

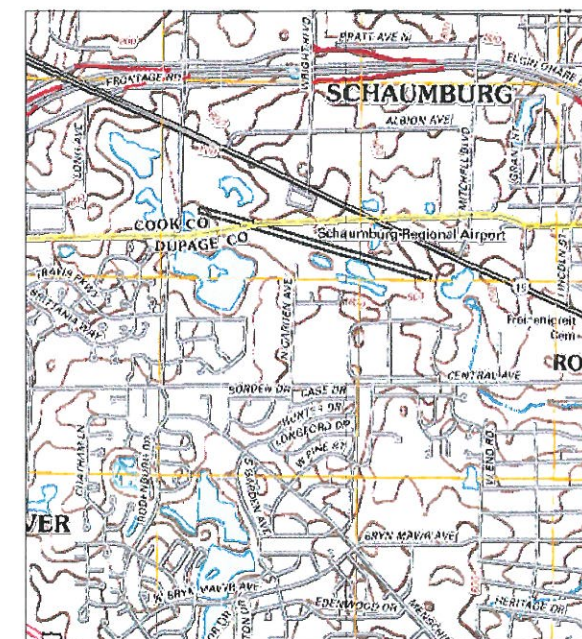
CONSTRUCTION PLANS

REHABILITATE AIRFIELD LIGHTS

VILLAGE OF SCHAUMBURG
SCHAUMBURG REGIONAL AIRPORT (06C)
SCHAUMBURG, COOK AND DUPAGE COUNTY, ILLINOIS

SBG PROJECT NO. 3-17-0124-B30
IDA PROJECT NO. 06C-4161

VICINITY MAP



No.	Issue/Description	Sheets Changed	Date	By



Seal (Sheets 16-33) **COVERING ELECTRICAL DESIGN**
 Date of Plans **EXPIRES: 11/30/2015**
Kevin Lightfoot 11/12/2013
 Kevin N. Lightfoot, P.E.
 Project Engineer

Seal (Sheets 16-33) **LINDSAY DENET HAUSMAN**
 Date of Plans **Exp 11/30/15 11/12/13**
Lindsay Hausman
 Lindsay D. Hausman, P.E.
 Project Engineer

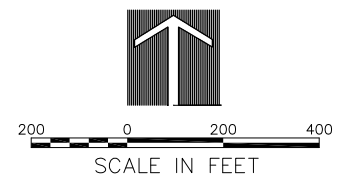
HANSON
 HANSON PROFESSIONAL SERVICES INC.
 815 Commerce Drive, Suite 200
 Oak Brook, Illinois 60523
 Telephone: 630.990.3800
 Fax: 630.990.3800
Ronald M. Hudson 11/12/13
 Ronald M. Hudson, AICP
 Project Manager

SCHAUMBURG REGIONAL AIRPORT
 VILLAGE OF SCHAUMBURG
 905 W. Irving Park Road
 Schaumburg, IL 60193
 Telephone: 847.923.3863
Brian Townsend 11/14/2013
 Brian Townsend
 Village Manager

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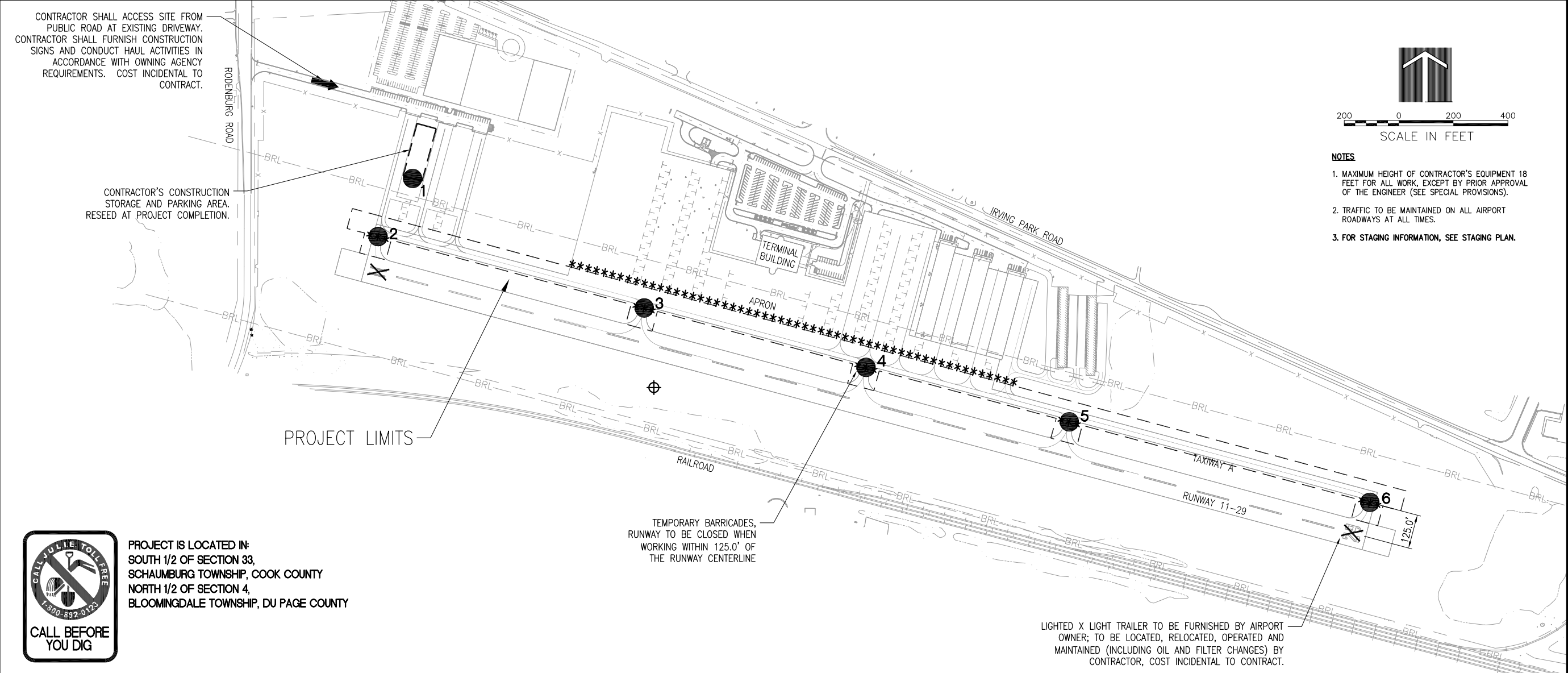


Schaumburg Regional Airport
905 Irving Park Road
Schaumburg, IL 60193
Phone: 847-923-3863



NOTES

1. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT 18 FEET FOR ALL WORK, EXCEPT BY PRIOR APPROVAL OF THE ENGINEER (SEE SPECIAL PROVISIONS).
2. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
3. FOR STAGING INFORMATION, SEE STAGING PLAN.



CONTRACTOR SHALL ACCESS SITE FROM PUBLIC ROAD AT EXISTING DRIVEWAY. CONTRACTOR SHALL FURNISH CONSTRUCTION SIGNS AND CONDUCT HAUL ACTIVITIES IN ACCORDANCE WITH OWNING AGENCY REQUIREMENTS. COST INCIDENTAL TO CONTRACT.

CONTRACTOR'S CONSTRUCTION STORAGE AND PARKING AREA. RESEED AT PROJECT COMPLETION.

PROJECT LIMITS

TEMPORARY BARRICADES, RUNWAY TO BE CLOSED WHEN WORKING WITHIN 125.0' OF THE RUNWAY CENTERLINE

LIGHTED X LIGHT TRAILER TO BE FURNISHED BY AIRPORT OWNER; TO BE LOCATED, RELOCATED, OPERATED AND MAINTAINED (INCLUDING OIL AND FILTER CHANGES) BY CONTRACTOR, COST INCIDENTAL TO CONTRACT.



PROJECT IS LOCATED IN:
SOUTH 1/2 OF SECTION 33,
SCHAUMBURG TOWNSHIP, COOK COUNTY
NORTH 1/2 OF SECTION 4,
BLOOMINGDALE TOWNSHIP, DU PAGE COUNTY

REHABILITATE AIRFIELD LIGHTS
IDA No: 06C-4161
SBG No:3-17-0124-B30
Contract No: SH026

GENERAL NOTES

- PROJECT DESCRIPTION**
- THIS PROJECT IS TO REHABILITATE THE AIRFIELD TAXIWAY LIGHTING AT SCHAUMBURG REGIONAL AIRPORT INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:
- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES.
 - REMOVAL OF EXISTING TAXIWAY LIGHT FIXTURES AND AIRFIELD GUIDANCE SIGNS.
 - INSTALLATION OF NEW AIRFIELD CABLE IN UNIT DUCT.
 - INSTALLATION OF NEW TAXIWAY EDGE LIGHT FIXTURES AND AIRFIELD GUIDANCE SIGNS.
 - PROVISION OF ASSOCIATED ELECTRICAL EQUIPMENT IN AND MODIFICATIONS TO EXISTING ELECTRICAL VAULT.
 - TOPSOILING, SEEDING AND MULCHING OF DISTURBED AREAS.
 - AS ADDITIVE ALTERNATE ITEM NO. 1, PAY ITEM AS800931, "UPGRADE AIRFIELD SIGNS TO LED" SHALL BE TO FURNISH TYPE L-858(L) TAXI GUIDANCE SIGNS WITH LED (LIGHT EMITTING DIODE) ILLUMINATION IN PLACE OF TYPE L-858 TAXI GUIDANCE SIGNS WITH QUARTZ OR INCANDESCENT LAMPS. THE ADDITIVE ALTERNATE UPGRADE, IF SELECTED, WILL BE AWARDED CONCURRENT WITH THE BASE BID AWARD.

PROTECTION OF EXISTING AIRPORT FACILITIES

THE CONTRACTOR IS TO BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES AND LIGHTING EQUIPMENT; DRIVEWAY AND ROAD PAVEMENT AND SHOULDERS; RUNWAY, TAXIWAY AND APRON PAVEMENTS AND SHOULDERS; RUNWAY, TAXIWAY AND AIRPORT LIGHTING EQUIPMENT; AND SEEDED AND TURFED AREAS THAT ARE UTILIZED IN OR AFFECTED BY THE CONTRACTOR'S ACTIVITIES. ITEMS DAMAGED BY THE CONTRACTOR ARE TO BE REPAIRED AT CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE.

IN ADDITION, WHEN CONDITIONS DICTATE OR AS DETERMINED BY THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE, THE CONTRACTOR SHALL BE REQUIRED TO USE A PICK-UP TYPE SWEEPER IN ALL ACTIVE CONSTRUCTION AIRFIELD PAVEMENT AREAS. THE CONTRACTOR WILL BE REQUIRED TO HAVE A SWEEPER AVAILABLE FOR USE AT ALL TIMES. THE COST OF SWEEPING SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

CONTRACTOR'S ACCESS AND TEMPORARY FACILITIES

CONTRACTOR'S ACCESS TO THE PROJECT WHEN ON AIRPORT PROPERTY IS SHOWN ON THIS SHEET. CONTRACTOR'S ACCESS TO THE AIRPORT ITSELF IS TO BE PROVIDED BY PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR IS TO SECURE ALL NECESSARY PERMITS FOR THE USE OF ANY PUBLIC RIGHTS-OF-WAY AND IS TO MAINTAIN TRAFFIC ON THESE PUBLIC ROADS AT ALL TIMES, WITH THE COSTS OF PERMITTING, CLEANING AND REPAIRING OF PAVEMENT DAMAGED BY CONTRACTOR'S ACTIVITIES INCIDENTAL TO THE CONTRACT. USE OF AND REPAIRS TO ANY PUBLIC FACILITIES ARE TO BE COMPLETED TO THE SATISFACTION OF THE FACILITY'S OWNER.

THE CONTRACTOR IS TO PROVIDE TEMPORARY CONSTRUCTION ROADS WITHIN THE CONSTRUCTION LIMIT LINES AS MAY BE REQUIRED BY HIS ACTIVITIES. HEAVY VEHICLES SHALL NOT CROSS EXISTING PAVEMENT SURFACES EXCEPT AS APPROVED BY THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ANY DAMAGE TO PAVEMENTS THAT MAY OCCUR BY THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE.

THE CONTRACTOR IS TO PROVIDE AN EQUIPMENT STORAGE AND PARKING AREA AT THE LOCATIONS SHOWN ON THIS SHEET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE ACCESS ROADS AND THE STORAGE AREA DURING CONSTRUCTION AND TO RESTORE THE AREAS AT PROJECT COMPLETION TO CONDITIONS SUITABLE TO THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. AT THE AIRPORT OWNERS'S DISCRETION, THE TEMPORARY FACILITIES MAY REMAIN, BUT THEY MUST BE LEFT IN CONDITIONS SUITABLE TO THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. THE COST OF PROVIDING, MAINTAINING AND RESTORING THE TEMPORARY FACILITIES IS INCIDENTAL TO THE CONTRACT.

RESPONSIBILITY FOR EXISTING UTILITIES

THE LOCATION, SIZE AND/OR TYPE OF MATERIAL OF EXISTING UNDERGROUND OR OVERHEAD UTILITIES AS MAY BE INDICATED ON THESE CONSTRUCTION PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE AIRPORT OWNER NOR THE PROJECT ENGINEER HAVE INDEPENDENTLY VERIFIED THIS INFORMATION AND NEITHER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, SUFFICIENCY OR COMPLETENESS OF THE INFORMATION AND GIVE NO EXPRESSED OR IMPLIED GUARANTEE THAT ANY CONDITIONS INDICATED ARE REPRESENTATIVE OF ACTUAL CONDITIONS TO BE ENCOUNTERED.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND AGENCIES OF HIS CONSTRUCTION PLANS AND SHALL OBTAIN FROM EACH PARTY DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF ALL UTILITIES AND THE WORKING SCHEDULE OF ANY REMOVALS OR ADJUSTMENTS REQUIRED OF THE UTILITY. THE CONTRACTOR SHALL CONTACT JULIE (PHONE 800-892-0123) TO ASSIST IN THE ABOVE.

THE CONTRACTOR SHALL PROTECT ANY FACILITIES TO THE SATISFACTION OF THE UTILITY OR OWNING-AGENCY WITH THE COST OF ANY REQUIRED PROTECTION TO BE INCIDENTAL TO THE CONTRACT. IN THE EVENT A UTILITY LINE OR SERVICE IS UNEXPECTEDLY ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE AND THE UTILITY COMPANY OR AGENCY OF JURISDICTION. ANY SUCH UTILITIES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO SERVICE AT ONCE.

EXISTING BENCHMARKS

PROJECT BENCHMARKS ARE AS FOLLOWS:

MF1778
 N 1938845.83
 E 1046571.08
 ELEV. 793.26

OBJECT INFORMATION

ITEM NO.	DESCRIPTION	MOBILITY	GROUND ELEVATION	OBJECT ELEVATION	LATITUDE	LONGITUDE	RUNWAY 11-29 STATION	RUNWAY 11-29 OFFSET	RUNWAY 11-29 EXIS. EL.
1	CONTRACTOR'S STAGING AREA	MOVING	800.0	825.0	41°59'29.7787" N	88°06'26.4166" W	100+84.92	363.5	801.0
2	CONSTRUCTION EQUIPMENT	MOVING	800.5	825.5	41°59'27.6728" N	88°06'28.1054" W	100+17.50	125.0	801.0
3	CONSTRUCTION EQUIPMENT	MOVING	800.5	825.5	41°59'25.0701" N	88°06'15.1884" W	110+27.88	125.0	801.0
4	CONSTRUCTION EQUIPMENT	MOVING	800.5	825.5	41°59'22.8967" N	88°06'04.4258" W	118+69.88	125.0	801.0
5	CONSTRUCTION EQUIPMENT	MOVING	800.5	825.5	41°59'20.9045" N	88°05'54.5624" W	126+41.54	125.0	801.0
6	CONSTRUCTION EQUIPMENT	MOVING	800.5	825.5	41°59'17.9585" N	88°05'39.9790" W	137+82.50	125.0	801.0

RUNWAY END COORDINATES

DESCRIPTION	LATITUDE	LONGITUDE	RUNWAY STATION
RUNWAY 11 END	41°59'26.5310" N	88°06'28.7600" W	100+00
RUNWAY 29 END	41°59'16.7240" N	88°05'40.1880" W	138+00

NOTES

1. WORK MUST BE CONTROLLED.
2. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT SHALL BE LIMITED TO A HEIGHT OF 25 FEET, EXCEPT BY PRIOR APPROVAL OF THE ENGINEER (SEE SPECIAL PROVISIONS).
3. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
4. NO CLOSURES TO TAXIWAY, APRON, ROADWAY, AND AUTO PARKING SHALL BE CONDUCTED EXCEPT AS SHOWN IN THE SITE PLAN.



STAGE 1

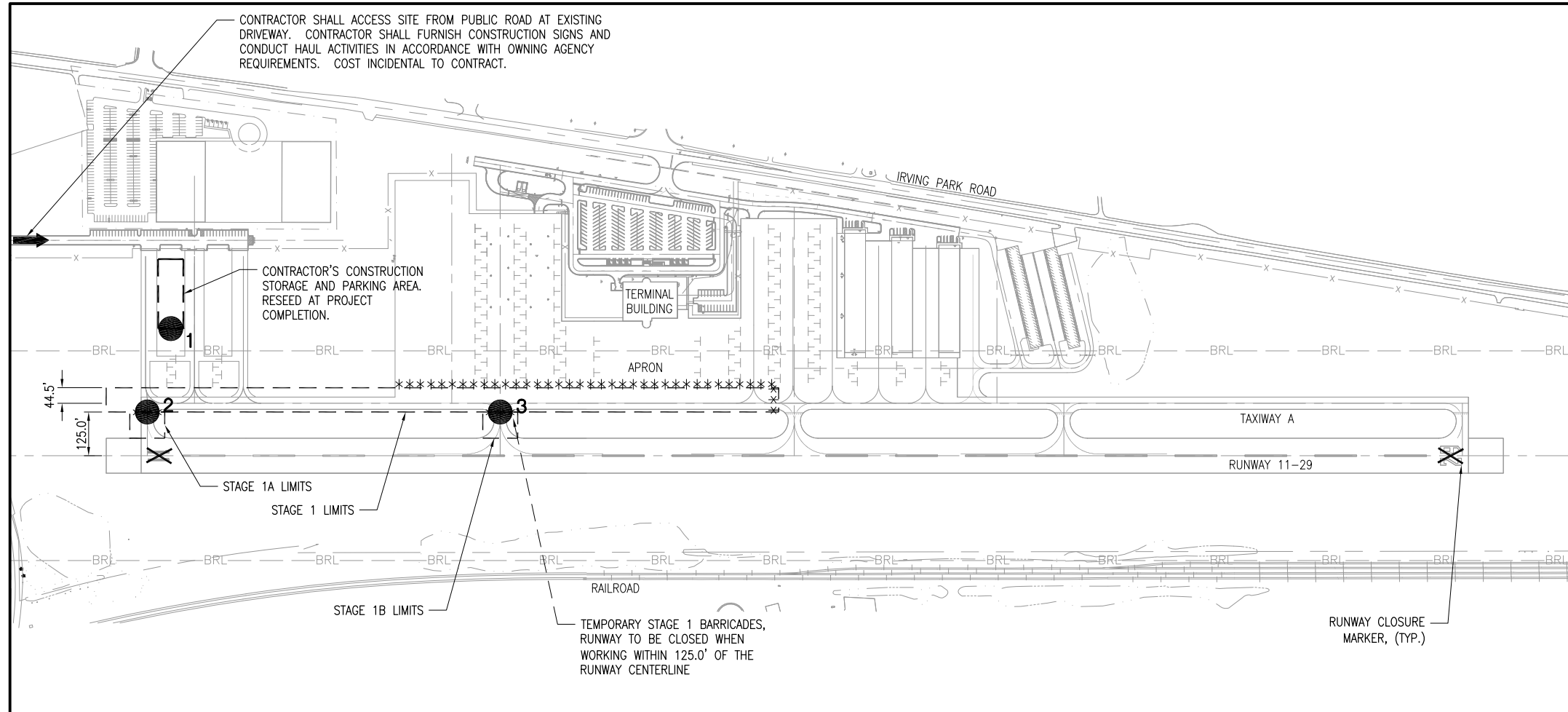
NOTES:

- ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 18 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER.
- OPERATIONS ON RUNWAY 11-29 SHALL ONLY BE AFFECTED WHILE WORKING WITHIN 125 FEET OF THE RUNWAY CENTERLINE, THIS INCLUDES ALL WORK WITHIN STAGE 1A AND 1B LIMITS.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 1:

- INSTALL EROSION CONTROL MEASURES FOR ENTIRE PROJECT AREA.
- REMOVAL OF EXISTING TAXIWAY LIGHTS AND GUIDANCE SIGNS WITHIN STAGE 1 LIMITS.
- INSTALLATION OF NEW TAXIWAY LIGHTS AND GUIDANCE SIGNS WITHIN STAGE 1 LIMITS.
- INSTALLATION OF NEW AIRFIELD CABLE IN UNIT DUCT WITHIN STAGE 1 LIMITS.
- PROVISION OF ASSOCIATED VAULT WORK.
- TOPSOILING, SEEDING AND MULCHING WITHIN STAGE 1 LIMITS

SPECIAL CONSIDERATIONS FOR SUB-STAGES 1A AND 1B AND SUB-STAGES 2A, 2B AND 2C - WORK IN SUB-STAGES 1A AND 1B AND SUB-STAGES 2A, 2B AND 2C, AS SHOWN IN THE STAGING PLAN, SHALL BE LIMITED TO A FOUR HOUR TIME FRAME WITHIN EIGHT (8) SEPARATE WORK DAYS (THREE (3) DAYS FOR SUB-STAGES 1A AND 1B, AND FIVE (5) DAYS FOR SUB-STAGES 2A, 2B AND 2C). EACH CONSECUTIVE 4-HOUR PERIOD WILL BE COORDINATED WITH AND PRIOR APPROVED BY THE AIRPORT OWNER, 48 HOURS IN ADVANCE OF EACH INTENDED CLOSURE. TO FURTHER EXPEDITE THE WORK WITHIN SUB-STAGES 1A AND 1B AND SUB-STAGES 2A, 2B AND 2C, THE CONTRACTOR SHALL MAKE USE OF PRE-CAST SIGN BASES AND SPLICE CANS FOR ALL LOCATIONS WITHIN THESE SUB-STAGE LIMITS, AND SHALL PRE-ASSEMBLE EACH REPLACEMENT EDGE LIGHT FIXTURE TO THE EXTENT PRACTICABLE WITHIN THESE LIMITS, WITH SUCH PRE-WORK PERFORMED OTHER THAN DURING THE RUNWAY CLOSURE PERIOD. LANDSCAPING/RESTORATION SHALL BE PERFORMED CONCURRENT WITH THE WORK INSIDE THE SUB-STAGE LIMITS. THE COSTS FOR THESE PRE-PREPARATIONS AND SCHEDULING REQUIREMENTS SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT COST. SEE SPECIAL PROVISIONS SECTION 80-09 FOR ADDITIONAL REQUIREMENTS FOR COMPLETING THE SUB-STAGES.



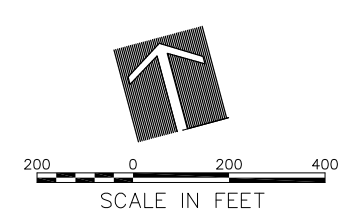
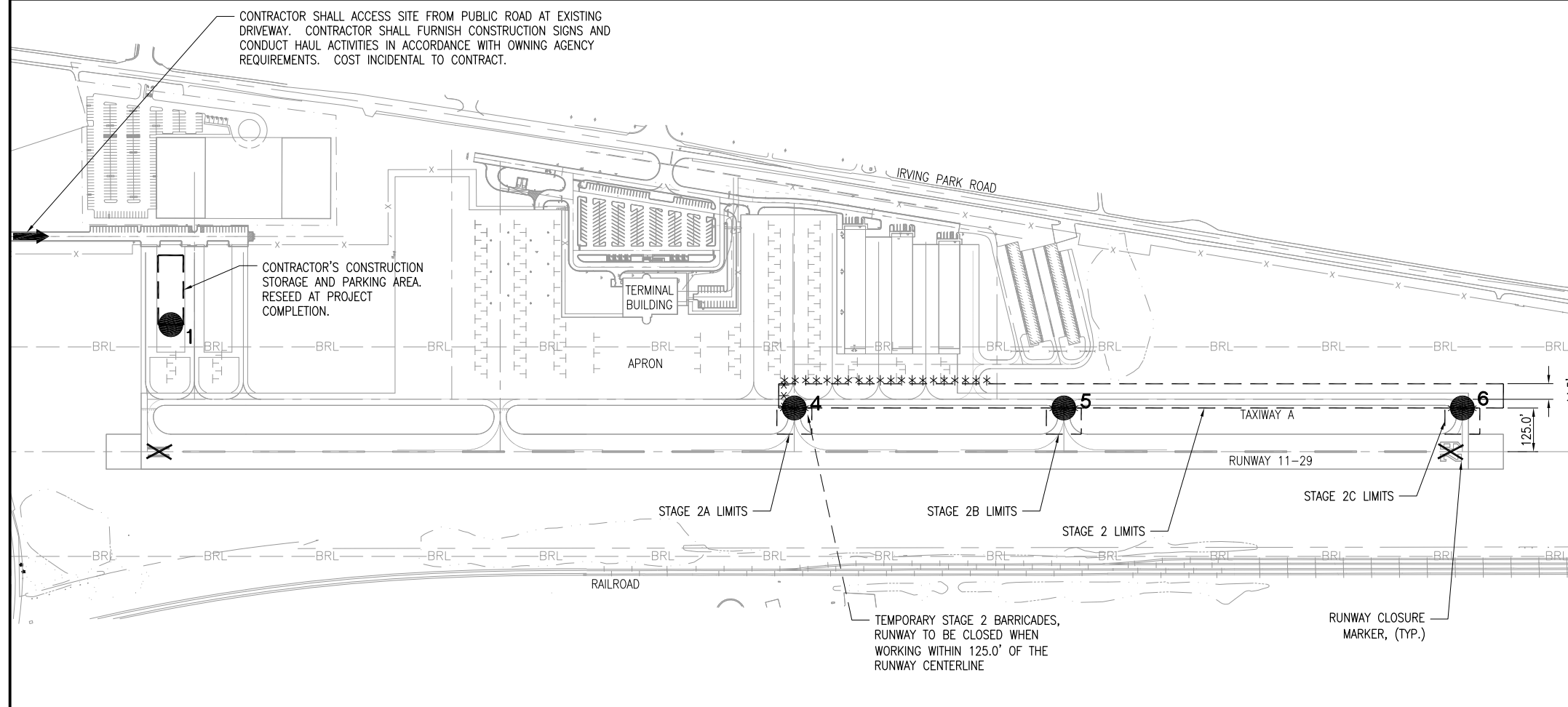
STAGE 2

NOTES:

- ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 18 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER.
- OPERATIONS ON RUNWAY 11-29 SHALL ONLY BE AFFECTED WHILE WORKING WITHIN 125 FEET OF THE RUNWAY CENTERLINE, THIS INCLUDES ALL WORK WITHIN STAGE 2A, 2B AND 2C LIMITS.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 2:

- REMOVAL OF EXISTING TAXIWAY LIGHTS AND GUIDANCE SIGNS WITHIN STAGE 2 LIMITS.
- INSTALLATION OF NEW TAXIWAY LIGHTS AND GUIDANCE SIGNS WITHIN STAGE 2 LIMITS.
- INSTALLATION OF NEW AIRFIELD CABLE IN UNIT DUCT WITHIN STAGE 2 LIMITS.
- PROVISION OF ASSOCIATED VAULT WORK.
- TOPSOILING, SEEDING AND MULCHING WITHIN STAGE 2 LIMITS



REHABILITATE AIRFIELD LIGHTS

IDA No: 06C-4161
SBG No:3-17-0124-B30

Contract No: SH026

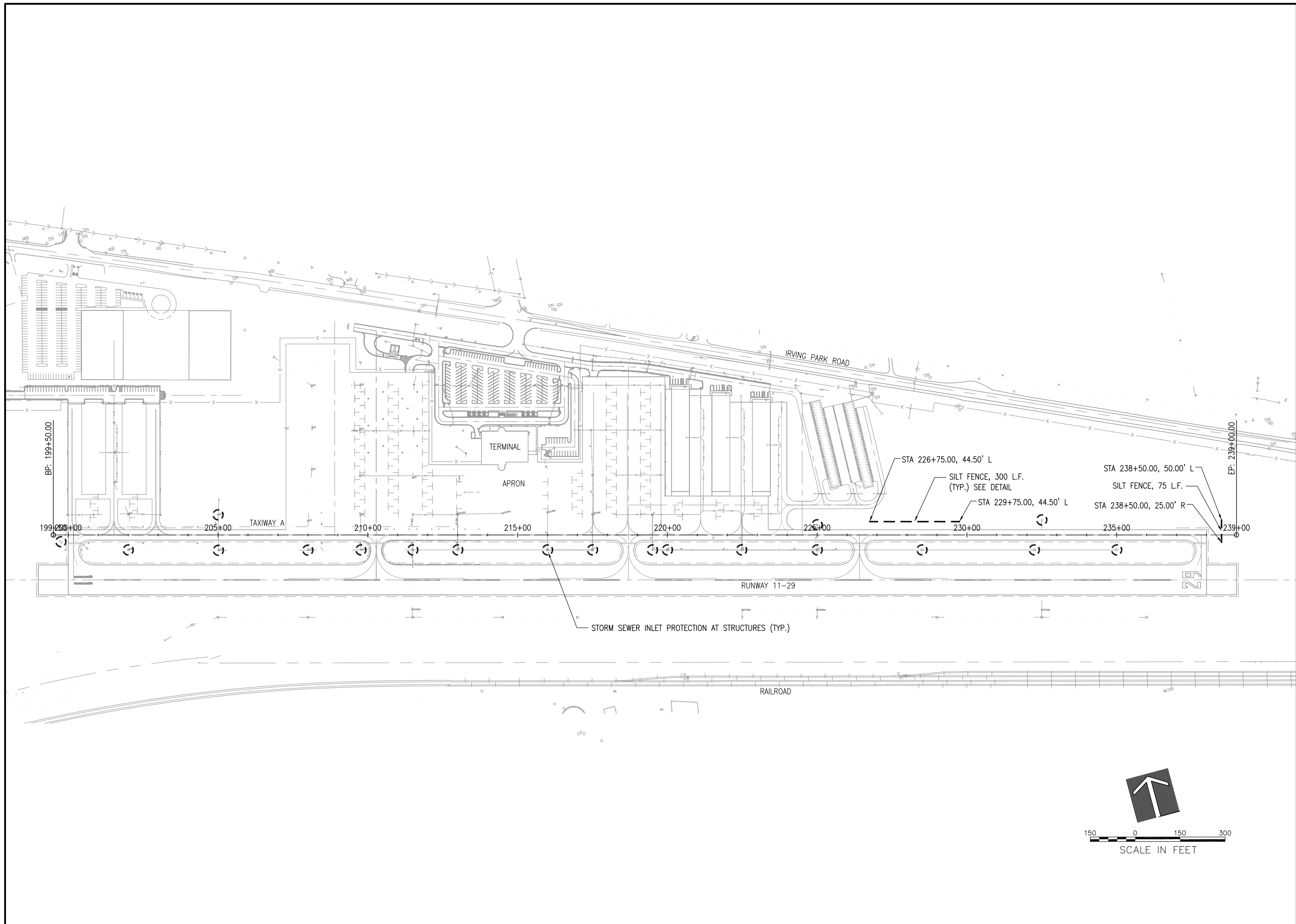
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		LAY	DWN	REV

ISSUE: November 15, 2013
PROJECT NO: 12A0156
CAD FILE: 05-STAGINGPLAN.DWG
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DRAWN BY: LDH 8/26/13
REVIEWED BY: RMH 11/14/13
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CONSTRUCTION STAGING PLAN STAGE 1 AND 2



Schaumburg Regional Airport
905 Irving Park Road
Schaumburg, IL 60193
Phone: 847-923-3863



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REHABILITATE AIRFIELD LIGHTS

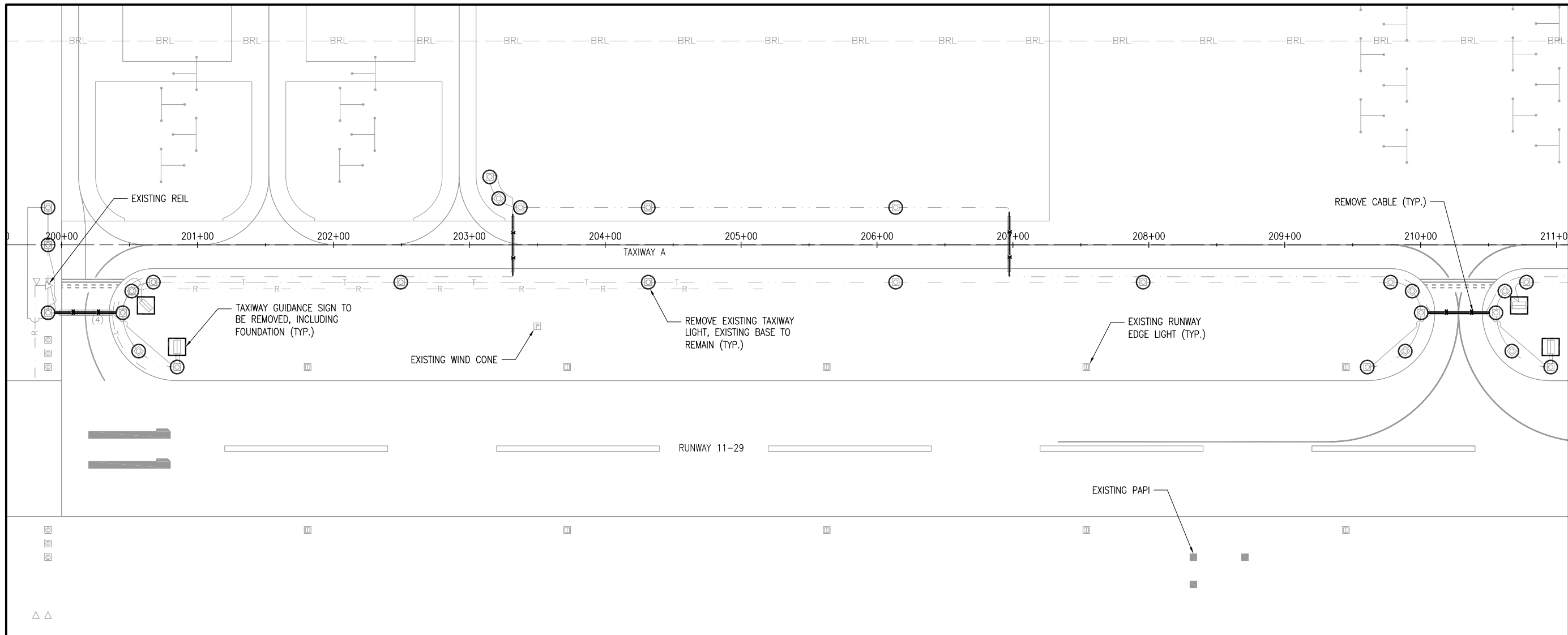
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SBG No:3-17-0124-B30

Contract No: SH026

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STORM WATER POLLUTION PREVENTION PLAN



AIRFIELD LIGHTING REMOVAL NOTES

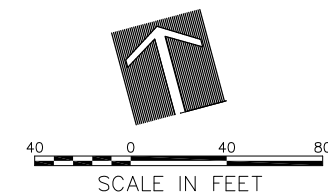
1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
4. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
5. THE EXISTING AIRFIELD (TAXIWAY) LIGHTS AND THEIR ISOLATING TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT. REMOVAL OF THE EXISTING AIRFIELD LIGHTS WILL BE PAID FOR UNDER ITEM AR800930 REMOVE BASE MOUNTED LIGHT - LIGHT ONLY PER EACH.
6. THE EXISTING TAXI GUIDANCE SIGNS AND THEIR ISOLATED TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT. THE CONCRETE FOUNDATIONS SHALL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE IN A LEGAL MANNER. REMOVAL OF THE EXISTING TAXI GUIDANCE SIGNS WILL BE PAID FOR UNDER ITEM AR125904.
7. THE EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
8. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 218, c.
9. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, SIGN, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
10. WHEN A RESPECTIVE RUNWAY IS CLOSED THE NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
11. CONTRACTOR SHALL CONFIRM QUANTITY OF LIGHTS TO BE REMOVED WITH RESIDENT ENGINEER/ RESIDENT PROJECT REPRESENTATIVE PRIOR TO REMOVAL.
12. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT SHALL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH THE ABOVE NOTE 1.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE AIRPORT OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. CONTACT AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.

LEGEND:

- PROPOSED TAXI GUIDANCE SIGN REMOVAL
- PROPOSED CABLE REMOVAL
- PROPOSED LIGHT REMOVAL



REHABILITATE AIRFIELD LIGHTS

IDA No: 06C-4161
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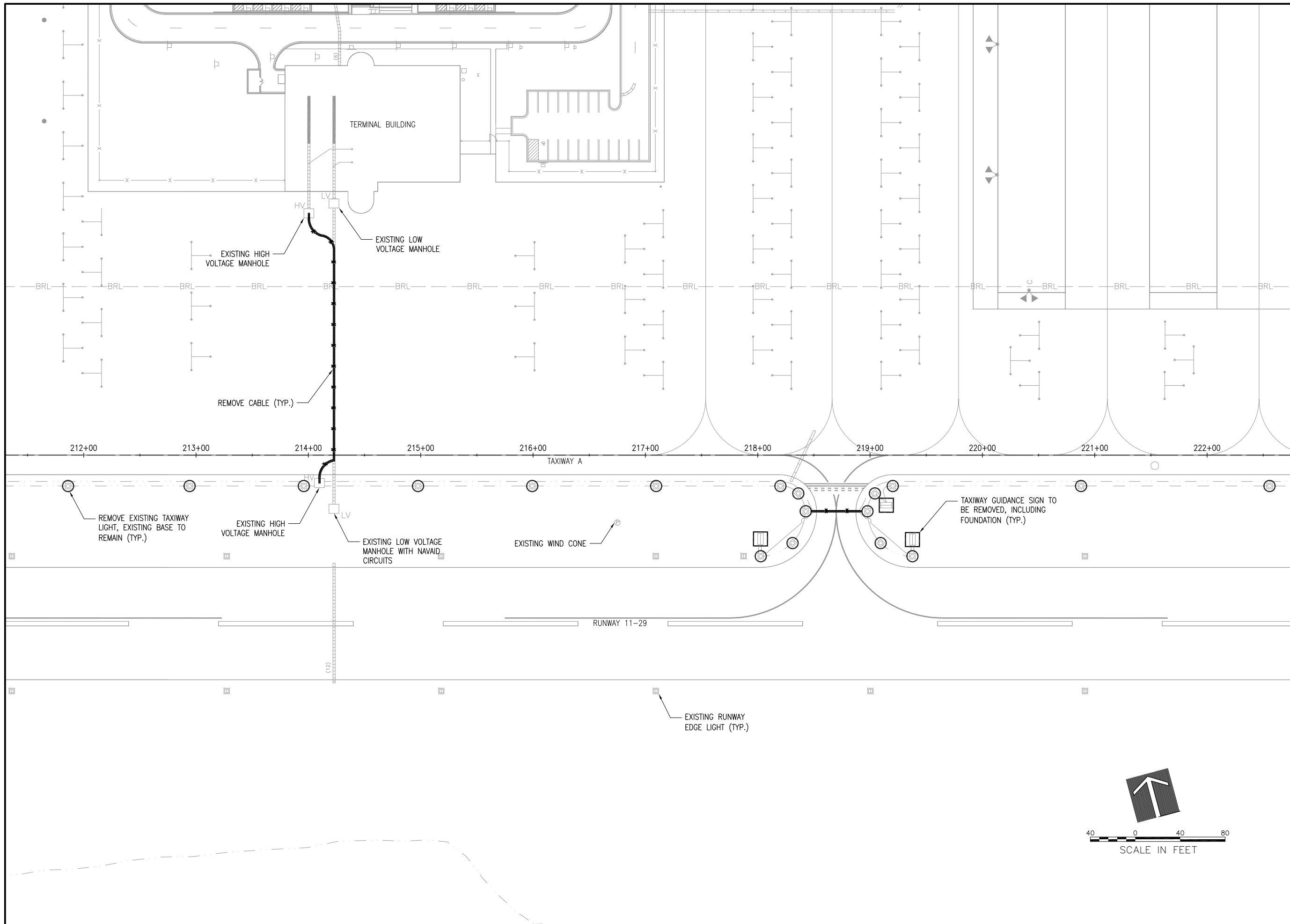
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REMOVAL PLAN

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**REHABILITATE
AIRFIELD LIGHTS**

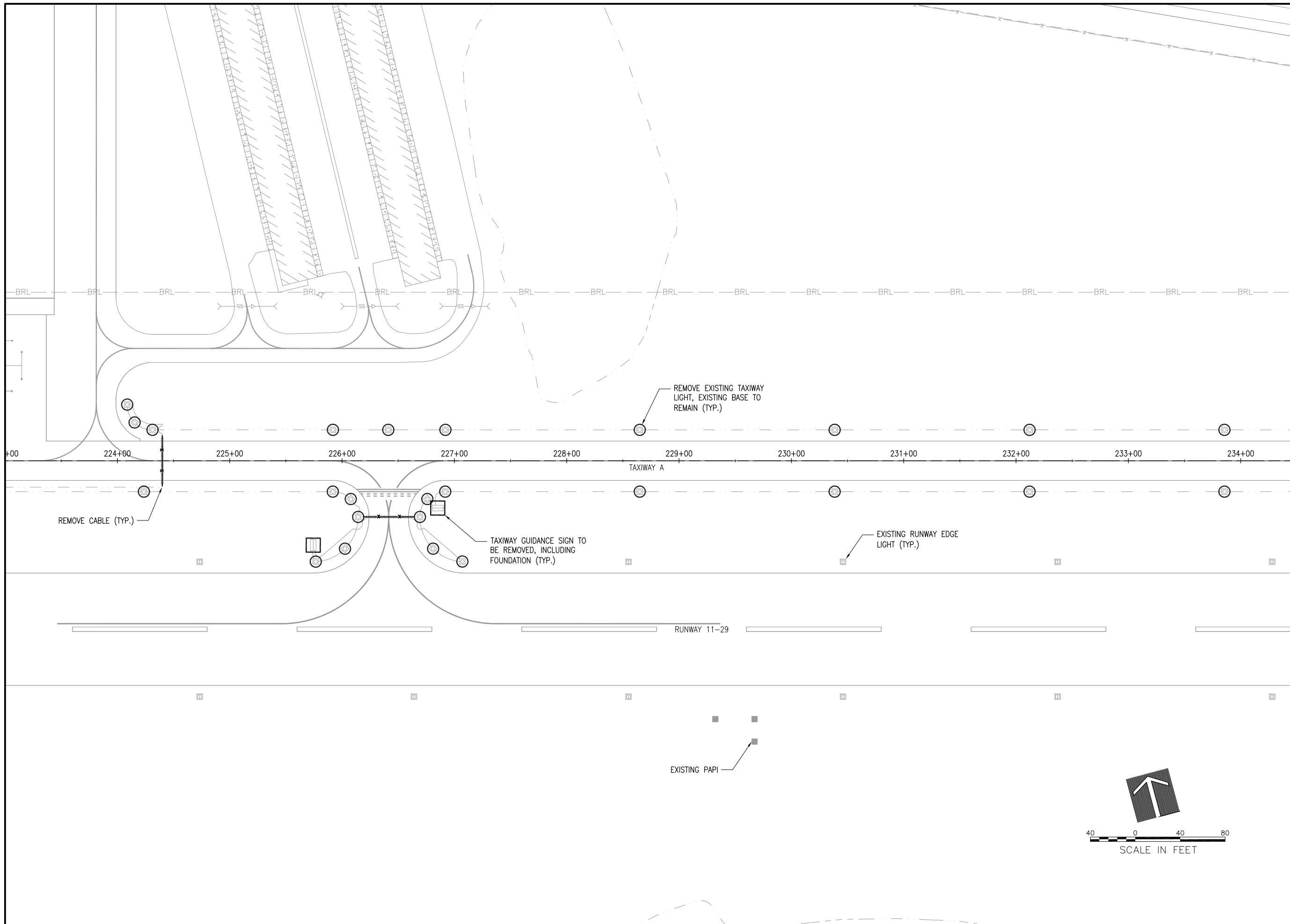
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Contract No: SH026

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REMOVAL PLAN



REHABILITATE AIRFIELD LIGHTS

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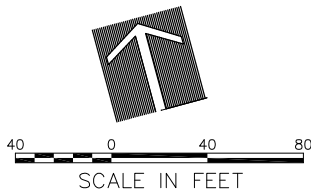
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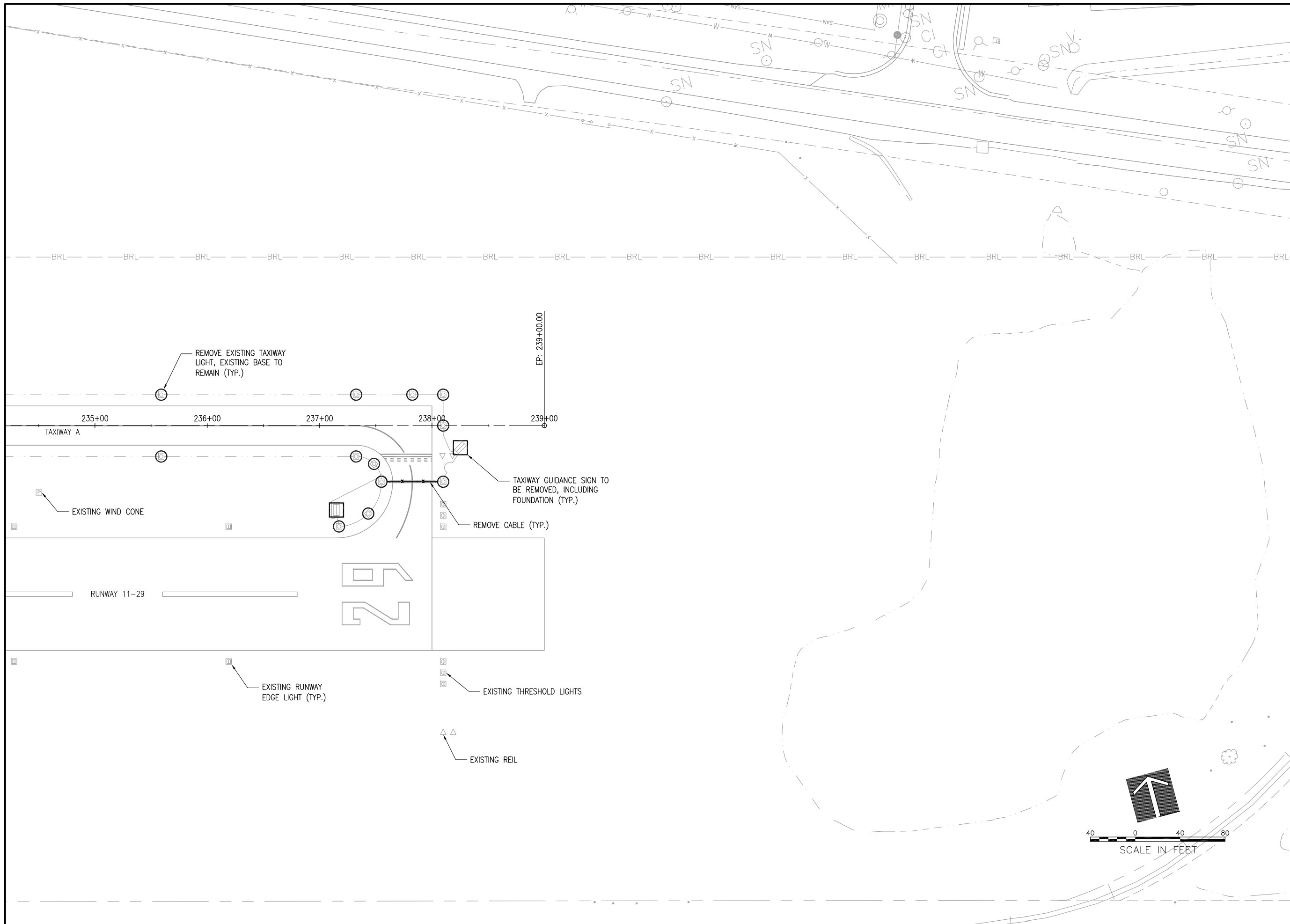
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CAD FILE: 09-REMOVALPLAN.DWG
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REMOVAL PLAN



NOV 12, 2013 2:31 PM HALUSM00682
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REHABILITATE
AIRFIELD LIGHTS

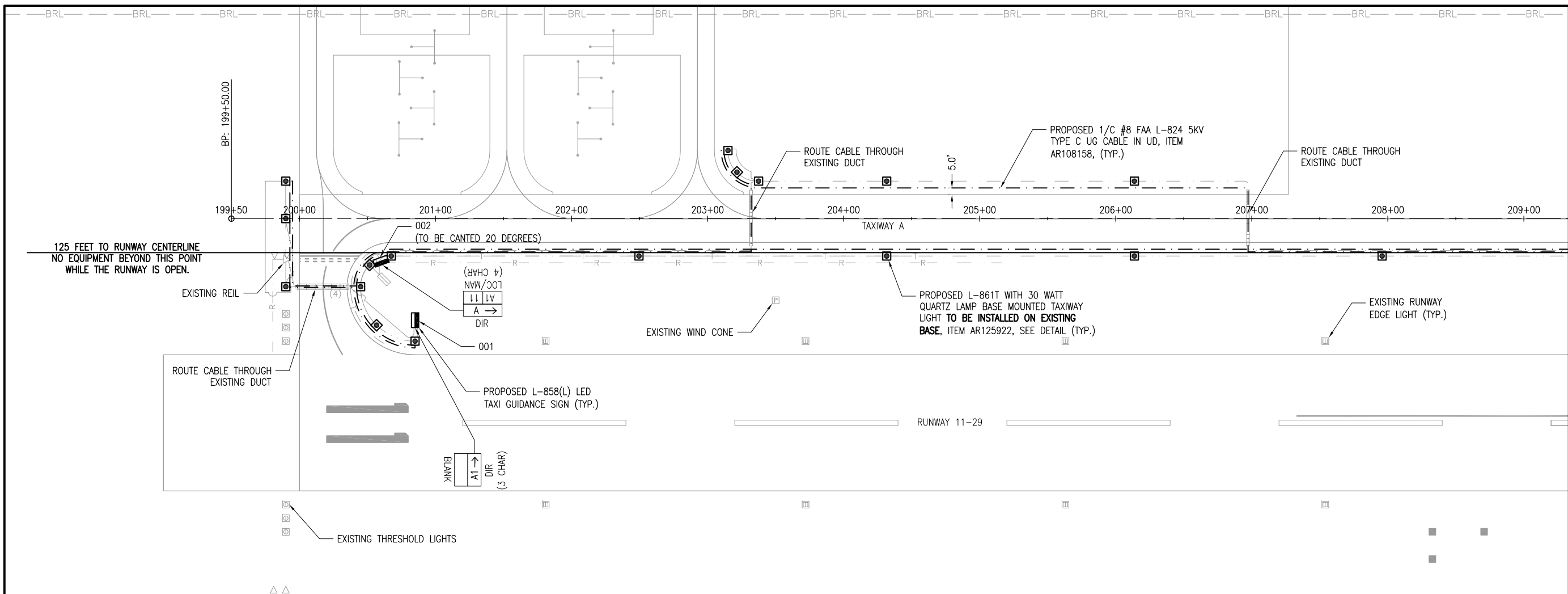
IDA No: 06C-4161
SBG No:3-17-0124-B30

Contract No: SH026

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

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PROJECT NO: 12A0156
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REMOVAL PLAN



AIRFIELD LIGHTING NOTES

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
- PROPOSED TAXIWAY LIGHTS SHALL BE PLACED ON THE EXISTING LIGHT BASE CANS AS DETAILED HEREIN. PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 20' FROM THE RESPECTIVE TAXIWAY EDGE, UNLESS SHOWN OTHERWISE.
- PROPOSED TAXIWAY LIGHTS, GUIDANCE SIGNS, OTHER AIRFIELD LIGHTING, AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
- PROPOSED CABLE FOR RUNWAY AND TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 5' FROM THE RESPECTIVE TAXIWAY EDGE OR PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
- THE PROPOSED TAXIWAY LIGHTING CABLE SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT, OR DUCT.
- IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- ALL PROPOSED TAXIWAY LIGHTS WILL BE FITTED WITH 360° BLUE LENSES.
- ALL PROPOSED TAXIWAY LIGHTS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
- SEE "TAXI GUIDANCE SIGN SCHEDULE" AND/OR RESPECTIVE TAXI SIGN DETAILS FOR INFO ON SIGN LEGENDS.
- THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2F, PARAGRAPH C. ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
- EXISTING AIRFIELD LIGHTING CABLES IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE, UNLESS DETAILED OTHERWISE TO REMOVE.
- THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE AIRPORT OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

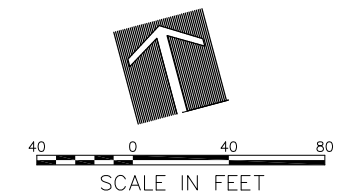
ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. CONTACT AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.

PROPOSED LEGEND

- L-858(L) AIRFIELD SIGN SIZE 1, STYLE 2, CLASS 2 WITH L-830 ISOLATION TRANSFORMER
- L-861T BASE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL; BLUE
- SERIES CIRCUIT LIGHTING CABLES; 1/C #8 AWG, FAA L-824, 5000 VOLT, TYPE C UG CABLE IN UNIT DUCT

EXISTING LEGEND

- ELECTRICAL
- TELEPHONE
- GAS



NOTE:

SOME UTILITIES HAVE BEEN OMITTED FOR CLARITY.

LOC = LOCATION SIGN FACE, YELLOW ON BLACK
MAN = MANDATORY SIGN FACE, WHITE ON RED
DIR = DIRECTION SIGN FACE, BLACK ON YELLOW

NOTE: LOC LETTER IS ALWAYS THE FIRST CHARACTER ON THE SIGN FACE

REHABILITATE AIRFIELD LIGHTS

IDA No: 06C-4161
SBG No:3-17-0124-B30

Contract No: SH026

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: November 15, 2013

PROJECT NO: 12A0156

CAD FILE: 11-ELECPLAN.DWG

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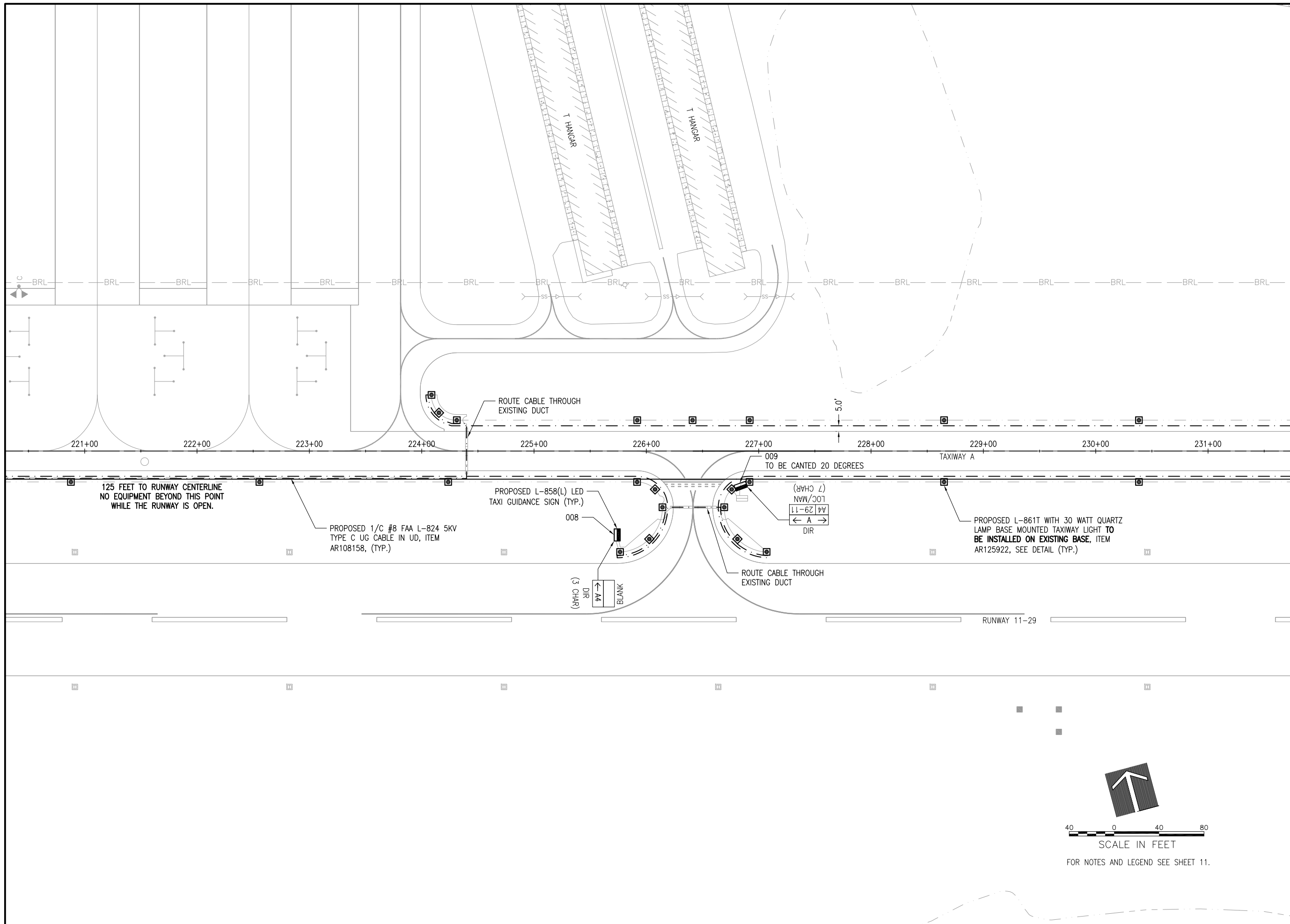
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LIGHTING AND SIGNAGE PLAN

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REHABILITATE
AIRFIELD LIGHTS

IDA No: 06C-4161
SBG No:3-17-0124-B30

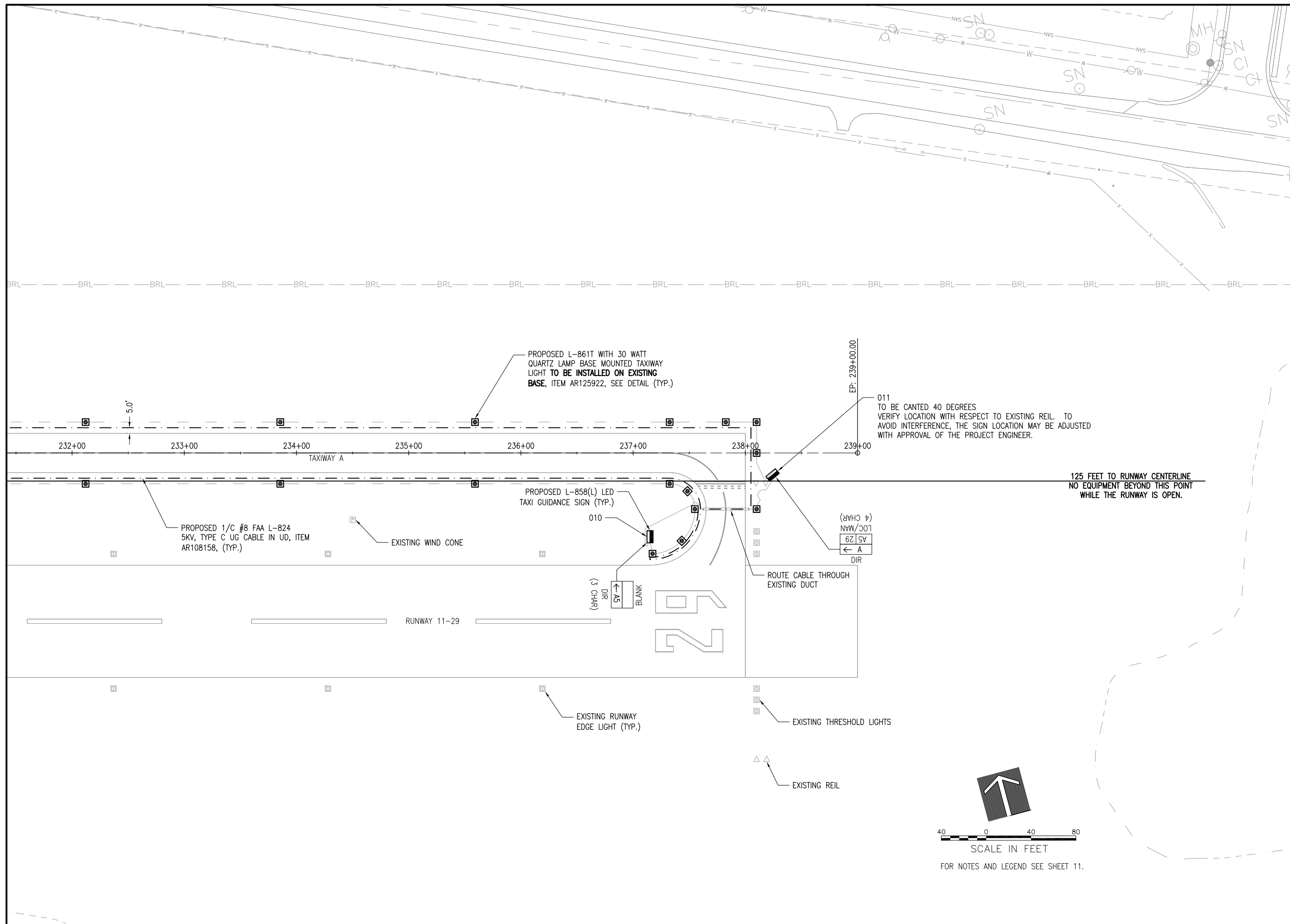
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LIGHTING AND
SIGNAGE PLAN

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REHABILITATE
AIRFIELD LIGHTS

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SBG No:3-17-0124-B30

Contract No: SH026

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LIGHTING AND
SIGNAGE PLAN

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NO.	TAG ID	DESCRIPTION	TYPE	DIRECTION	SIDE A	SIDE B	STATION	OFFSET	NO.
001	14-1-001	Sign	L-858Y (L), Blank	Double Face	A1 →	Blank	200+85.00	80.00 RT	001
002	14-1-002	Sign	L-858L/R (L), L-858Y (L)	Double Face	A1 11	A →	200+54.93	33.10 RT	002
003	14-1-003	Sign	L-858Y (L), Blank	Double Face	A2 →	Blank	210+95.38	80.00 RT	003
004	14-1-004	Sign	L-858L/R (L), L-858Y (L)	Double Face	A2 29-11	← A →	210+65.31	33.10 RT	004
005	14-1-005	Sign	L-858Y (L), Blank	Double Face	← A3	Blank	218+02.38	80.00 RT	005
006	14-1-006	Sign	L-858Y (L), Blank	Double Face	A3 →	Blank	219+37.38	80.00 RT	006
007	14-1-007	Sign	L-858L/R (L), L-858Y (L)	Double Face	A3 29-11	← A →	219+07.31	33.10 RT	007
008	14-1-008	Sign	L-858Y (L), Blank	Double Face	← A4	Blank	225+74.04	80.00 RT	008
009	14-1-009	Sign	L-858L/R (L), L-858Y (L)	Double Face	A4 29-11	← A →	226+78.97	33.10 RT	009
010	14-1-010	Sign	L-858Y (L), Blank	Double Face	← A5	Blank	237+15.00	80.00 RT	010
011	14-1-011	Sign	L-858L/R (L), L-858Y (L)	Double Face	A5 29	← A	238+20.00	23.10 RT	011

NOTE: SIGNS ARE LOCATED TO THE MIDDLE OF THE FACE CLOSEST TO THE CENTERLINE.

TAXI GUIDANCE SIGN LEGEND

- TYPE L-858L OR L-858L(L) LOCATION SIGN - YELLOW LEGEND AND BORDER ON A BLACK BACKGROUND
- TYPE L-858R OR L-858R(L) MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
- TYPE L-858Y OR L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGN - BLACK LEGEND ON A YELLOW BACKGROUND
- BLANK - BLACK BACKGROUND

TAXI GUIDANCE SIGN NOTES

1. THE PROPOSED LIGHTED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345 44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858Y OR L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R OR L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L OR L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).
2. THE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 2, POWERED FROM A 4.8 TO 6.6 AMP SERIES LIGHTING CIRCUIT; CLASS 2, FOR OPERATION FROM -40 DEGREES F TO 131 DEGREES F; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED, DOUBLE-SIDED, AS SPECIFIED ON THE PLANS.
3. WHERE TAXI GUIDANCE SIGNS HAVE LED (LIGHT EMITTING DIODE) TYPE ILLUMINATION THEY SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF FAA ENGINEERING BRIEF NO. 67D LIGHT SOURCES OTHER THAN INCANDESCENT AND XENON FOR AIRPORT AND OBSTRUCTION LIGHTING FIXTURES.
4. THE PROPOSED TAXI GUIDANCE SIGNS WILL BE PAID FRO UNDER THE FOLLOWING ITEMS:
 AR125443 TAXI GUIDANCE SIGN, 3 CHARACTER -- PER EACH
 AR125444 TAXI GUIDANCE SIGN, 4 CHARACTER -- PER EACH
 AR125447 TAXI GUIDANCE SIGN, 7 CHARACTER -- PER EACH
 AND ADDITIVE ALTERNATE FOR UPGRADE TO LED TYPE ILLUMINATION:
 AS800931 UPGRADE AIRFIELD SIGNS TO LED -- PER LUMP SUM
 ITEM AS800931 SHALL BE THE TOTAL ADDITIONAL COST TO UPGRADE ALL OF THE TAXI GUIDANCE SIGNS TO TYPE L-858(L) WITH LIGHT EMITTING DIODE (LED) TYPE ILLUMINATION.

REHABILITATE AIRFIELD LIGHTS

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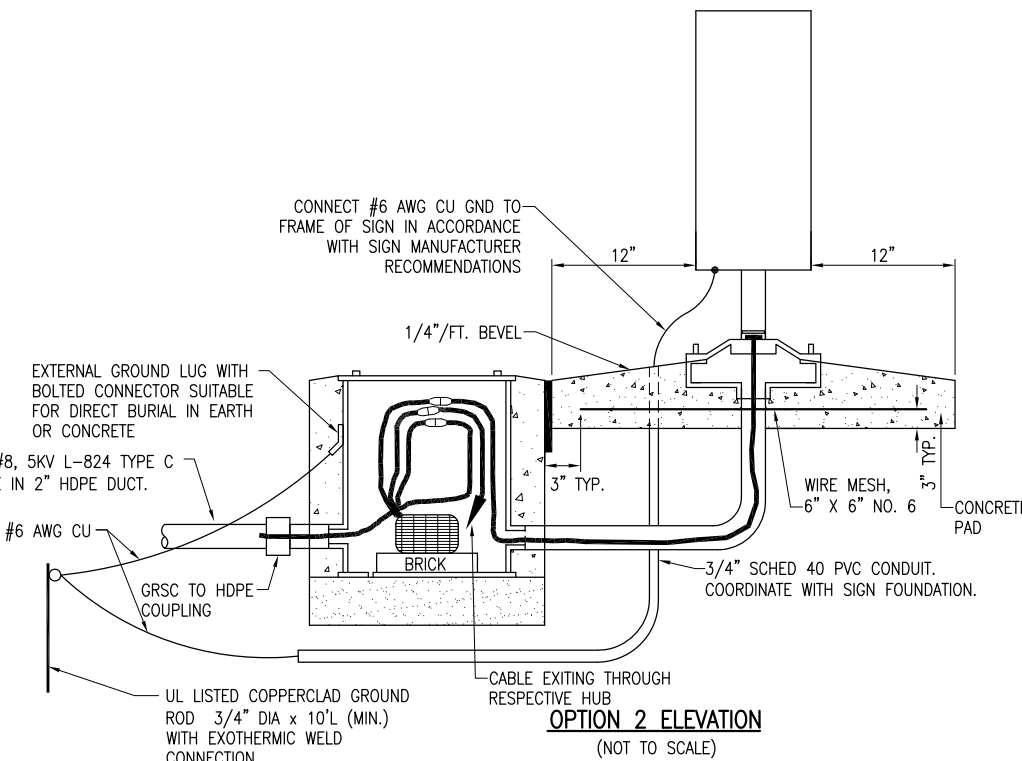
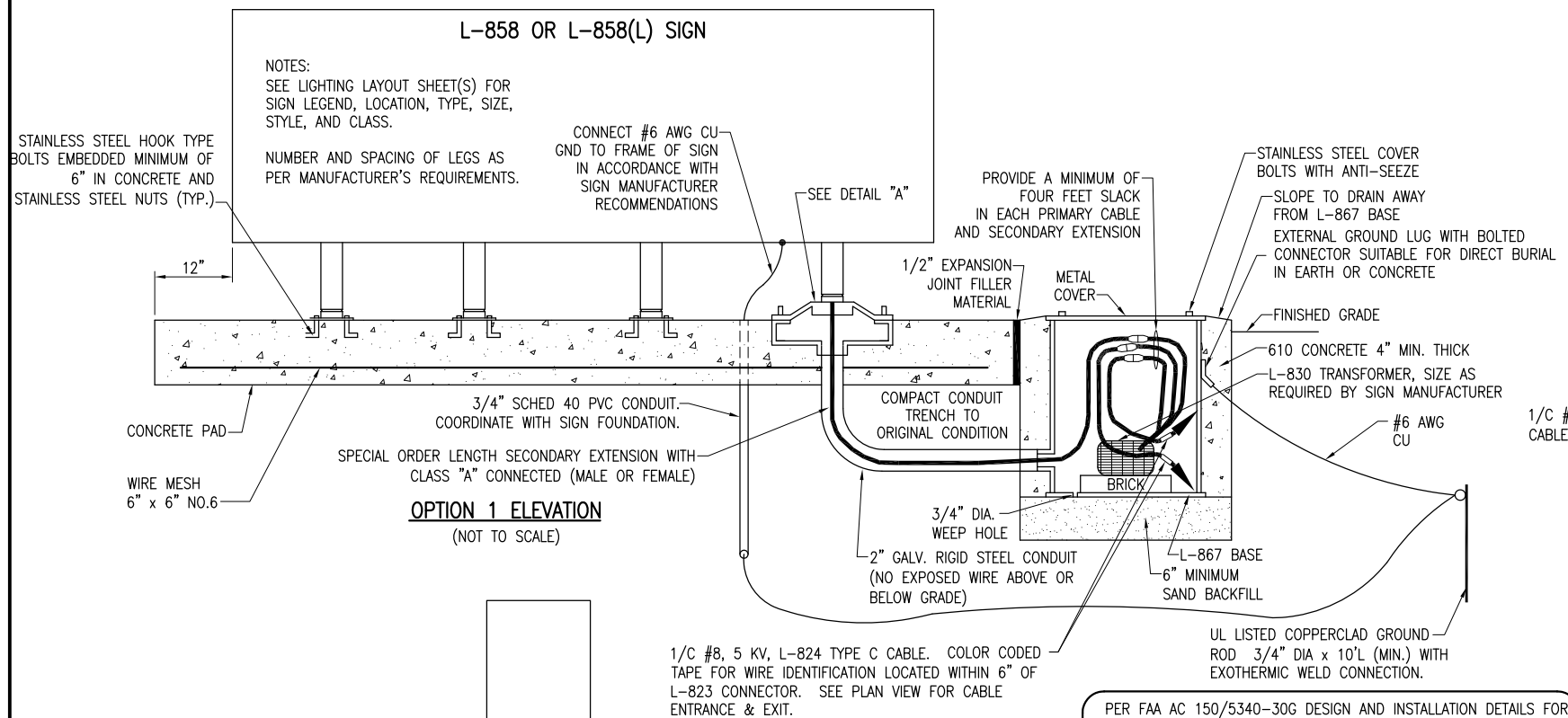
Contract No: SH026

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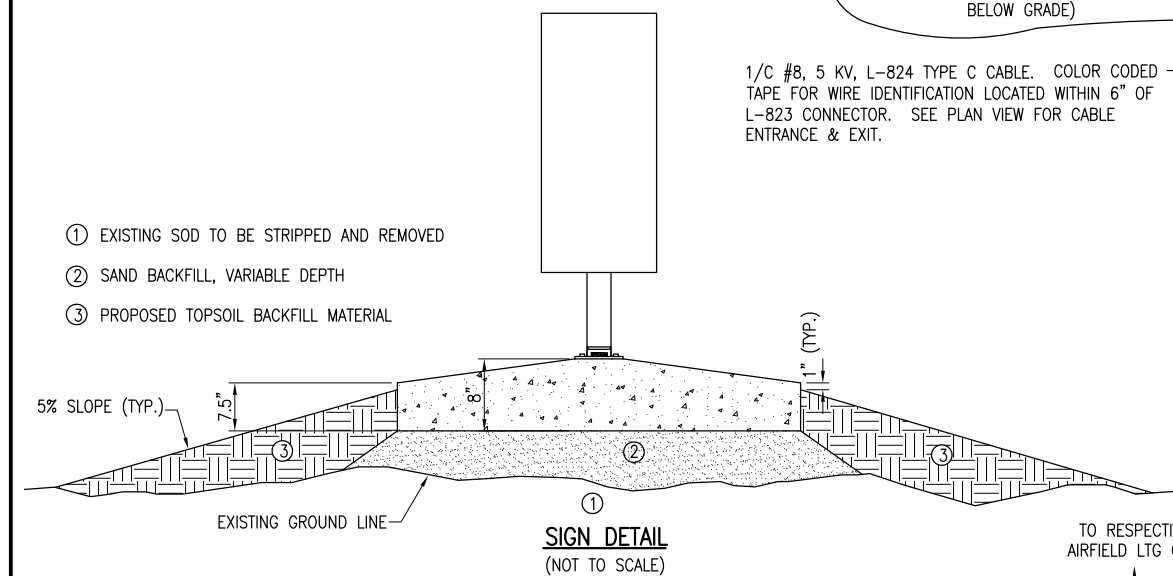
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SIGN SCHEDULE

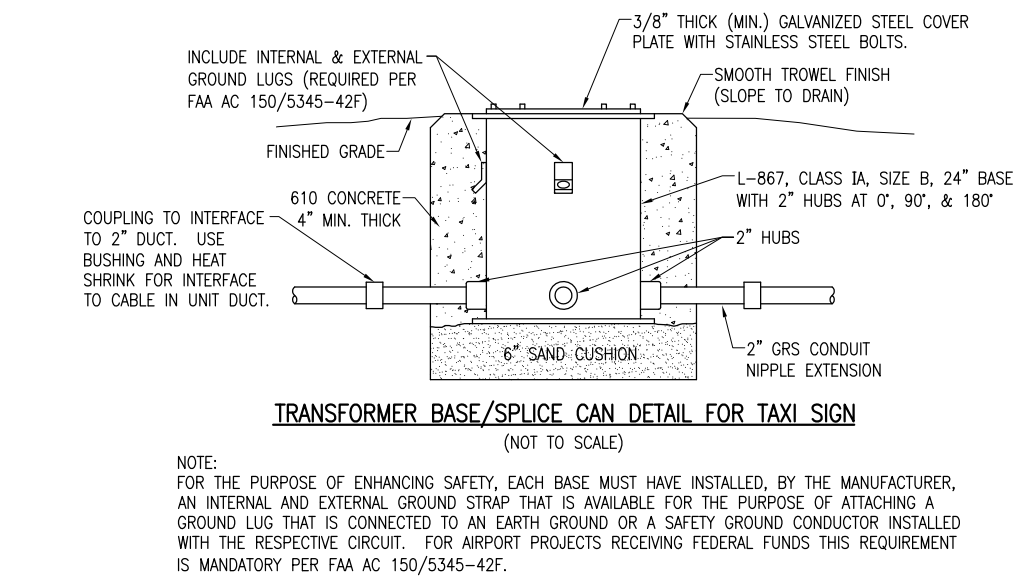
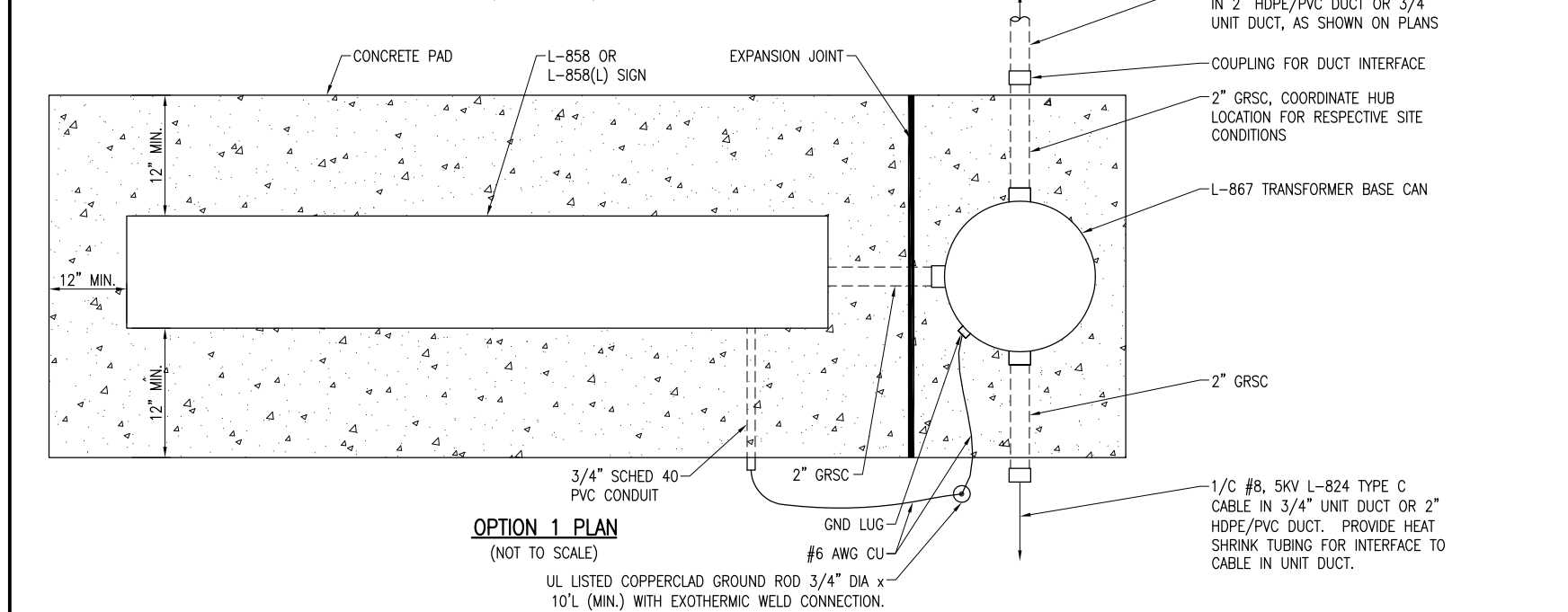
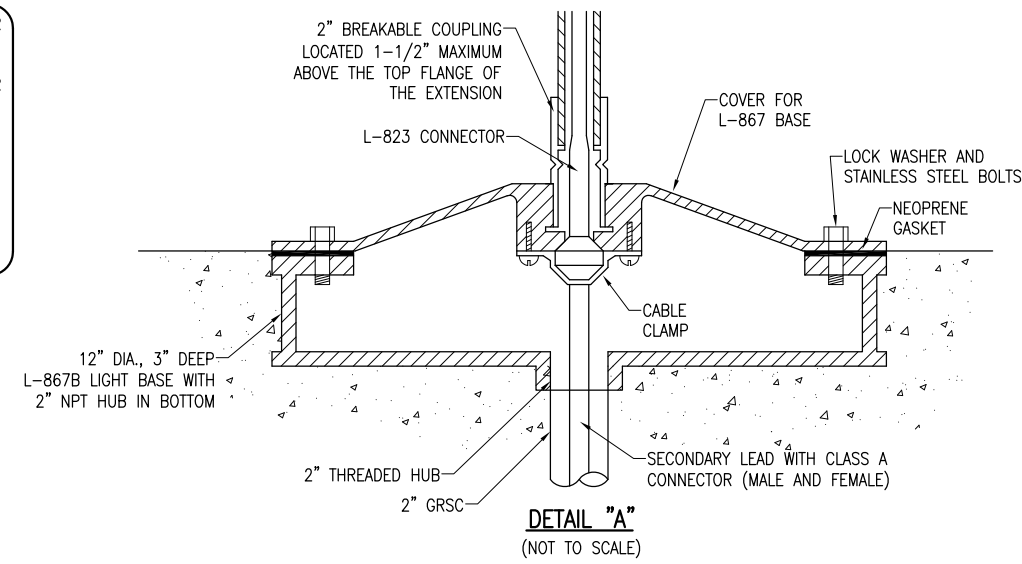


- ① EXISTING SOD TO BE STRIPPED AND REMOVED
- ② SAND BACKFILL, VARIABLE DEPTH
- ③ PROPOSED TOPSOIL BACKFILL MATERIAL



PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN, TAXI SIGN FRAME, OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. ALSO BOND THE SIGN FRAME TO THE GROUND ROD WITH A #6 AWG BARE COPPER CONDUCTOR.

- GENERAL NOTES**
- SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
 - SEE ELECTRICAL NOTES SHEETS.



NOTE: FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42F.

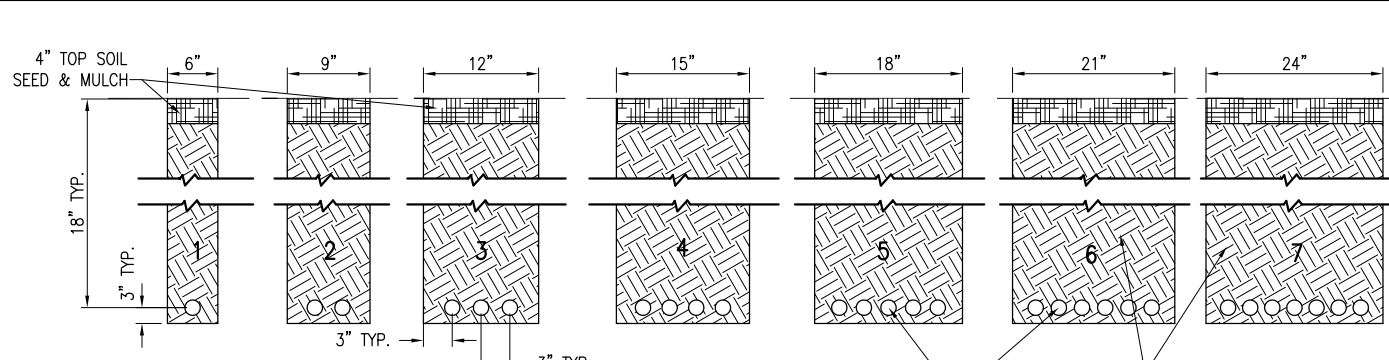
REHABILITATE AIRFIELD LIGHTS
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TAXI GUIDANCE SIGN DETAILS

NOV 12 2013 4:56 PM HAU15M00682
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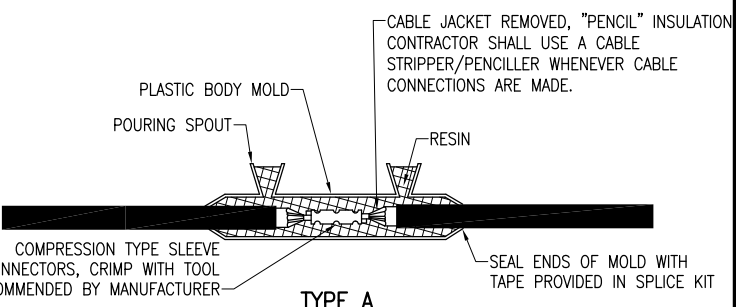
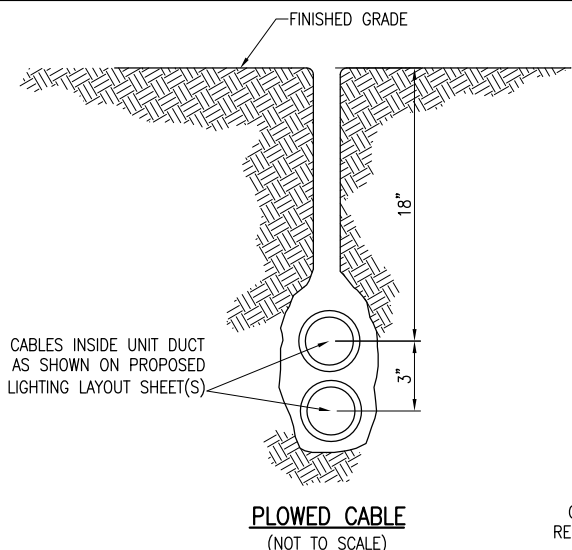


NOTES:
DETAIL NUMBERS INDICATE NO. OF CABLES.

TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.

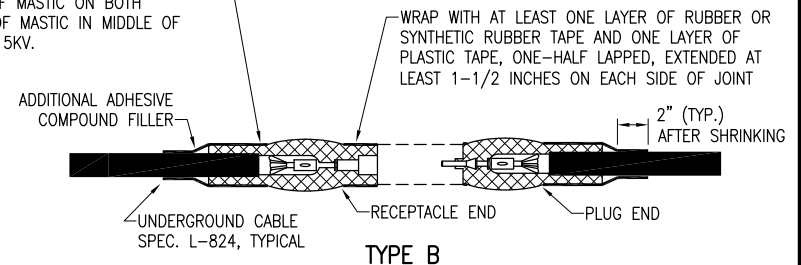
DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

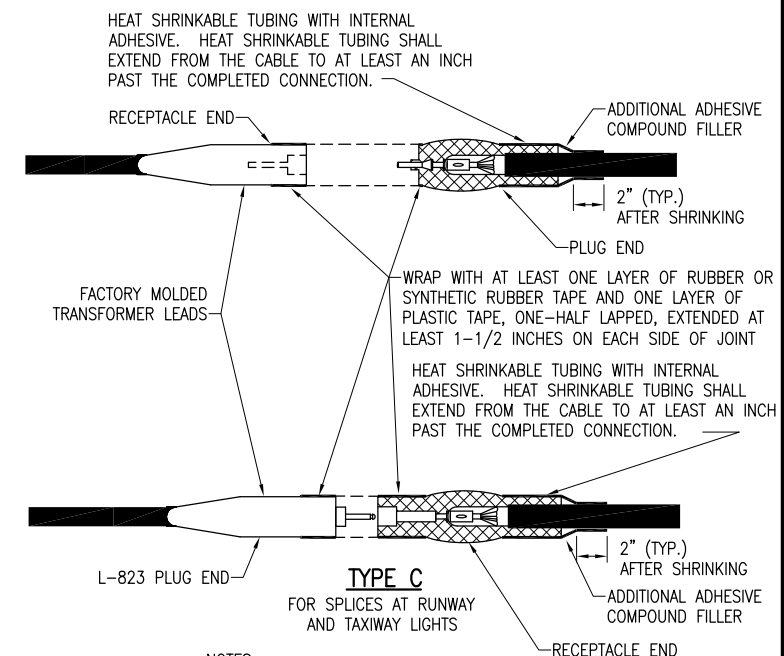


CONTINUOUS HEAT SHRINK TUBING PLACED OVER THE ENTIRE L-823 CONNECTOR(S) BOTH MALE AND FEMALE AT ALL 5KV JUNCTIONS. THE HEAT SHRINK TUBING SHALL BE APPROXIMATELY 18" IN LENGTH WITH 6 INCHES OF MASTIC ON BOTH ENDS AND VOID OF MASTIC IN MIDDLE OF TUBE RATED FOR 5KV.

FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTIONS BOXES



FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES

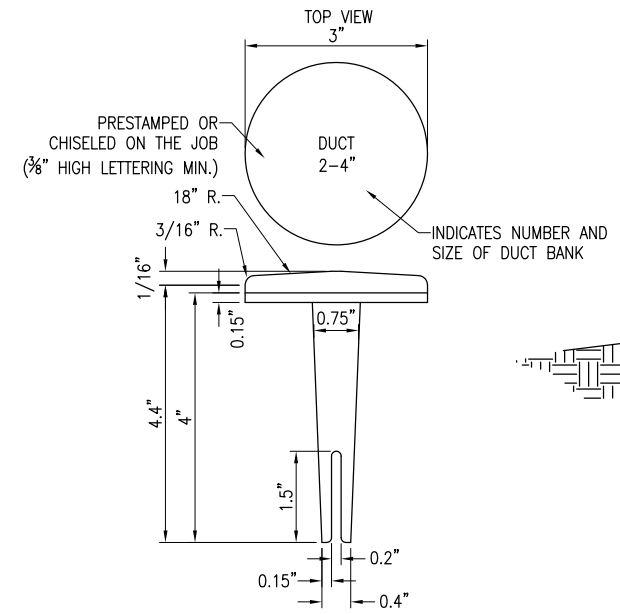


NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.

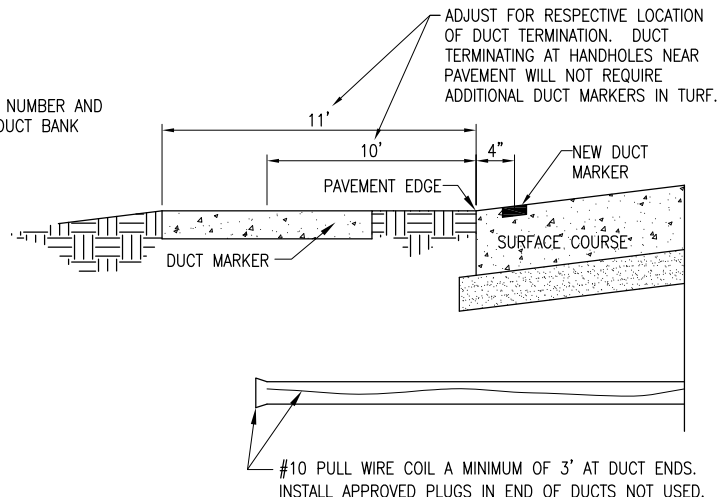
INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.

CABLE SPLICES
(NOT TO SCALE)

CABLE TRENCHES
(NOT TO SCALE)



BITUMINOUS PAVEMENT DUCT MARKERS
"NOT TO SCALE"

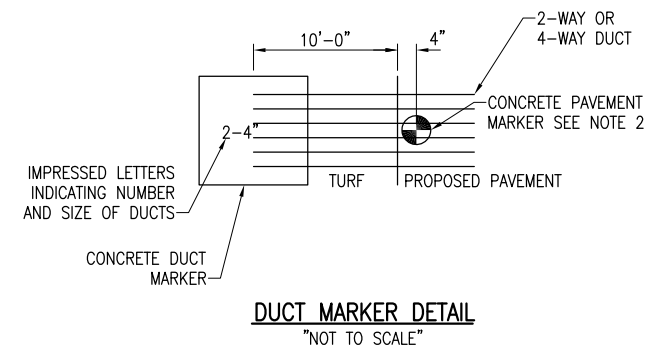


UNDERGROUND ELECTRICAL DUCT
(NOT TO SCALE)

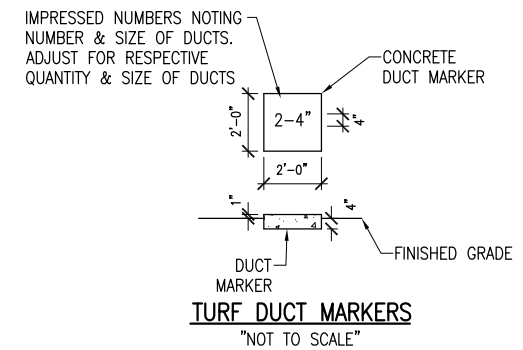
CABLE & DUCT MARKER NOTES:

1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE INFORMED AS DESCRIBED IN NOTE 4.
3. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
5. EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT LEGEND IS REQUIRED:
 - A. REDUCE LETTER SIZE TO 3" HIGH BY 2" WIDE
 - B. INCREASE MARKER SIZE TO 30" X 30"
 - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE

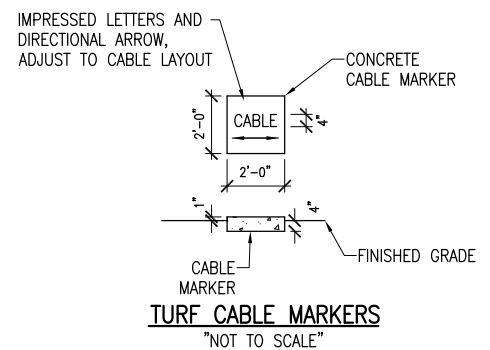
- NOTE:**
1. TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE
 2. BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO. INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278.



DUCT MARKER DETAIL
"NOT TO SCALE"



TURF DUCT MARKERS
"NOT TO SCALE"



TURF CABLE MARKERS
"NOT TO SCALE"

REHABILITATE AIRFIELD LIGHTS

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SBG No:3-17-0124-B30

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ELECTRICAL DETAILS

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AIRFIELD LIGHTING NOTES

1. UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
4. THE JOINTS OF THE 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 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
5. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
6. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
7. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
8. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
9. DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
10. A SLACK OF THREE (3') FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER. THERE SHALL BE NO ADDITIONAL PAYMENT FOR CABLE SLACK AND THEREFORE THE QUANTITY OF PROPOSED CABLE SLACK HAS NOT BEEN INCLUDED IN THE RESPECTIVE CABLE PAY ITEMS.
11. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
12. L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

GROUNDING NOTES FOR AIRFIELD LIGHTING

20. ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK AS SHOWN IN DETAIL "B" ON ELECTRICAL DETAILS SHEET 1.
21. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
22. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
23. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
24. ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
25. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
26. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
27. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
29. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI, AIR-ENTRAINED.
30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
31. THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE AIRPORT OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.
32. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FEET LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR SUITABLE FOR DIRECT BURY IN EARTH OR CONCRETE. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 30 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW INSULATION OR A BRAIDED GROUND STRAP OF EQUIVALENT CURRENT RATING. THE GROUND WIRE LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING BONDING WIRE.
3. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2011 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
4. PER FAA 150/5340-30G THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
5. FOR TAXIWAY LIGHTS THAT ARE SPACED WITH LESS THAN 10 FEET OF SEPARATION BETWEEN THEM, PROVIDE ONE 3/4-INCH DIAMETER BY 10 FEET LONG GROUND ROD PER TWO ADJACENT TAXIWAY LIGHTS. LOCATE GROUND ROD MIDWAY BETWEEN THE TWO TAXIWAY LIGHTS.
6. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGN FOR TESTING GROUND SYSTEMS. TEST RESULT SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAIDS INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER.

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REHABILITATE AIRFIELD LIGHTS

IDA No: 06C-4161
SBG No:3-17-0124-B30

Contract No: SH026

NO.	DATE	DESCRIPTION		
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SHEET TITLE

ELECTRICAL NOTES SHEET 2



ELECTRICAL LEGEND - ONE-LINE DIAGRAM	
	CABLE TERMINATOR/LUG
	TRANSFORMER
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	CIRCUIT BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	FUSE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE
	GROUND - GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL
	INDICATING LIGHT
	MOTOR
	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
	EQUIPMENT, XXX = DEVICE DESCRIPTION
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	PANELBOARD WITH MAIN LUGS
	PANELBOARD WITH MAIN BREAKER
	FUSE PANEL WITH MAIN FUSE PULLOUT
	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE
	CONTROL STATION
	TRANSFER SWITCH
	ENGINE GENERATOR SET

ELECTRICAL LEGEND - SCHEMATIC	
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

ELECTRICAL ABBREVIATIONS	
A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK - ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCUAR MIL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD

ELECTRICAL ABBREVIATIONS (CONTINUED)	
PB	PULL BOX
PC	PHOTO CELL
PDB	POWER DISTRIBUTION BLOCK
PNL	PANEL
RCPT	RECEPTACLE
R	RELAY
S	STARTER
SPD	SURGE PROTECTION DEVICE
SPST	SINGLE POLE SINGLE THROW
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITER'S LABORATORIES
V	VOLTS
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF
XFER	TRANSFER
XFMR	TRANSFORMER

AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS	
ASOS	AUTOMATED SURFACE OBSERVING SYSTEM
ATCT	AIR TRAFFIC CONTROL TOWER
AWOS	AUTOMATED WEATHER OBSERVING SYSTEM
CCR	CONSTANT CURRENT REGULATOR
DME	DISTANCE MEASURING EQUIPMENT
FAR	FEDERAL AVIATION REGULATION
GS	GLIDE SLOPE FACILITY
HIRL	HIGH INTENSITY RUNWAY LIGHT
ILS	INSTRUMENT LANDING SYSTEM
IM	INNER MARKER
LIR	LOW IMPACT-RESISTANT
LOC	LOCALIZER FACILITY
MALS	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM
MALSR	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATING LIGHTS
MIRL	MEDIUM INTENSITY RUNWAY LIGHT
MITL	MEDIUM INTENSITY TAXIWAY LIGHT
NDB	NON-DIRECTIONAL BEACON
PAPI	PRECISION APPROACH PATH INDICATOR
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR
RAIL	RUNWAY ALIGNMENT INDICATING LIGHTS
REIL	RUNWAY END IDENTIFIER LIGHT
RVR	RUNWAY VISUAL RANGE
VADI	VISUAL APPROACH DESCENT INDICATOR
VASI	VISUAL APPROACH SLOPE INDICATOR
VOR	VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE FACILITY
WC	WIND CONE

NOTES:

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

120/240 VAC, 1 PHASE, 3 WIRE
PHASE A BLACK
PHASE B RED
NEUTRAL WHITE
GROUND GREEN
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

REHABILITATE AIRFIELD LIGHTS

IDA No: 06C-4161
SBG No:3-17-0124-B30

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ELECTRICAL LEGEND AND ABBREVIATIONS



REHABILITATE
AIRFIELD LIGHTS

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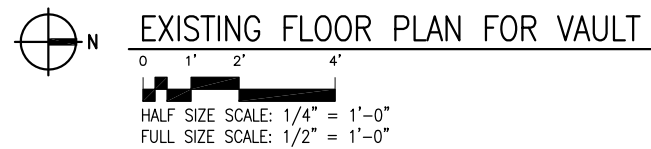
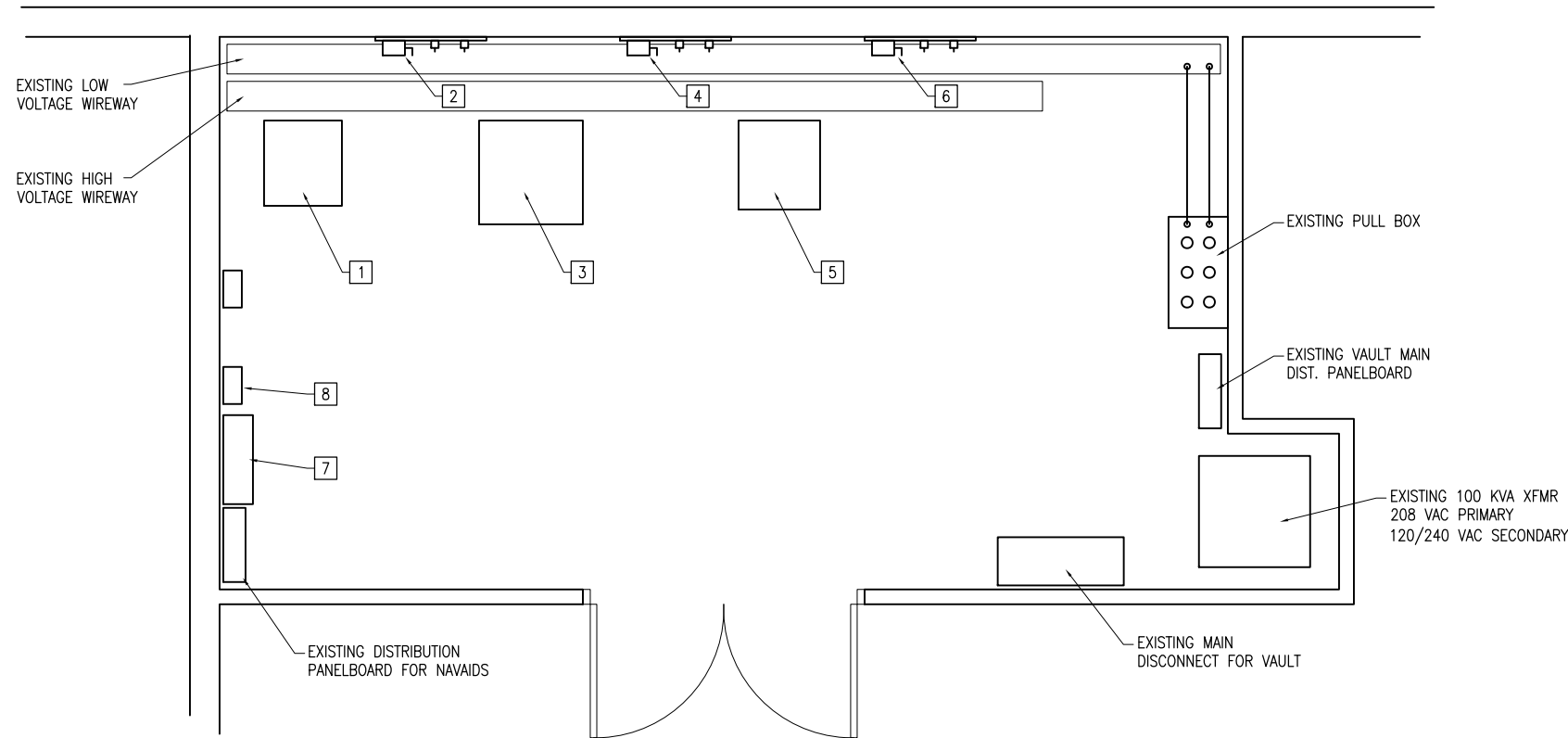
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SHEET TITLE

EXISTING FLOOR
PLAN FOR VAULT

GENERAL NOTES

1. ALL VAULT WORK, AND/OR POWER OUTAGES, SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE AND THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
2. CONTRACTOR SHALL EXAMINE THE SITE AND FIELD VERIFY EXISTING CONDITIONS.
3. ALL VAULT WORK, POWER OUTAGES AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. EQUIPMENT DESIGNATED FOR REMOVAL SHALL BE TURNED OVER TO THE AIRPORT. IN THE EVENT THE AIRPORT DOES NOT WANT THE RESPECTIVE EQUIPMENT, THE CONTRACTOR SHALL DISPOSE OF IT OFF SITE.
5. EXISTING ABANDONED CABLES INSIDE VAULT SHALL BE REMOVED. EXISTING CABLES AND WIRING ASSOCIATED WITH SYSTEMS TO BE REMOVED AND/OR REPLACED SHALL BE REMOVED WHERE ACCESSIBLE.
6. EXISTING VAULT ROOM DIMENSIONS ARE APPROXIMATE BASED ON FIELD DATA.



KEYED NOTES

1. EXISTING CCR FOR RUNWAY 11-29 LIGHTING; CROUSE-HINDS PART NO. 31360-104-3, 10KW UNIT TO BE DISCONNECTED AND RELOCATED TO STORAGE AREA.
2. EXISTING LOW VOLTAGE DISCONNECT AND HIGH VOLTAGE CUTOUPS WITH RUNWAY LIGHT FOR RUNWAY 11-29 LIGHTING CIRCUIT TO BE DISCONNECTED AND REMOVED.
3. EXISTING CCR FOR TAXIWAY LIGHTING; MANAIRCO PART NO MR15L8283B-02, 15KW UNIT TO BE DISCONNECTED AND REWIRED AS DETAILED HEREIN.
4. EXISTING LOW VOLTAGE DISCONNECT AND HIGH VOLTAGE CUTOUPS WITH TAXIWAY LIGHT FOR TAXIWAY LIGHTING CIRCUIT TO BE DISCONNECTED AND REMOVED.
5. EXISTING SPARE CCR; ADB-ALNACO S/N H960463 10KW UNIT TO BE DISCONNECTED AND RELOCATED TO STORAGE AREA.
6. EXISTING LOW VOLTAGE DISCONNECT AND HIGH VOLTAGE CUTOUPS FOR SPARE CCR TO BE DISCONNECTED AND REMOVED.
7. EXISTING RELAY PANEL FOR NAVAIDS WITH L-821 CONTROL PANEL LOCATED BELOW TO BE DISCONNECTED, REMOVED, AND REPLACED WITH A NEW LIGHTING CONTACTOR CONTROL PANEL.
8. EXISTING L-854 RADIO RECEIVER TO REMAIN AND BE REWIRED AS DETAILED HEREIN.



NOTES

1. ALL VAULT WORK, AND/OR POWER OUTAGES, SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE AND THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
2. CONTRACTOR SHALL EXAMINE THE SITE AND FIELD VERIFY EXISTING CONDITIONS.
3. ALL VAULT WORK, POWER OUTAGES AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. EQUIPMENT DESIGNATED FOR REMOVAL SHALL BE TURNED OVER TO THE AIRPORT. IN THE EVENT THE AIRPORT DOES NOT WANT THE RESPECTIVE EQUIPMENT, THE CONTRACTOR SHALL DISPOSE OF IT OFF SITE.
5. EXISTING ABANDONED CABLES INSIDE VAULT SHALL BE REMOVED. EXISTING CABLES AND WIRING ASSOCIATED WITH SYSTEMS TO BE REMOVED AND/OR REPLACED SHALL BE REMOVED WHERE ACCESSIBLE.
6. THE EXISTING CONSTANT CURRENT REGULATOR FOR THE TAXIWAY SHALL BE DISCONNECTED (INPUT POWER, OUTPUT POWER AND CONTROL WIRING) AND BE REWIRED AS DETAILED HEREIN.
7. THE EXISTING CONSTANT CURRENT REGULATOR FOR RUNWAY 11-29 SHALL BE DISCONNECTED (INPUT POWER, OUTPUT POWER, AND CONTROL WIRING) AND RELOCATED TO A STORAGE AREA DESIGNATED BY THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE
8. THE EXISTING SPARE CONSTANT CURRENT REGULATOR SHALL BE DISCONNECTED (INPUT POWER, OUTPUT POWER AND CONTROL WIRING) AND RELOCATED TO A STORAGE AREA DESIGNATED BY THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE
9. THE EXISTING NAVAID CIRCUITS ARE NOT SHOWN ON THE ONE-LINE DIAGRAM. CONTRACTOR SHALL FIELD VERIFY AND CONFIRM THE EXISTING CIRCUITS AS APPLICABLE TO ACCOMMODATE NEW WORK.
10. COORDINATE VAULT WORK TO MINIMIZE DOWNTIME OF AIRFIELD LIGHTING SYSTEMS.

REHABILITATE AIRFIELD LIGHTS

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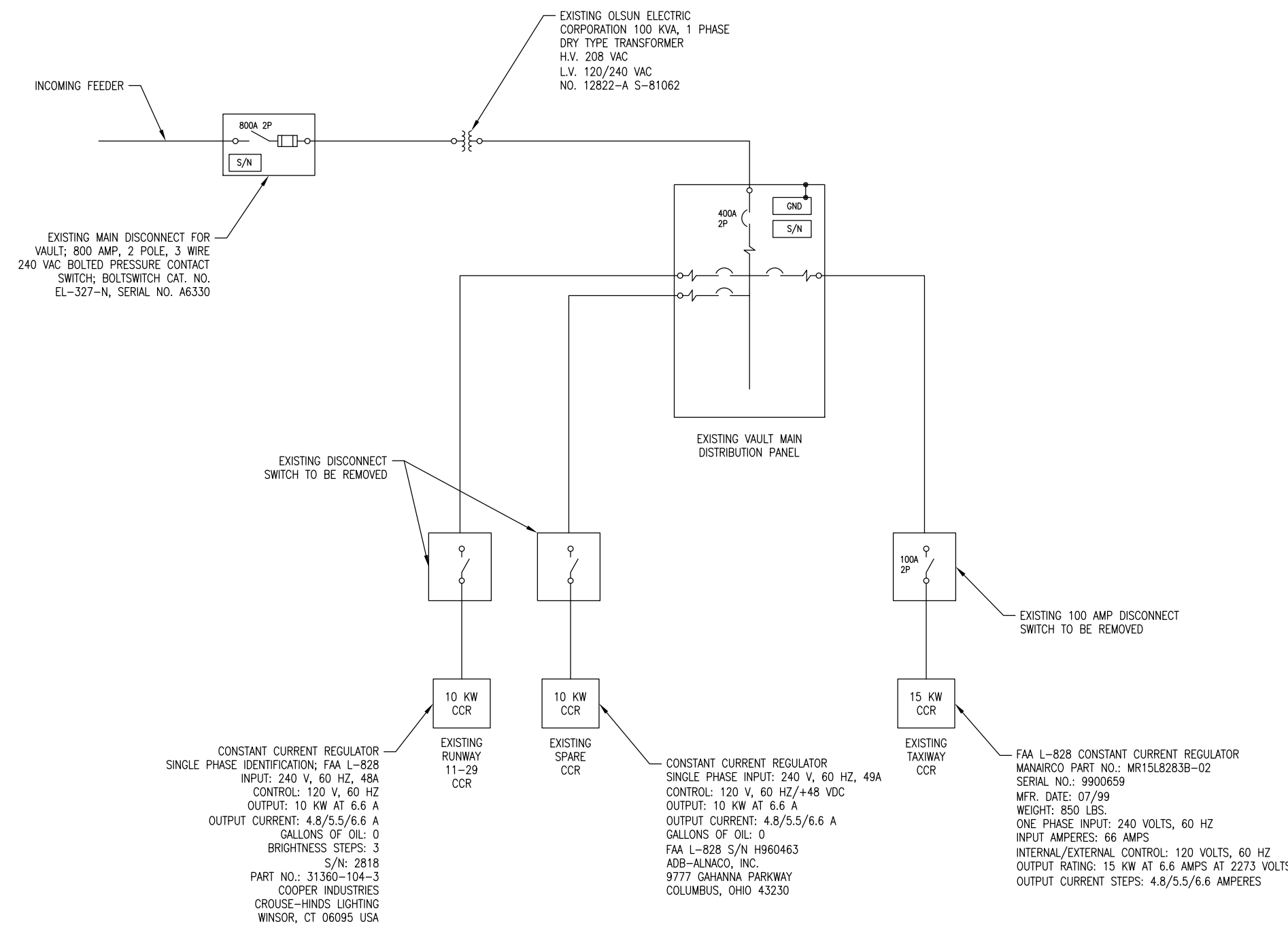
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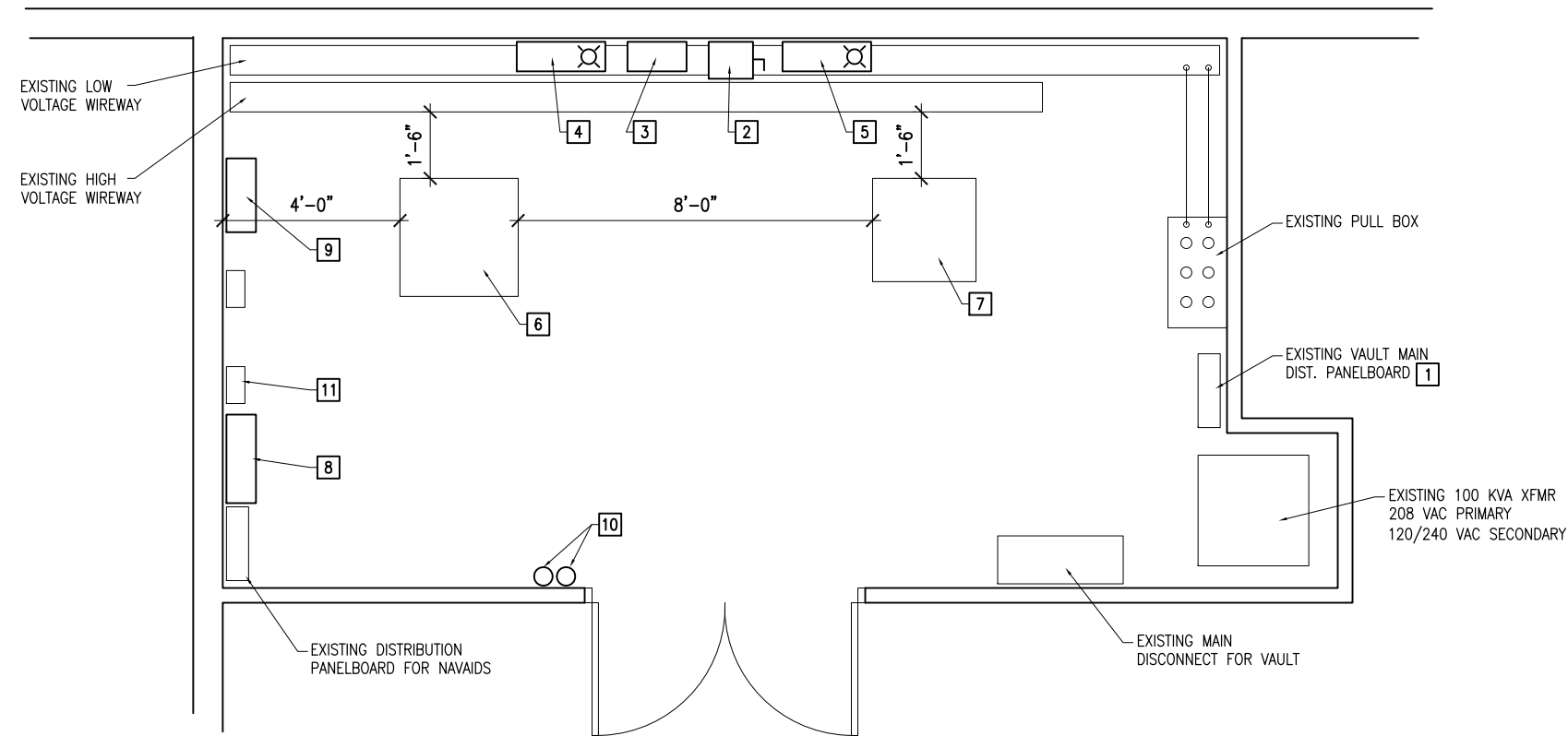
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SHEET TITLE

EXISTING ELECTRICAL ONE-LINE FOR VAULT AND AIRFIELD



EXISTING ELECTRICAL ONE LINE DIAGRAM FOR VAULT AND AIRFIELD

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NEW FLOOR PLAN FOR VAULT

0 1' 2' 4'

HALF SIZE SCALE: 1/4" = 1'-0"
FULL SIZE SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SEE "PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO CCR'S (CONSTANT CURRENT REGULATORS), LIGHTING CONTACTOR PANEL, AND OTHER EQUIPMENT. SEE "HIGH VOLTAGE WIRING SCHEMATIC" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC" FOR CCR AND NAVAID CONTROL WIRING REQUIREMENTS.
2. CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, POWER SOURCE OR CIRCUIT, AND VOLTAGE SYSTEM.
3. MAINTAIN SEPARATION OF HIGH VOLTAGE WIRING FROM LOW VOLTAGE WIRING TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN, HANDHOLE, OR MANHOLE.
4. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ANY TEMPORARY EXPOSED WIRING IN CONDUIT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FFA AC 150/5370-2F OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, PART 218, PARAGRAPH C.
5. BOND EACH WIREWAY TO VAULT GROUND BUS WITH #6 AWG COPPER BONDING JUMPER.
6. BOND EACH CCR FRAME/HOUSING TO VAULT GROUND BUS WITH #6 AWG COPPER BONDING JUMPER.
7. MAINTAIN SEPARATION OF HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS. LOW VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE LOW VOLTAGE SECTION. HIGH VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION.
8. THE REGULATORS TO BE DISCONNECTED FROM THE CIRCUIT SHALL BE RELOCATED TO A STORAGE AREA DESIGNATED BY THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE.

KEYED NOTES

1. FURNISH AND INSTALL A 100AMP, 2-POLE BOLT-ON BREAKER WITH 22,000 AIC AT 120/240 VAC FOR THE CCR FEEDER CIRCUIT.
2. NEW 200AMP, 240 VAC DOUBLE THROW FUSIBLE SAFETY SWITCH FOR THE CCR'S SEE GENERAL NOTE 1.
3. NEW TRANSFORMER PAIR CUTOUTS IN A NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER AND PAD LOCKABLE FEATURE. SEE GENERAL NOTE 1.
4. NEW CUTOUTS FOR RUNWAY 11-29 LIGHTING IN A NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER AND PAD LOCKABLE FEATURE. INCLUDE L-861 LIGHT FIXTURE FOR GROUND FAULT INDICATION. SEE GENERAL NOTE 1.
5. NEW CUTOUTS FOR TAXIWAY LIGHTING IN NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER AND PAD LOCKABLE FEATURE. INCLUDE L-861 LIGHT FIXTURE FOR GROUND FAULT INDICATION. SEE GENERAL NOTE 1.
6. NEW 15 KW CCR FOR RUNWAY 11-29 AND TAXIWAY LIGHTING PRIMARY CCR. SEE GENERAL NOTE 1.
7. EXISTING MANAIRCO PART NO. MR15L8283B-02 CCR TO BE REWIRED FOR RUNWAY 11-29 AND TAXIWAY LIGHTING BACKUP/SPARE CCR. SEE GENERAL NOTE 1.
8. NEW LIGHTING CONTACTOR CONTROL PANEL TO REPLACE EXISTING RELAY PANEL AND EXISTING L-821 CONTROL PANEL. SEE GENERAL NOTE 1.
9. NEW RADIO RELAY INTERFACE CONTROL PANEL FOR CCR'S.

10. FURNISH AND INSTALL A UL RATED, 10 POUND CARBON DIOXIDE FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS C FIRES AND A 10 POUND CLASS 4A:80B:C DRY CHEMICAL ABC FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS A,B,C FIRES, IN THE VAULT. PER NFPA 10 "PORTABLE FIRE EXTINGUISHERS" CLASS C ARE FOR FIRES THAT INVOLVE ENERGIZED ELECTRICAL EQUIPMENT. FIRE EXTINGUISHERS SHALL BE MADE IN THE UNITED STATES OF AMERICA TO COMPLY WITH BUY AMERICAN REQUIREMENT. FIRE EXTINGUISHER TYPE CO2 SHALL BE AMEREX MODEL 330, ANSUL SENTRY 10 MODEL CD10A-1 OR APPROVED EQUAL. FIRE EXTINGUISHER DRY CHEMICAL TYPE ABC SHALL BE AMEREX MODEL B456, OR APPROVED EQUAL. PROVIDE WALL MOUNTING BRACKET FOR EACH FIRE EXTINGUISHER. CONFIRM MODEL NUMBERS WITH THE RESPECTIVE FIRE EXTINGUISHER MANUFACTURER.
11. EXISTING L-854 RADIO RECEIVER.

REHABILITATE AIRFIELD LIGHTS

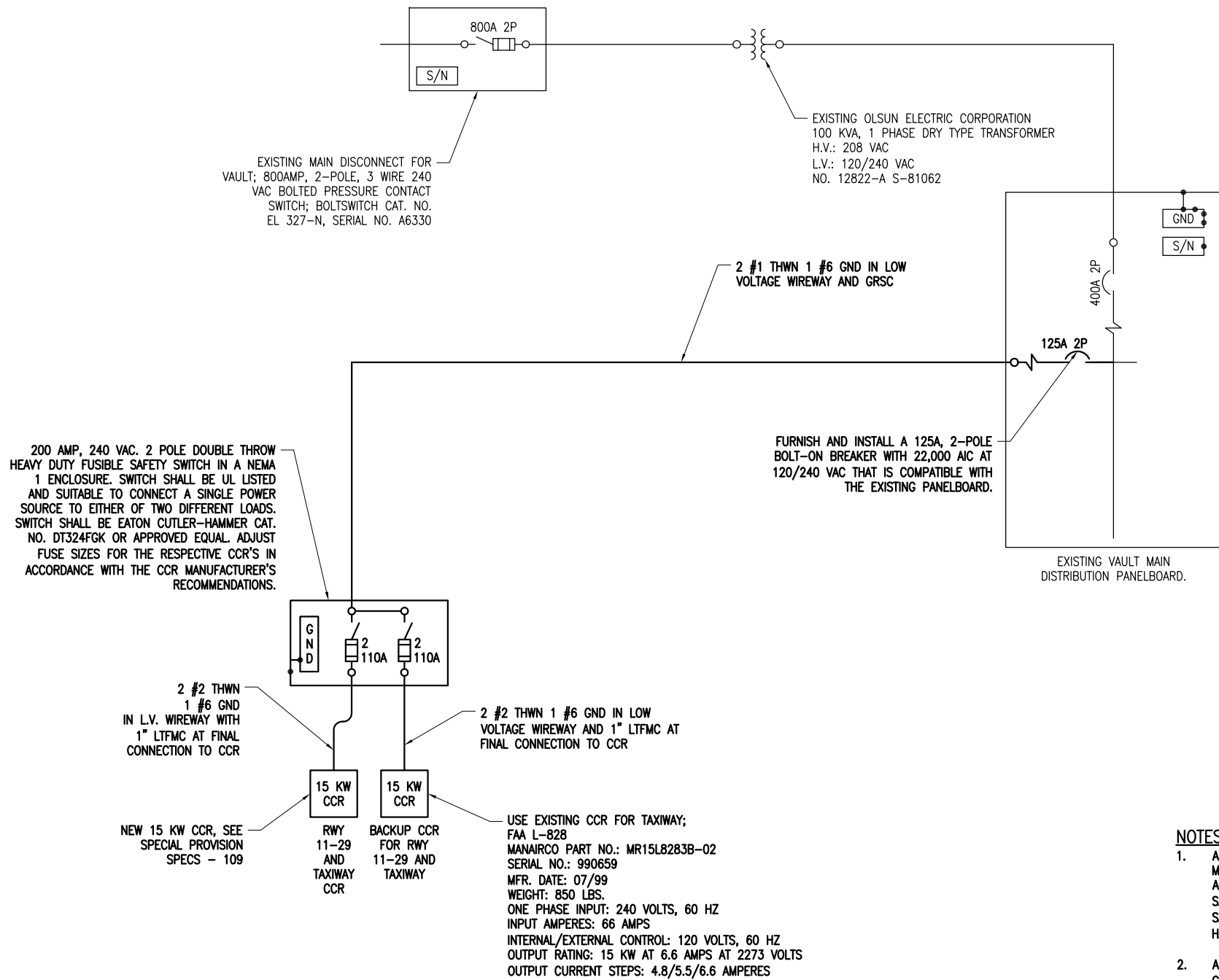
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NEW FLOOR PLAN FOR VAULT



NEW ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD

NOTES

- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- ALL CONDUCTORS/WIRING SHALL BE COPPER.
- CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
- HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, MANHOLES, JUNCTION BOX, OR RACEWAY.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- CONFIRM VAULT TRANSFORMER SECONDARY IS PROPERLY GROUNDED. CORRECT WHERE APPLICABLE. CONTACT PROJECT ENGINEER FOR FURTHER DIRECTION.
- ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.

REHABILITATE AIRFIELD LIGHTS

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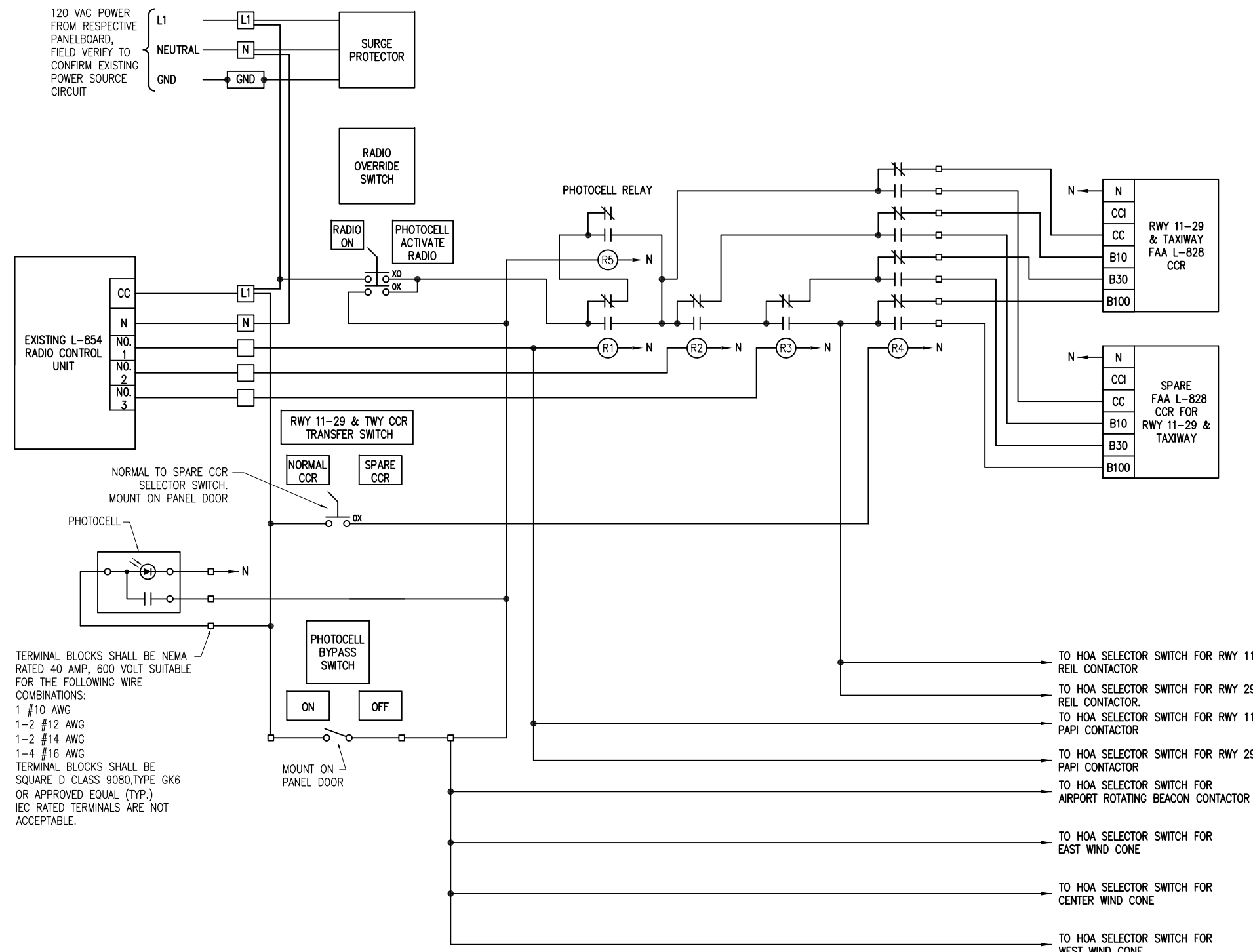
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SHEET TITLE

NEW ELECTRICAL ONE-LINE FOR VAULT & AIRFIELD LIGHTING



TERMINAL BLOCKS SHALL BE NEMA RATED 40 AMP, 600 VOLT SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS:
1 #10 AWG
1-2 #12 AWG
1-2 #14 AWG
1-4 #16 AWG
TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080, TYPE GK6 OR APPROVED EQUAL (TYP.)
IEC RATED TERMINALS ARE NOT ACCEPTABLE.

NOTES:

- RELAY INTERFACE CONTROL PANEL SHALL BE MANUFACTURED BY AN FAA APPROVED L-821 PANEL BUILDER OR A UL 508 INDUSTRIAL CONTROL PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS. WHERE THE RELAY INTERFACE PANEL IS MADE BY AN L-821 PANEL BUILDER IT SHALL BE LABELED AS AN L-821 PANEL. RELAY INTERFACE CONTROL PANEL SHALL BE A SEPARATE PANEL. DO NOT COMBINE WITH LIGHTING CONTACTOR PANEL.
- PANEL SHALL BE IN A NEMA 12 ENCLOSURE WITH HINGED COVER. DRILL HOLE IN BOTTOM OF ENCLOSURE TO ALLOW CONDENSATION TO ESCAPE.
- EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE. ALL PANEL INTERIOR CONTROL CABLE SHALL BE MINIMUM 16 AWG, COPPER, 600 VOLT CABLE.
- IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 11-29 AND TAXIWAY CONSTANT CURRENT REGULATORS (PRIMARY UNIT & SPARE UNIT) SHALL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:
PHOTOCELL - 10% BRIGHTNESS & ACTIVATE RADIO CONTROL
5 CLICKS - 30% BRIGHTNESS
7 CLICKS - 100% BRIGHTNESS
- THE RUNWAY 11-29 PAPI CIRCUITS WILL BE CONTROLLED IN THE AUTOMATIC MODE BY THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER.
CONFIRM CONTROL WITH AIRPORT MANAGER.
3 CLICKS - ON
5 CLICKS - REMAIN ON
7 CLICKS - REMAIN ON
- THE RUNWAY 11-29 REIL CIRCUITS WILL BE CONTROLLED IN THE AUTOMATIC MODE BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER.
PHOTOCELL ACTIVATION ENABLES RADIO CONTROL
3 CLICKS - OFF
5 CLICKS - OFF
7 CLICKS - ON
- THE RADIO OVERRIDE SWITCH WILL ACTIVATE L-854 RADIO CONTROL 24 HOURS PER DAY IN THE "RADIO ON" POSITION. THE PHOTOCELL WILL ACTIVATE RADIO CONTROL IN THE "PHOTOCELL ACTIVATE RADIO" POSITION.
- IN THE AUTOMATIC MODE THE WIND CONES AND AIRPORT ROTATING BEACON WILL BE ACTIVATED BY THE PHOTOCELL OR PHOTOCELL BYPASS SWITCH.
- EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
- INCLUDE PHOTOCELL BYPASS SWITCH.
- SURGE PROTECTOR SHALL BE UL LISTED PER UL 1449, SUITABLE FOR 120 VAC, 1 PH, 2 WIRE PLUS GROUND SYSTEM WITH SURGE CURRENT RATING OF 40 KA (MIN.), 8x20 MICROSECOND WAVE, AND STATUS INDICATION LIGHTS IN A WEATHERPROOF HOUSING, JOSLYN MODEL 1260-21, OR APPROVED EQUAL. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE. INCLUDE MOUNTING BRACKET.
- INCLUDE EQUIPMENT GROUND BAR, ILSKO D167-12 OR EQUAL.
- CONTROL RELAYS SHALL HAVE 10 AMP CONTACT RATINGS AT 240 VAC WITH 120 VAC COILS. PROVIDE 3 SPARE RELAYS FOR EACH TYPE USED IN THE RELAY INTERFACE PANEL.
- COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE CONSISTENT FOR ALL REGULATORS. COLOR CODING SHALL BE AS FOLLOWS:
CC -RED
10% -ORANGE
30% -YELLOW
100% -BLUE
NEUTRAL -WHITE
EQUIPT. GND -GREEN
ALSO TAG THE CONTROL WIRES WITH THE RESPECTIVE DESIGNATION (CC, 10%, 30%, 100%)
- "N" DESIGNATES NEUTRAL CONNECTION OR NEUTRAL CONDUCTOR.
- THE RUNWAY LIGHTING AND NAVAIDS (INCLUDING PAPIS, REILS, WIND CONES AND AIRPORT ROTATING BEACON) SHALL REMAIN OPERATIONAL THROUGHOUT THE PROJECT EXCEPT WHEN NECESSARY TO INTERFACE TO THE NEW CONTROL SYSTEMS. CONTRACTOR SHALL PROVIDE WORK AND TEMPORARY CONNECTIONS AS APPLICABLE TO MAINTAIN OPERATION OF RUNWAY LIGHTING AND NAVAIDS.

AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC

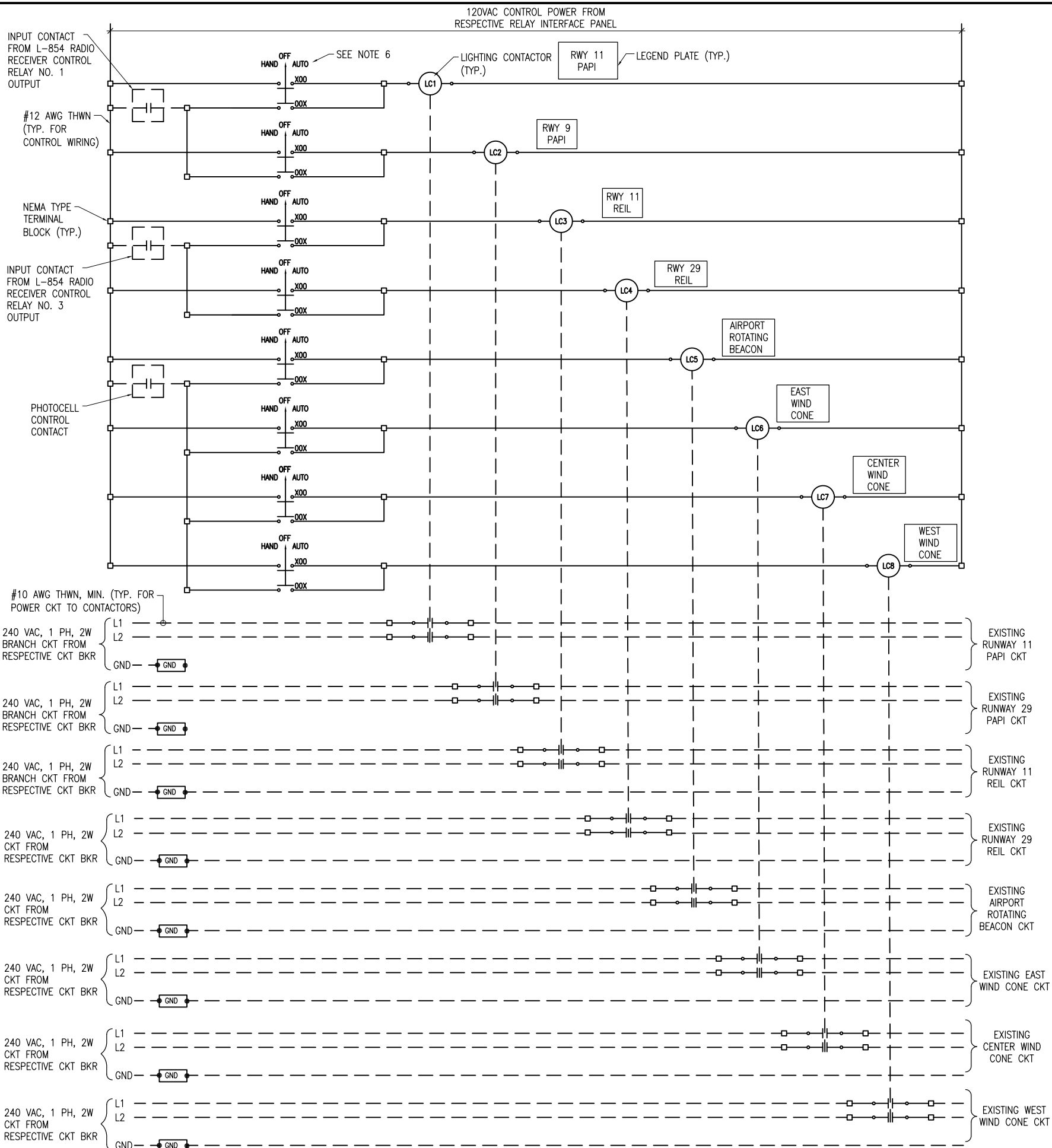
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AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC

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NOTES

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL. 25 AMP AND 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL.
- INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").

**REHABILITATE
AIRFIELD LIGHTS**

IDA No: 06C-4161
SBG No:3-17-0124-B30

Contract No: SH026

NO.	DATE	DESCRIPTION

NO.	DATE	LAY	DWN	REV

**LIGHTING
CONTACTOR PANEL
SCHEMATIC**

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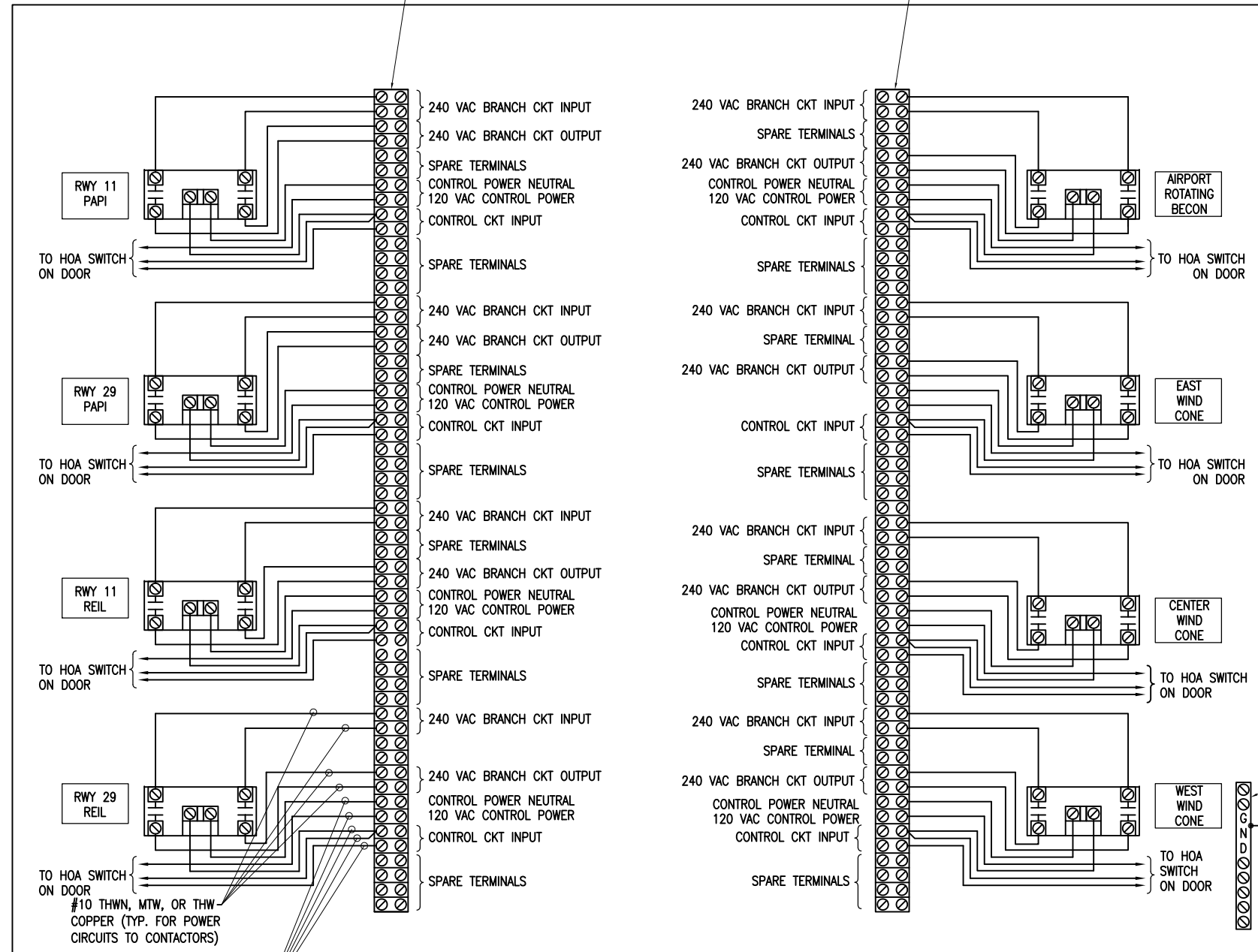


NEMA TYPE TERMINAL BLOCKS RATED 85A, 600 VOLT
SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS
1 #4 AWG
1 #6 AWG
1-2 #8 AWG
1-4 #10 AWG
1-5 #12 AWG
TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080
TYPE GC6 OR APPROVED EQUAL. IEC RATED TERMINAL
BLOCKS ARE NOT ACCEPTABLE.

NEMA TYPE TERMINAL BLOCKS RATED 85A, 600 VOLT
SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS
1 #4 AWG
1 #6 AWG
1-2 #8 AWG
1-4 #10 AWG
1-5 #12 AWG
TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080
TYPE GC6 OR APPROVED EQUAL. IEC RATED TERMINAL
BLOCKS ARE NOT ACCEPTABLE.

NOTES

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL. 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL.
- INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "RWY 11 REILS" OR "RWY 11 PAPI").
- SEE "LIGHTING CONTACTOR SCHEMATIC" SHEET FOR ADDITIONAL INFORMATION ON WIRING. ALSO SEE "AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC" SHEET FOR INFORMATION ON WIRING.
- INCLUDE LEGEND PLATE LABELED "NOTICE: CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME".
- 120/240 VAC PHASE "A" CONDUCTORS SHALL HAVE BLACK COLORED INSULATION. 120/240 VAC PHASE "B" CONDUCTORS SHALL HAVE RED COLORED INSULATION. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION. INSULATED EQUIPMENT GROUND WIRES SHALL HAVE GREEN COLORED INSULATION.
- CONTROL PANEL FOR AIRFIELD LIGHTING AND NAVAIDS SHALL BE MANUFACTURED BY A UL 508 INDUSTRIAL CONTROL PANEL BUILDER OR AN FAA APPROVED L-821 PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS. WHERE THE PANEL IS MANUFACTURED BY AN L-821 PANEL BUILDER IT SHALL BE LABELED AS AN L-821 PANEL.
- ALL FEEDER AND/OR BRANCH CIRCUIT CONDUCTORS OF THE SAME CIRCUIT (INCLUDING NEUTRAL CONDUCTORS AND EQUIPMENT GROUNDING CONDUCTORS) SHALL BE CONTAINED WITHIN THE SAME RACEWAY, AUXILIARY GUTTER, OR WIREWAY TO COMPLY WITH NEC 300.3(B). FOR VOLTAGE POWERED CIRCUITS TO AIRFIELD DEVICES, ROUTE ALL PHASE, NEUTRAL, AND EQUIPMENT GROUNDING CONDUCTORS FROM THE VAULT PANELBOARD TO THE LIGHTING/CONTACTOR PANEL AND THEN TO THE RESPECTIVE AIRFIELD DEVICE.



COPPER EQUIPMENT GROUND BAR
ADEQUATELY SIZED FOR ALL
GROUND WIRES TO AND FROM
LIGHTING CONTACTOR PANEL;
ILSCO D167-12, OR APPROVED
EQUAL. INSTALL ONE GROUND
WIRE PER TERMINAL.

#12 THWN, MTW, OR THW COPPER
(TYP. FOR CONTROL CIRCUITS TO
LIGHTING CONTACTORS)

NEMA 12 ENCLOSURE WITH HINGED DOOR SIZED AS REQUIRED TO HOUSE LIGHTING CONTACTORS,
CONTROL RELAY, TERMINAL BLOCKS, WIRING & INTERFACE TO EXISTING CONDUITS, APPROXIMATE
30"Hx24"Wx8"D. CONFIRM DIMENSIONS AND PROVIDE AN ENCLOSURE TO HOUSE EQUIPMENT AND TO
FIT INSIDE VAULT SPACE.

NOTE: CONFIRM SIZE OF EXISTING RELAY PANEL ENCLOSURE TO BE REPLACED AND AVAILABLE
MOUNTING SPACE FOR REPLACEMENT PANEL.

LIGHTING CONTACTOR PANEL DETAIL

**REHABILITATE
AIRFIELD LIGHTS**

IDA No: 06C-4161
SBG No:3-17-0124-B30

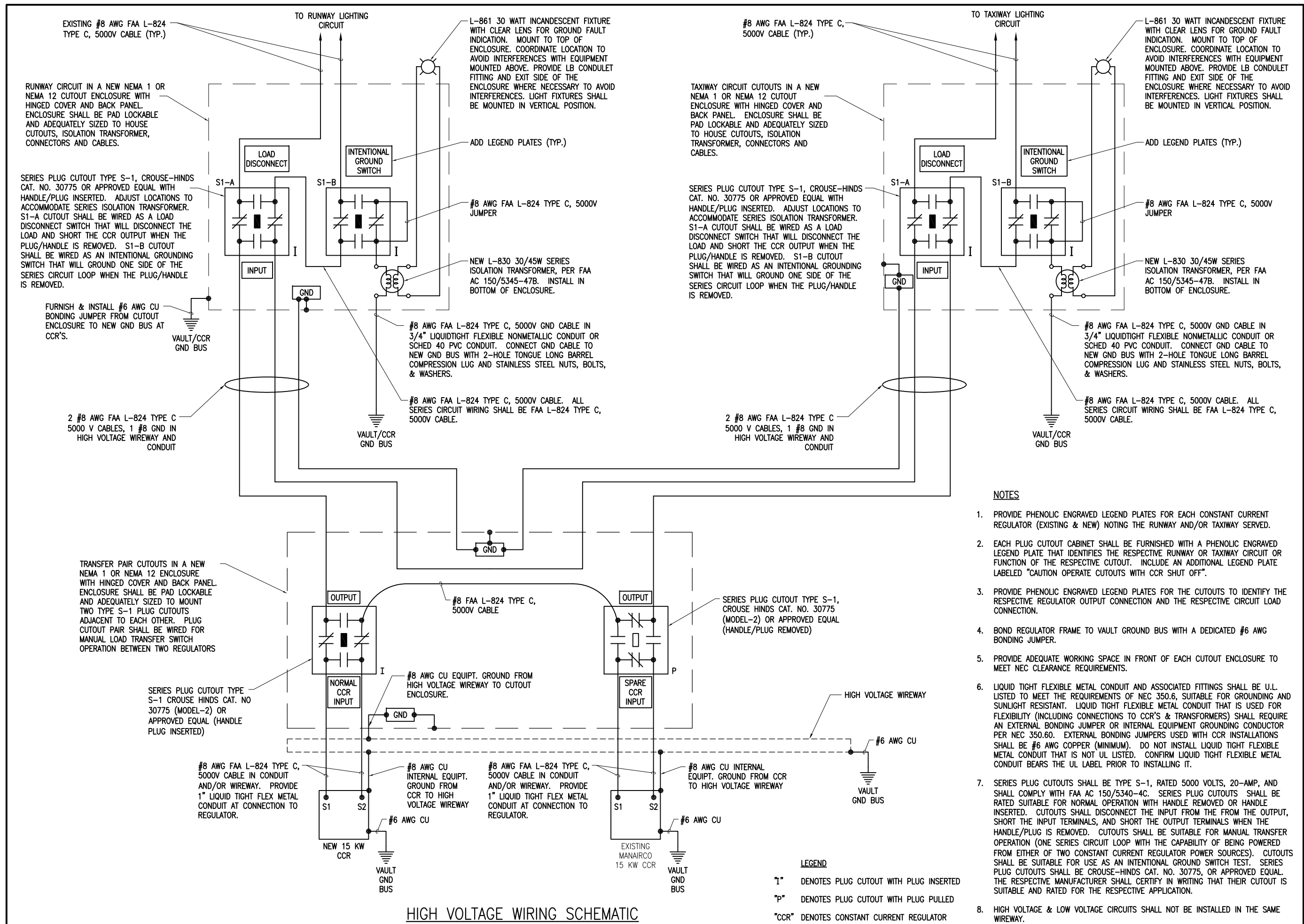
Contract No: SH026

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REVIEWED BY: KNL 9/17/13

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**LIGHTING
CONTACTOR PANEL
DETAIL**



NOTES

1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR (EXISTING & NEW) NOTING THE RUNWAY AND/OR TAXIWAY SERVED.
2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE RUNWAY OR TAXIWAY CIRCUIT OR FUNCTION OF THE RESPECTIVE CUTOUT. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF".
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE CUTOUTS TO IDENTIFY THE RESPECTIVE REGULATOR OUTPUT CONNECTION AND THE RESPECTIVE CIRCUIT LOAD CONNECTION.
4. BOND REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
6. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
7. SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, AND SHALL COMPLY WITH FAA AC 150/5340-4C. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. CUTOUTS SHALL BE SUITABLE FOR MANUAL TRANSFER OPERATION (ONE SERIES CIRCUIT LOOP WITH THE CAPABILITY OF BEING POWERED FROM EITHER OF TWO CONSTANT CURRENT REGULATOR POWER SOURCES). CUTOUTS SHALL BE SUITABLE FOR USE AS AN INTENTIONAL GROUND SWITCH TEST. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
8. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.

REHABILITATE AIRFIELD LIGHTS

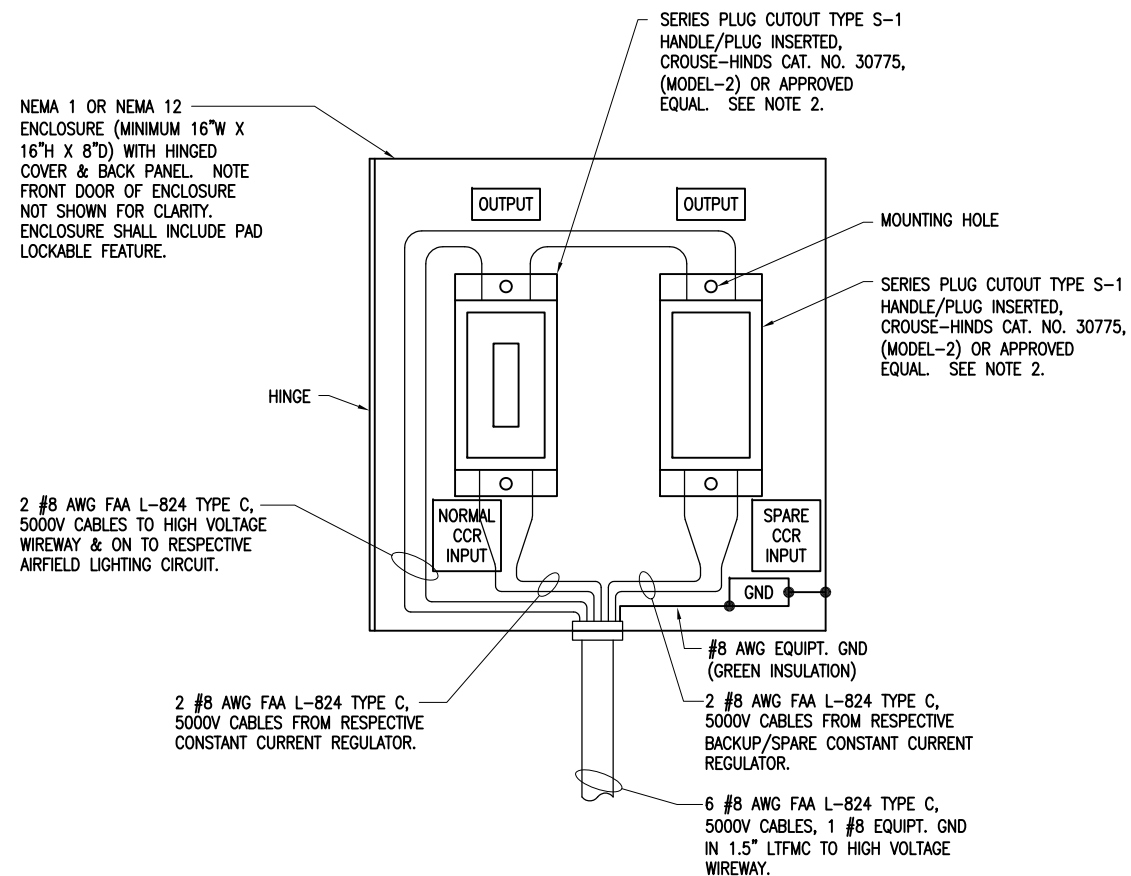
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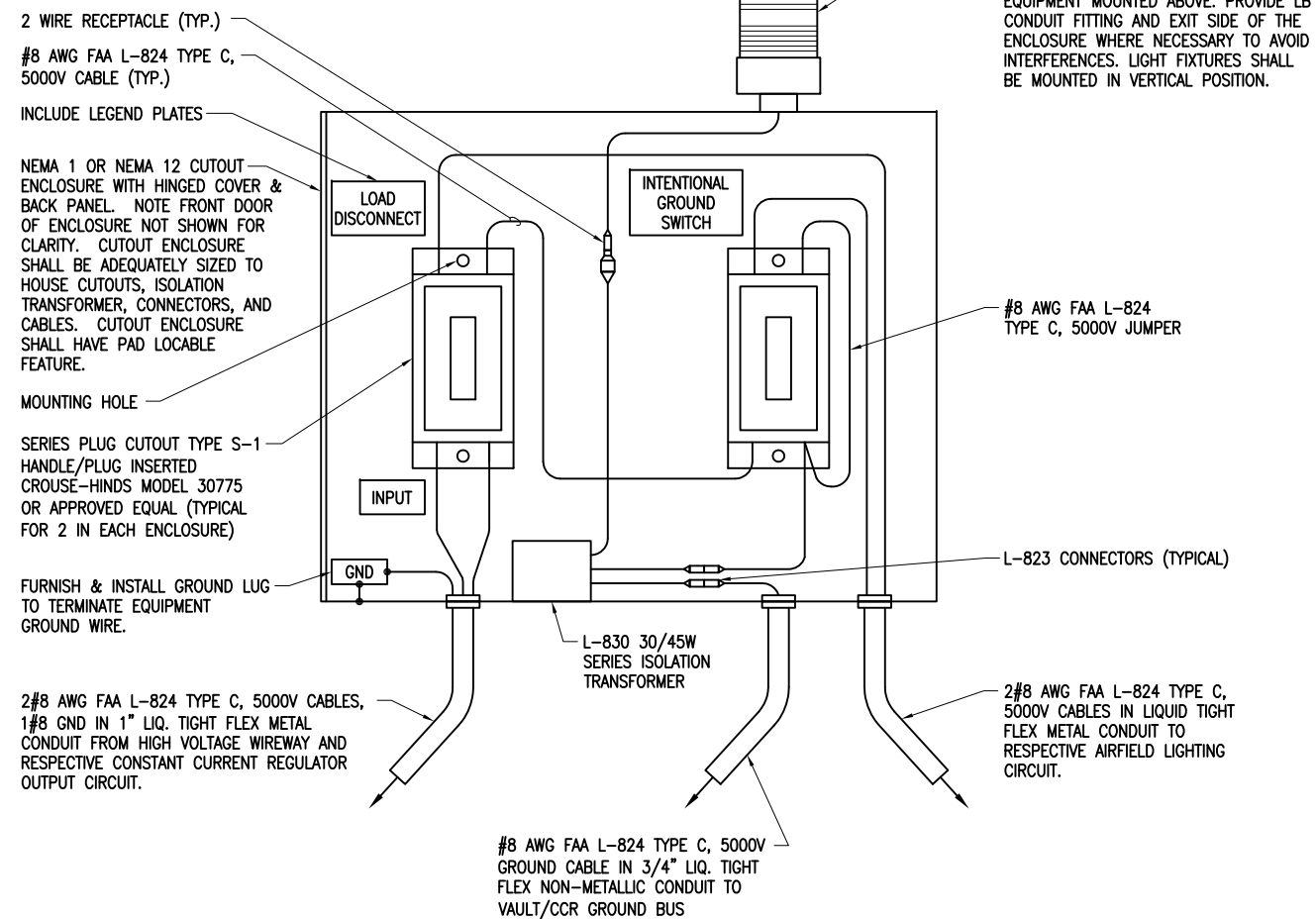
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HIGH VOLTAGE WIRING SCHEMATIC

NOV 13, 2013 9:18 AM HALUSM00682
2:12:085 [00842] 12A0156 [DESIGN] [DRAWINGS] [SHEETS] [29-E-602-LIN.DWG] NOV 13, 2013 9:18 AM HALUSM00682



**TRANSFER PAIR SERIES PLUG CUTOUT
MOUNTING DETAIL**
NOT TO SCALE



SERIES PLUG CUTOUT INSTALLATION DETAIL FOR AIRFIELD LIGHTING CIRCUITS
(TYPICAL FOR 2)

NOTES

1. PROPOSED SERIES PLUG CUTOUT INSTALLATION DETAIL SHOWN ON THIS SHEET IS FOR THE FOLLOWING CIRCUITS:
RUNWAY 11-29
TAXIWAY
2. SEE "HIGH VOLTAGE WIRING SCHEMATIC" SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING INSTALLATION OF CUTOUTS AND WIRING.

**REHABILITATE
AIRFIELD LIGHTS**

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**SERIES PLUG CUTOUT
INSTALLATION
DETAILS**

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 1:12:05 [10842] [240156] [DESIGN] [DRAWINGS] [SHEETS] [1]-[E]-603-SCH.DWG NOV 13, 2013 9:30AM HALUSM00682

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
RUNWAY 11-29 AND TAXIWAY CCR	RUNWAY 11-29 & TAXIWAY
BACKUP/SPARE CCR FOR RUNWAY 11-29 AND TAXIWAY	BACKUP CCR FOR RUNWAY 11-29 AND TAXIWAY
CUTOUT ENCLOSURE FOR TRANSFER PAIR OF CUTOUTS	TRANSFER PAIR CUTOUTS
NORMAL CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 11-29 AND TAXIWAY	NORMAL CCR INPUT
SPARE CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 11-29 AND TAXIWAY	SPARE CCR INPUT
EACH CUTOUT (TRANSFER PAIR) OUTPUT SIDE CONNECTION (2 LEGEND PLATES)	OUTPUT
CUTOUT ENCLOSURE FOR RUNWAY 11-29	RUNWAY 11-29 CUTOUTS
RUNWAY 11-29 LOAD DISCONNECT CUTOUT INPUT SIDE	INPUT
RUNWAY 11-29 LOAD DISCONNECT CUTOUT OUTPUT SIDE	LOAD DISCONNECT
RUNWAY 11-29 INTENTIONAL GROUND SWITCH CUTOUT	INTENTIONAL GROUND SWITCH
CUTOUT ENCLOSURE FOR TAXIWAY	TAXIWAY CUTOUTS
TAXIWAY LOAD DISCONNECT CUTOUT INPUT SIDE	INPUT
TAXIWAY LOAD DISCONNECT CUTOUT OUTPUT SIDE	LOAD DISCONNECT
TAXIWAY INTENTIONAL GROUND SWITCH CUTOUT	INTENTIONAL GROUND SWITCH
EACH CUTOUT ENCLOSURE (3 LEGEND PLATES)	CAUTION OPERATE CUTOUTS WITH CCR'S SHUT OFF
RADIO RELAY INTERFACE PANEL	RADIO RELAY INTERFACE PANEL
MANUAL TRANSFER SWITCH FOR RUNWAY 11-29 AND TAXIWAY NORMAL CCR AND SPARE/BACKUP CCR	TRANSFER SWITCH FOR RUNWAY 11-29 AND TAXIWAY CONSTANT CURRENT REGULATORS
MANUAL TRANSFER SWITCH FOR RUNWAY 11-29 AND TAXIWAY NORMAL CCR AND SPARE/BACKUP CCR - NORMAL SWITCH POSITION	NORMAL CCR
MANUAL TRANSFER SWITCH FOR RUNWAY 11-29 AND TAXIWAY NORMAL CCR AND SPARE/BACKUP CCR - BACKUP SWITCH POSITION	SPARE/BACKUP CCR

LEGEND PLATE SCHEDULE (CONTINUED)	
DEVICE	LABEL
LOW VOLTAGE WIREWAY (PROVIDE 6 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	LOW VOLTAGE
HIGH VOLTAGE WIREWAY (PROVIDE 6 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	HIGH VOLTAGE
VAULT GROUND BUS (PROVIDE 4 LEGEND PLATES 1/2" HIGH WHITE LETTERS GREEN BACKGROUND; INSTALL ABOVE OR BELOW GROUND BUS)	VAULT GROUND BUS
GROUNDING ELECTRODE CONDUCTORS TERMINATED ON VAULT GROUND BUS. (PROVIDE 3 LEGEND PLATES & SECURE TO CONDUCTORS WITH NYLON STRING OR CABLE TIES)	DO NOT DISCONNECT

DIRECTIONS TO TRANSFER RUNWAY 11-29 AND TAXIWAY LIGHTING FROM NORMAL CCR TO SPARE/BACKUP CCR.

- SHUT OFF INPUT POWER (CIRCUIT BREAKER) TO BOTH RWY 11-29 AND TAXIWAY CCR'S & TURN CCR SELECTOR SWITCHES TO OFF.
- OPERATE MANUAL TRANSFER SWITCH FOR RWY 11-29 AND TAXIWAY AND MOVE HANDLE FROM "NORMAL" POSITION TO "SPARE/BACKUP" POSITION.
- PULL CUTOUT HANDLE FROM NORMAL CCR UNIT & INSERT INTO SPARE CCR CUTOUT.
- GO TO RADIO RELAY INTERFACE PANEL & TURN "RWY 11-29 AND TAXIWAY CCR TRANSFER" SELECTOR SWITCH FROM "NORMAL" TO "SPARE" POSITION.
- TURN ON INPUT POWER (CIRCUIT BREAKER) TO SPARE RWY 11-29 AND TAXIWAY CCR.
- TURN SELECTOR SWITCH ON SPARE CCR TO "REMOTE" POSITION.

PROVIDE PLACARD OR LEGEND PLATE FOR RUNWAY CONSTANT CURRENT REGULATOR PAIR AS NOTED ABOVE: LETTERING TO BE MIN. 1/4" HIGH, BLACK ON WHITE BACKGROUND. LOCATE PLACARD ABOVE OR ADJACENT TO CUTOUT ENCLOSURE FOR RESPECTIVE RUNWAY.

RUNWAY 11-29 AND TAXIWAY CCR TRANSFER PROCEDURE PLACARD DETAIL



"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). PROVIDE MINIMUM OF 2 SIGNS (ONE ON EACH DOOR TO THE VAULT). SIGNS SHALL BE APPROXIMATELY 10" X 14" W.

NOTES:

- LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". LABELS SHALL BE HAZARD COMMUNICATION SYSTEMS, LLC (190 OLD MILFORD RD., BOX 1174, MILFORD, PA 18337, PHONE: 1-877-748-0244) PART NO. H6010-9VWHBJ OR APPROVED EQUAL.

DIRECTIONS TO TEST FOR AIRFIELD GROUND FAULTS IN LIGHTING CIRCUITS.

- TURN OFF RESPECTIVE CCR.
- TO TEST RUNWAY 11-29 LIGHTING, PULL THE LOAD DISCONNECT CUTOUT FOR THE TAXIWAY CIRCUIT. RUNWAY LOAD DISCONNECT TO REMAIN CONNECTED. GO TO STEP 4.
- TO TEST TAXIWAY LIGHTING, PULL THE LOAD DISCONNECT FOR THE RUNWAY 11-29 CIRCUIT. TAXIWAY LOAD DISCONNECT TO REMAIN CONNECTED. GO TO STEP 4.
- PULL INTENTIONAL GROUND SWITCH CUTOUT FOR THE RESPECTIVE CIRCUIT TO BE TESTED..
- TURN ON RESPECTIVE CCR TO 100%.
- IF GROUND FAULT LIGHT IS DIM CHECK AIRFIELD CIRCUIT FOR LOCATION OF BRIGHT TO DIM LIGHTS TO ASSIST IN LOCATING AREA OF GROUND FAULT.

PROVIDE PLACARD OR LEGEND PLATE FOR GROUND FAULT TESTING PROCEDURE. LETTERING TO BE MIN. 1/4" HIGH BLACK ON WHITE BACKGROUND. LOCATE PLACARD IN REGULATOR ROOM, COORDINATED WITH AIRPORT MAINTENANCE STAFF AND RESIDENT ENGINEER.

GROUND FAULT TESTING PLACARD DETAIL



"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR EACH CUTOUT ENCLOSURE, EACH CONSTANT CURRENT REGULATOR, AND THE HIGH VOLTAGE WIREWAY, TO COMPLY WITH FAA AC 150/5340-26B "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES". LABELS SHALL BE APPROXIMATELY 4" X 6" OR 5" X 7".

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Illinois Licensed
 Professional Service Corporation
 #184-001084



Schaumburg Regional Airport
 905 Irving Park Road
 Schaumburg, IL 60193
 Phone: 847-923-3863

REHABILITATE AIRFIELD LIGHTS

IDA No: 06C-4161
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LEGEND PLATE SCHEDULES



REHABILITATE AIRFIELD LIGHTS

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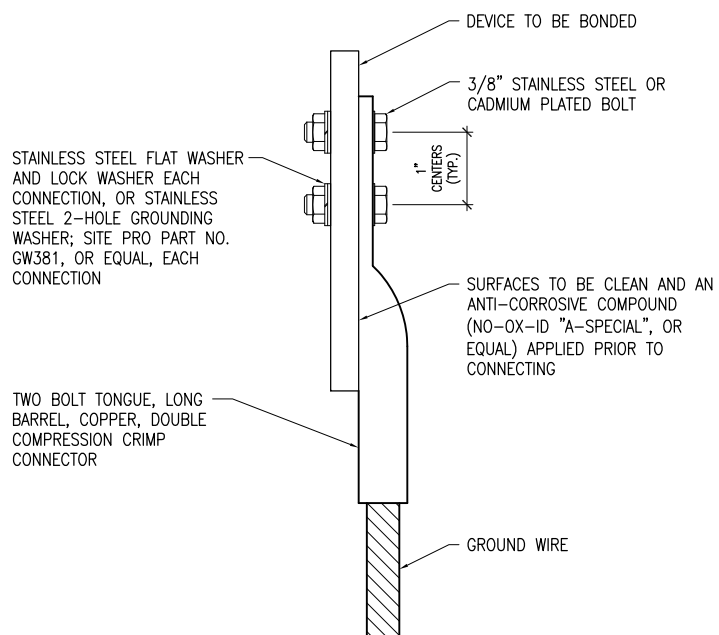
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GROUNDING DETAILS

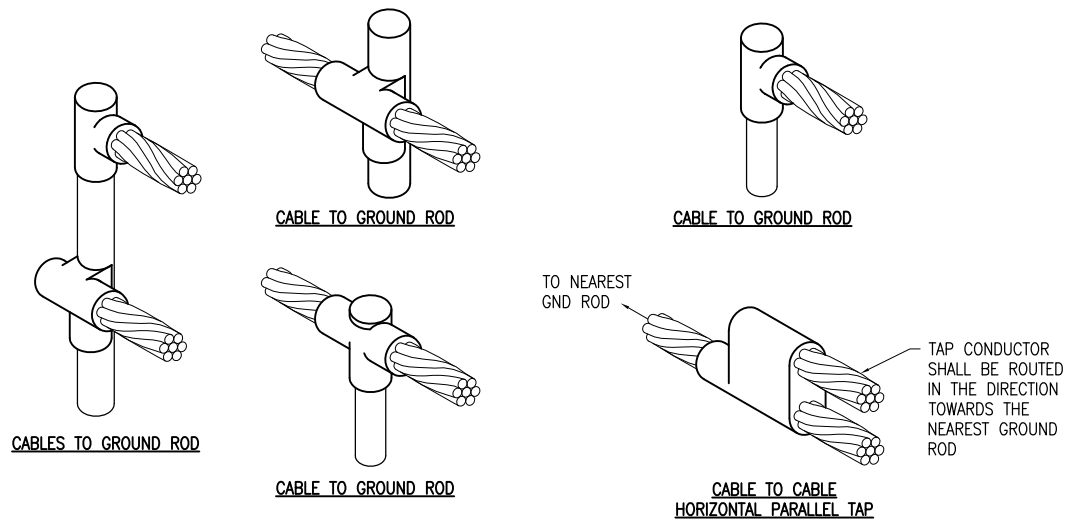


WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38

NOTES

- ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
- GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
- GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC APTH FROM ENCIRCLING THE CONDUIT.
- ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

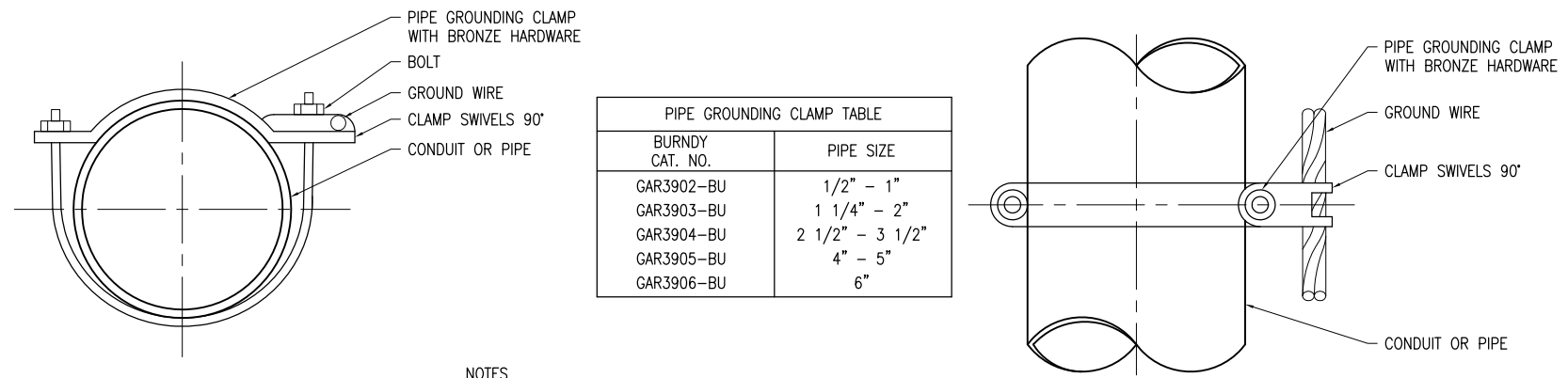
GROUNDING LUG CONNECTION DETAIL



DETAIL NOTES

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA, OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

EXOTHERMIC WELD DETAILS

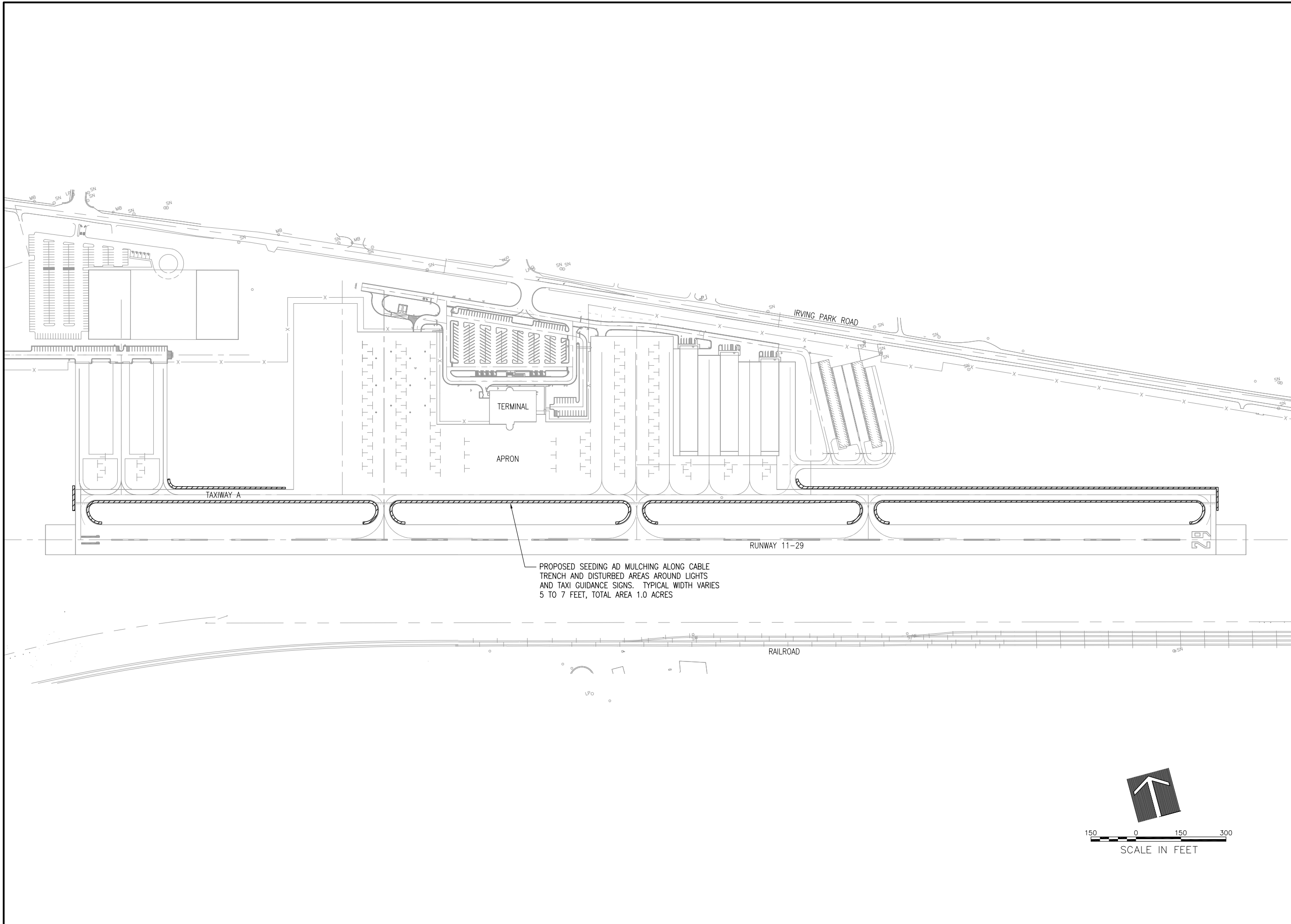


BURNDY CAT. NO.	PIPE SIZE
GAR3902-BU	1/2" - 1"
GAR3903-BU	1 1/4" - 2"
GAR3904-BU	2 1/2" - 3 1/2"
GAR3905-BU	4" - 5"
GAR3906-BU	6"

NOTES

- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL467 LISTED.

PIPE/CONDUIT GROUNDING CLAMP DETAIL



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**REHABILITATE
AIRFIELD LIGHTS**

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