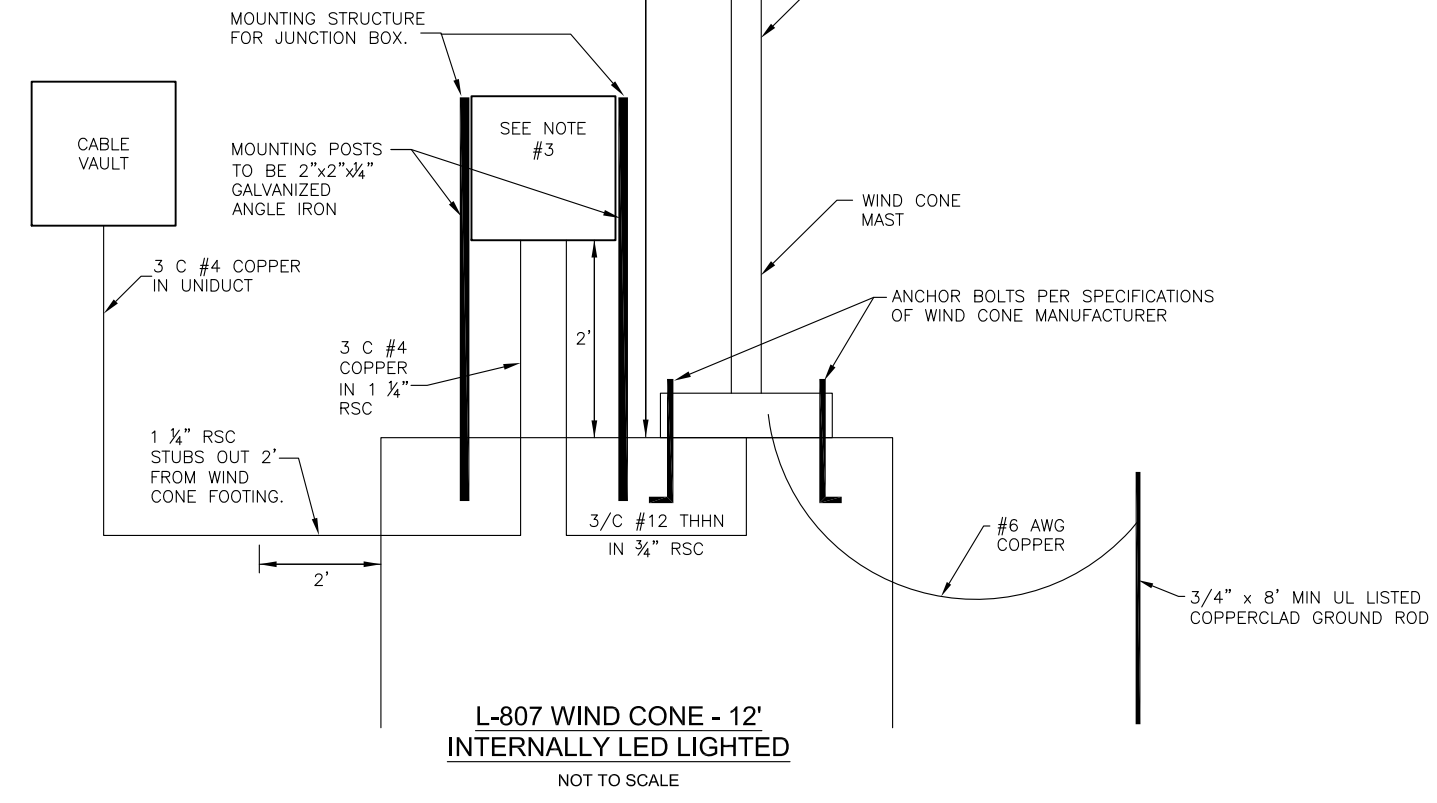
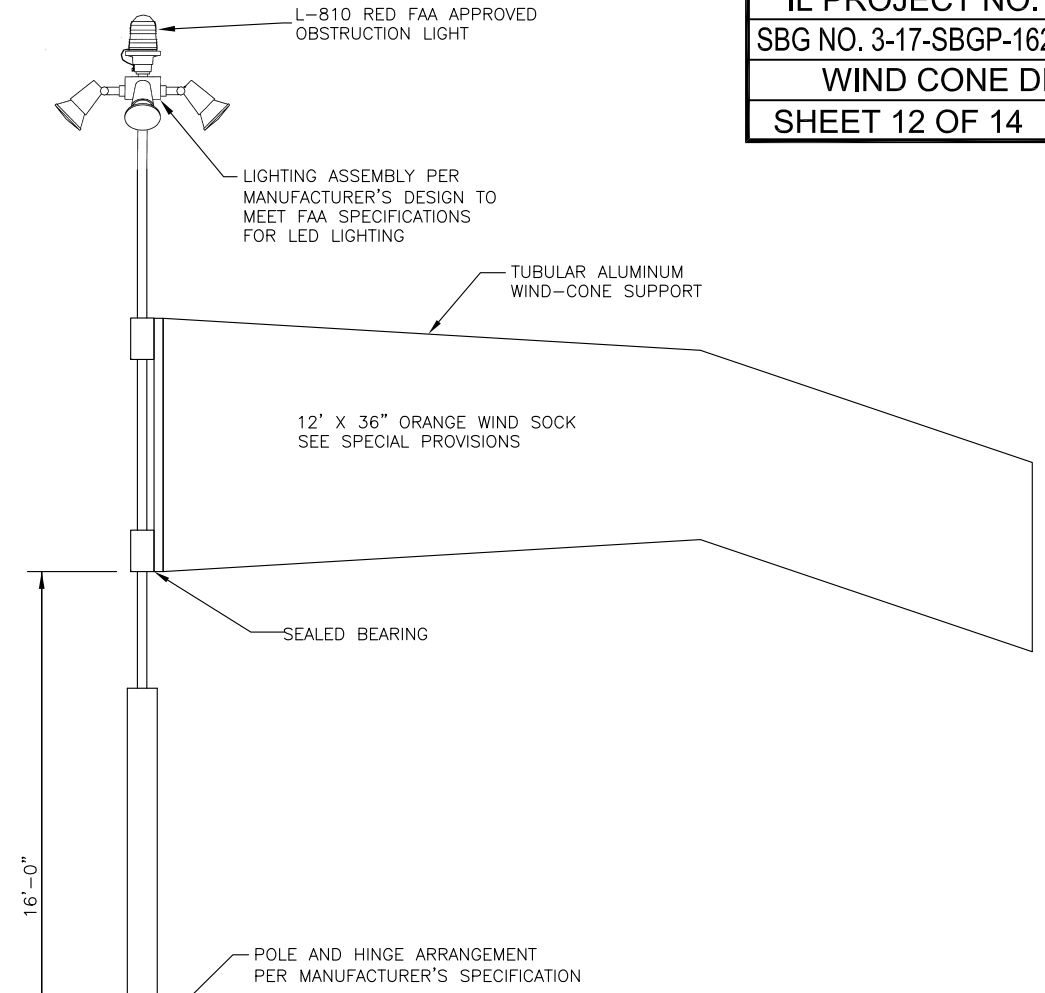
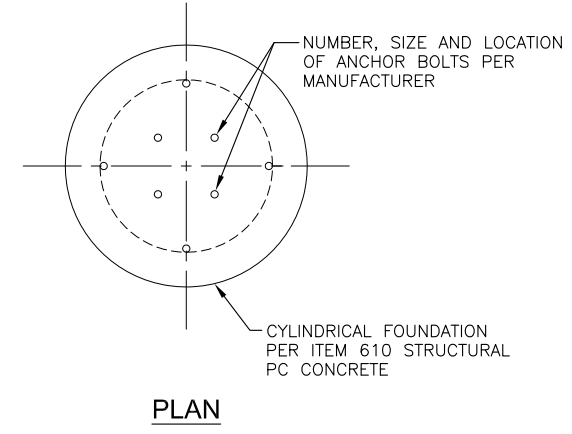




LIGHTING SCHEDULE		
<p><b>RUNWAY EDGE LIGHTING FIXTURE L-861(L) LED, WITH ARCTIC OPTION:</b></p> <p>BASE MOUNTED - ADB # EMIS2WY7SF1, FLIGHT-LIGHT, HALI-BRITE, OR EQUAL.</p> <p>ISOLATION TRANSFORMER - L-830-1 30/45 WATTS, 6.6 PRI. AMPS, 60 HZ.</p> <p>BASE TYPE - L-867D, 16" DIA, 24" DEPTH, WITH BASE COVER, COPPER GROUND CLAMP, NEOPRENE GASKET</p> <p>STAKE MOUNTED - ADB # EMIS2WY7SF1, FLIGHT-LIGHT, HALI-BRITE, OR EQUAL.</p> <p>ISOLATION TRANSFORMER - L-830-1 30/45 WATTS, 6.6 PRI. AMPS, 60 HZ.</p> <p>STAKE TYPE - L-895, 30" DEPTH, WITH GROUND CLIP.</p>	<p><b>RUNWAY THRESHOLD LIGHTING FIXTURE L-861E(L) LED, WITH ARCTIC OPTION:</b></p> <p>BASE MOUNTED - ADB # EMIS2GR7SF1, FLIGHT-LIGHT, HALI-BRITE, OR EQUAL.</p> <p>ISOLATION TRANSFORMER - L-830-1 30/45 WATTS, 6.6 PRI. AMPS, 60 HZ.</p> <p>BASE TYPE - L-867D, 16" DIA, 24" DEPTH, WITH BASE COVER, COPPER GROUND CLAMP, NEOPRENE GASKET</p> <p>STAKE MOUNTED - ADB # EMIS2GR7SF1, FLIGHT-LIGHT, HALI-BRITE, OR EQUAL.</p> <p>ISOLATION TRANSFORMER - L-830-1 30/45 WATTS, 6.6 PRI. AMPS, 60 HZ.</p> <p>STAKE TYPE - L-895, 30" DEPTH, WITH GROUND CLIP.</p>	<p><b>TAXIWAY LIGHTING FIXTURE L-861T(L) LED, WITH ARCTIC OPTION:</b></p> <p>BASE MOUNTED - ADB # ETES/511, FLIGHT-LIGHT, HALI-BRITE, OR EQUAL.</p> <p>ISOLATION TRANSFORMER - L-830-1 30/45 WATTS, 6.6 PRI. AMPS, 60 HZ.</p> <p>BASE TYPE - L-867D, 16" DIA, 24" DEPTH, WITH BASE COVER, COPPER GROUND CLAMP, NEOPRENE GASKET.</p> <p>STAKE MOUNTED - ADB # ETES/511, FLIGHT-LIGHT, HALI-BRITE, OR EQUAL.</p> <p>ISOLATION TRANSFORMER - L-830-1 30/45 WATTS, 6.6 PRI. AMPS, 60 HZ.</p> <p>STAKE TYPE - L-895, 30" DEPTH, WITH GROUND CLIP.</p>
<p><b>WIND CONE L-807(L) LED PRIMARY INTERNALLY LIGHTED, 36" X 12" SOCK, WINCH FOR LOWERING ADB # L807-S2-IN-120, FLIGHT-LIGHT, HALI-BRITE, OR EQUAL</b></p>	<p><b>REIL LED L-849(L): FLIGHT-LIGHT # SAL1030IE, ADB, HALI-BRITE, OR EQUAL</b></p>	

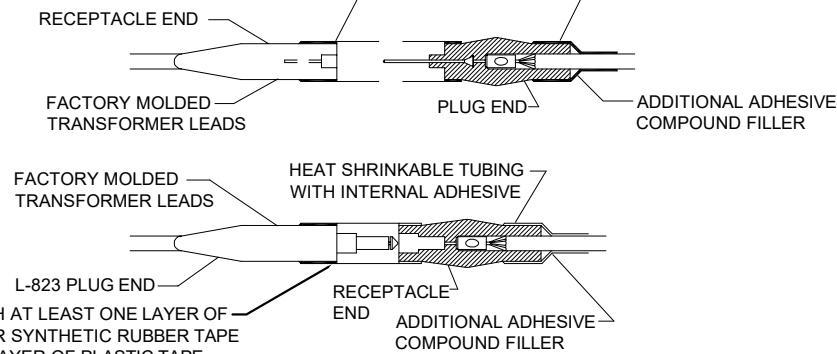


**ELEVATION**  
**WIND CONE FOUNDATION DETAIL**  
 NOT TO SCALE



- NOTES:
1. WIND CONE TO BE L-807, SIZE 2 WIND CONE WITH CENTER HINGED POLE ADB # 1807-S2-EX-120-ON-5, FLIGHTLIGHT, OR APPROVED EQUAL.
  2. WIND CONE SHALL BE TYPE L807 THAT IS FAA PHOTOELECTRIC CONTROLLED.
  3. CONTRACTOR SHALL PROVIDE 30 AMP WEATHER PROOF DISCONNECT (WEIGMAN MODEL BN4121206C OR EQUAL) THAT IS 12" HIGH, 10" WIDE AND 6" DEEP. DISCONNECT SHALL BE LOCATED FOUR (4) FEET ABOVE FINISH GRADE TO ISOLATE POWER TO WIND CONE LIGHTS FROM POWER SOURCE.
  4. ALL POWER CABLE SHALL BE ENCLOSED IN RIGID STEEL CONDUIT (RSC).
  5. ALL CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 610 STRUCTURAL PC CONCRETE REQUIREMENTS.

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.

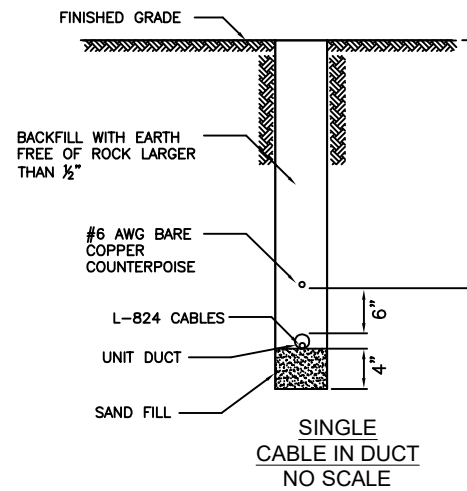


WRAP WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF JOINT.

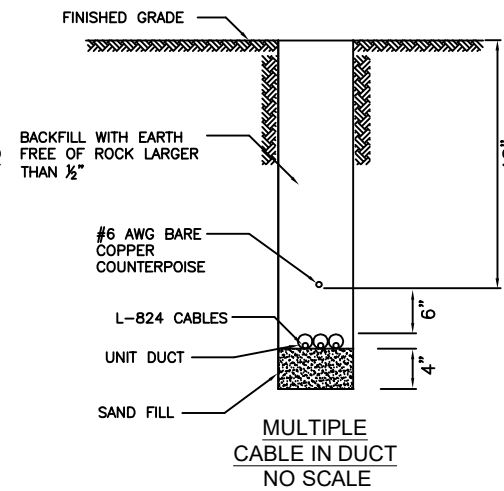
**CONNECTIONS AT SIGNS, RUNWAY & TAXIWAY LIGHTS**

**NOTES:**

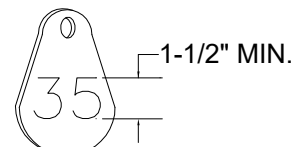
- INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE
- CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR/LUG MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. THE CRIMPING TOOL USED MUST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



**SINGLE CABLE IN DUCT**  
NO SCALE



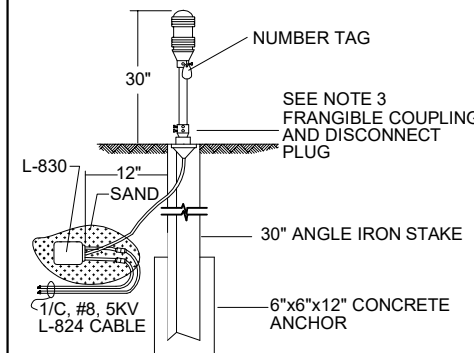
**MULTIPLE CABLE IN DUCT**  
NO SCALE



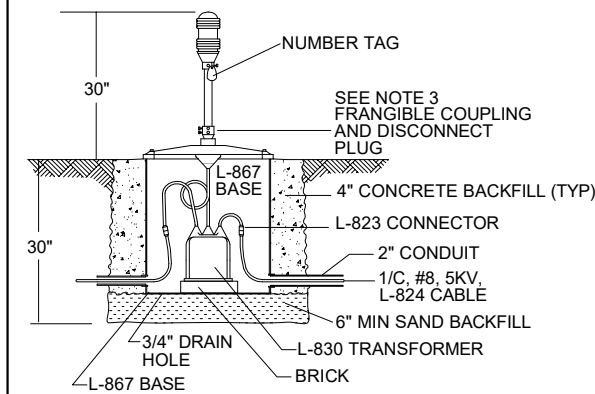
**TAG DETAIL**  
NO SCALE

**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



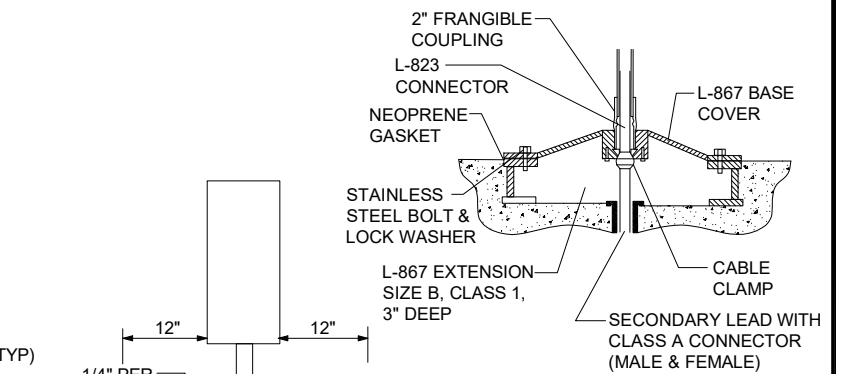
**MEDIUM INTENSITY, SERIES CIRCUIT**  
**STAKE MOUNTED**



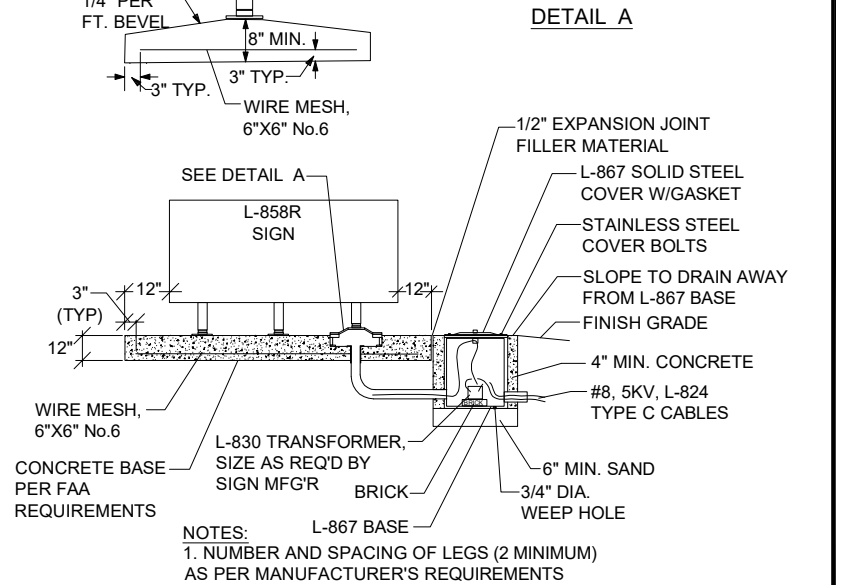
**MEDIUM INTENSITY, SERIES CIRCUIT**  
**BASE MOUNTED**

**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.)



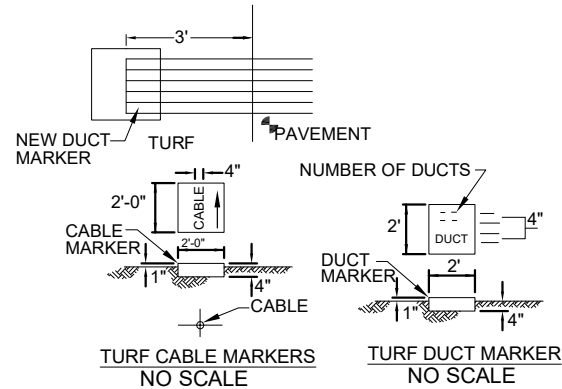
**DETAIL A**



**NOTES:**

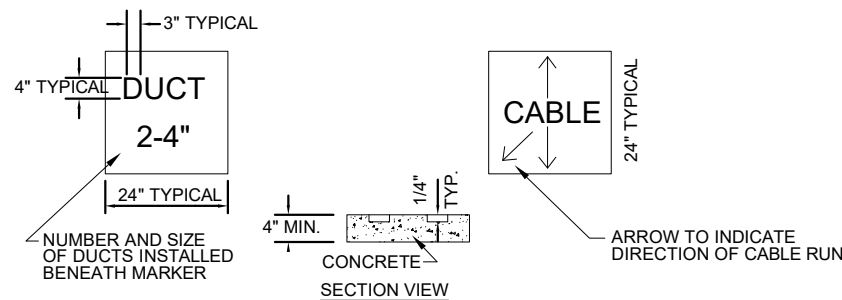
- NUMBER AND SPACING OF LEGS (2 MINIMUM) AS PER MANUFACTURER'S REQUIREMENTS

**SIGN PEDESTALS**



**TURF CABLE MARKERS**  
NO SCALE

**TURF DUCT MARKER**  
NO SCALE



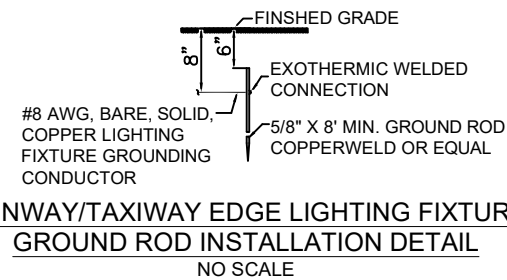
**NOTES:**

- 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.

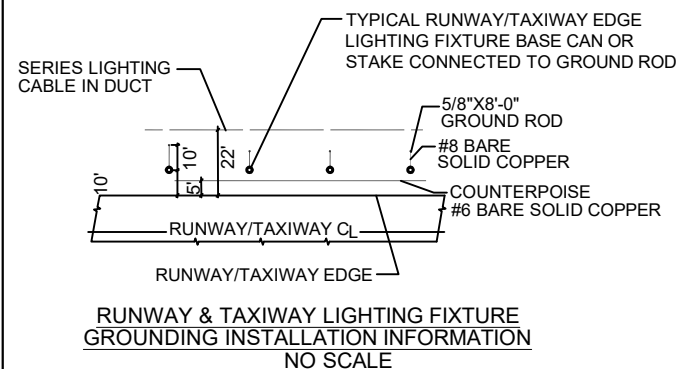
**CABLE AND DUCT MARKERS**  
NO SCALE

**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

**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.