

SEP 16, 2025 11:59 AM CRAFT0387
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SUMMARY OF QUANTITIES - BASE BID				
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AR108108	1/C #8 5 KV UG CABLE	FOOT	1,500	
AR109100	CONSTRUCT ELECTRICAL VAULT	L SUM	1	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L SUM	1	
AR115610	ELECTRICAL HANDHOLE	EACH	2	
AR115710	ELECTRICAL MANHOLE	EACH	1	
AR150510	ENGINEER'S FIELD OFFICE	L SUM	1	
AR150520	MOBILIZATION	L SUM	1	
AR800541	4-WAY, 2" PVC DUCT BANK, DIR. BUR.	FOOT	160	
AR800542	6-WAY, 2" PVC DUCT BANK, DIR. BUR.	FOOT	45	
AR800564	CABLE AND CCR TESTING AND CALIBRATION	L SUM	1	

SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE NO. 1				
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AS109901	REMOVE ELECTRICAL VAULT	L SUM	1	
AS109924	REPLACE ELECTRIC SERVICES	L SUM	1	

GENERAL NOTES

- THE PROJECT PAY ITEMS ARE INTENDED TO BE INCLUSIVE OF ALL WORK TO BE PERFORMED AS SHOWN IN THESE PLANS. ALL INCIDENTAL WORK REQUIRED TO COMPLETE THE PROJECT TO THE SATISFACTION OF THE RESIDENT ENGINEER IS TO BE INCLUDED IN THE COSTS OF PERFORMING THESE ITEMS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL,EQUIPMENT, AND TRANSPORTATION NECESSARY TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS DESCRIBED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.
- THE RULES, REGULATIONS, AND SPECIFICATIONS ENUMERATED HEREIN SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS. THEY SHALL NOT PROHIBIT THE CONTRACTOR FROM FURNISHING AND INSTALLING HIGHER GRADES OF MATERIAL THAN ARE SPECIFIED HEREIN, IF APPROVED BY THE ENGINEER.
- ACCESS TO THE SITE SHALL BE RESTRICTED EXCLUSIVELY TO THE DESIGNATED CONSTRUCTION ENTRANCE, STAGING AREA, AND HAUL ROUTE. NO EQUIPMENT OR PERSONNEL SHALL BE PERMITTED OUTSIDE THE GENERAL PROJECT AREA.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AND KEEP CLEAN OF DEBRIS ALL EXISTING AIRFIELD AND ROADWAY PAVEMENTS AT ALL TIMES. ANY DAMAGE TO EXISTING ELECTRICAL, DRAINAGE, AND PAVEMENT STRUCTURES SHALL BE IMMEDIATELY REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
- CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN RESTROOM FACILITIES.
- THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL FOR ALL SALVAGEABLE MATERIAL REMOVED ON THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS FOR HAULING ON PUBLIC ROADS, AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES TO ANY PAVEMENTS (PUBLIC OR PRIVATE) CAUSED BY HIS/HER CONSTRUCTION EQUIPMENT OR PERSONNEL.
- THE CONTRACTOR SHALL PROVIDE ONE SET OF PRELIMINARY REDLINED RECORD DRAWINGS TO THE RESIDENT ENGINEER AT THE COMPLETION OF THE PROJECT FOR INCORPORATION INTO THE OFFICIAL RECORD DRAWINGS HE WILL PREPARE.
- APPROXIMATE LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN THROUGHOUT THESE PLANS. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND PROTECT THESE UTILITIES DURING CONSTRUCTION. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE PROPER AUTHORITIES FOR THE PURPOSE OF LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL PROVIDE ALL LAYOUT NEEDS, BOTH VERTICALLY AND HORIZONTALLY.
- ALL REQUESTS FOR INFORMATION SHALL BE PROVIDED IN WRITING AND ALL DIRECTIVES SHALL BE RECEIVED IN WRITING.
- CHANGES TO THE PROJECT SHALL NOT BE INCORPORATED INTO THE PROJECT UNTIL EXPRESSLY APPROVED BY THE ENGINEER.
- NPDES PERMIT - THIS PROJECT WILL NOT DISTURB MORE THAN 1 ACRE, THEREFORE A NPDES PERMIT IS NOT REQUIRED.
- MATERIAL CERTIFICATIONS - MATERIALS CANNOT BE INSTALLED UNTIL ALL THE MATERIAL CERTIFICATIONS FOR THAT ITEM HAVE BEEN RECEIVED, REVIEWED AND ACCEPTED BY THE RESIDENT ENGINEER. MATERIALS INSTALLED WITHOUT APPROVAL ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- CERTIFIED PAYROLLS - PAY APPLICATIONS CANNOT BE PROCESSED FOR PAYMENT UNTIL ALL CERTIFIED PAYROLLS FOR THAT PERIOD HAVE BEEN RECEIVED.

UTILITY NOTE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE 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 DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

J.U.L.I.E. INFORMATION

COUNTY_____MONTGOMERY
CITY_____LITCHFIELD
TOWNSHIP_____SOUTH LITCHFIELD
SECTION NO.____5 & 8
ADDRESS_____LITCHFIELD MUNICIPAL AIRPORT
1201 US ROUTE 66
LITCHFIELD, IL 62056

INDEX OF SHEETS	
SHEET NO.	SHEET TITLE
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND INDEX OF SHEETS
3	SITE AND SAFETY PLAN
4	SITE AND SAFETY PLAN NOTES - SHEET 1
5	SITE AND SAFETY PLAN NOTES - SHEET 2
6	ELECTRICAL LEGEND AND ABBREVIATIONS
7	AIRFIELD LIGHTING NOTES
8	EXISTING ELECTRICAL SITE PLAN AT VAULT AREA
9	EXISTING ELECTRICAL ONE-LINE FOR VAULT SHEET 1
10	EXISTING ELECTRICAL ONE-LINE FOR VAULT SHEET 2
11	EXISTING HIGH VOLTAGE WIRING SCHEMATIC
12	PROPOSED ELECTRICAL SITE PLAN AT VAULT AREA
13	NEW VAULT BUILDING GENERAL NOTES
14	NEW VAULT BUILDING PLAN
15	NEW VAULT BUILDING ELEVATIONS
16	NEW VAULT BUILDING SECTIONS AND DETAILS
17	NEW VAULT BUILDING NOTES
18	NEW VAULT ELECTRICAL EQUIPMENT PLAN
19	NEW VAULT LIGHTING AND RECEPTACLE PLAN
20	NEW VAULT FIRE DETECTION AND ALARM PLAN
21	NEW VAULT WALL ELEVATIONS - SHEET 1
22	NEW VAULT WALL ELEVATIONS - SHEET 2
23	AIRFIELD LIGHTING CABLE SPLICE DETAILS
24	CONDUIT TRENCH DETAIL
25	CABLE AND DUCT MARKER DETAILS
26	HANDHOLE AND SPLICE CAN DETAILS
27	4'X4'X4' ELECTRICAL MANHOLE DETAILS
28	ELECTRICAL NOTES SHEET 1
29	ELECTRICAL NOTES SHEET 2
30	GROUNDING DETAILS SHEET 1
31	GROUNDING DETAILS SHEET 2
32	GROUNDING DETAILS SHEET 3
33	GROUNDING DETAILS SHEET 4
34	GROUND RESISTANCE TESTING DETAILS
35	GROUNDING NOTES
36	PROPOSED ELECTRICAL ONE LINE FOR VAULT SHEET 1
37	PROPOSED ELECTRICAL ONE LINE FOR VAULT SHEET 2
38	PROPOSED ELECTRICAL ONE LINE FOR VAULT SHEET 3
39	VAULT PANELBOARD SCHEDULES
40	AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC
41	CONTROL PANEL #1 FOR AIRFIELD NAVAIDS SCHEMATIC
41	CONTROL PANEL #1 FOR AIRFIELD NAVAIDS SCHEMATIC
43	CONTROL PANEL #1 FOR NAVAIDS & EXHAUST FAN
43	CONTROL PANEL #1 FOR NAVAIDS & EXHAUST FAN
44	CONTROL PANEL #2 FOR AIRFIELD NAVAIDS SCHEMATIC
45	CONTROL PANEL #2 FOR NAVAIDS
47	PROPOSED HIGH VOLTAGE WIRING SCHEMATIC RWY 9-27 & B TWYS
48	SERIES CIRCUIT CABLE TESTING DETAILS
49	VAULT GROUND BUS RISER
50	LEGEND PLATE SCHEDULES SHEET 1
51	LEGEND PLATE SCHEDULES SHEET 2
52	LEGEND PLATE AND SIGNAGE SCHEDULES SHEET 3



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#184-001084

LITCHFIELD
MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: G-002-FLP.DWG

DESIGN BY: KNL 07/16/2025

DRAWN BY: AJC 07/23/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

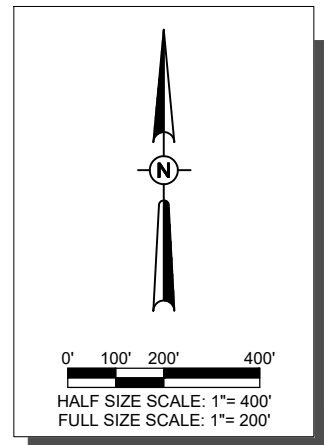
SUMMARY OF
QUANTITIES AND
INDEX OF SHEETS









FOR BID

1. SCOPE OF WORK: THE "REPLACE AIRPORT LIGHTING VAULT" PROJECT WILL INCLUDE CONSTRUCTION OF A NEW AIRPORT ELECTRICAL VAULT, ALONG WITH ASSOCIATED SITE WORK, DUCT WORK, RACEWAYS, JUNCTION STRUCTURES, HANDHOLES, CABLING, AND INCIDENTALS TO INTERFACE EXISTING AIRFIELD LIGHTING CABLES, NAVAID CABLES, AND OTHER CABLES TO THE NEW VAULT.

THE ADDITIVE ALTERNATE BID CONSISTS OF REMOVAL OF THE EXISTING AIRPORT ELECTRICAL VAULT BUILDING AND REPLACEMENT OF EXISTING ELECTRICAL SERVICE. THE DETAILS OF THE LATTER ITEM ARE REFLECTED ON PLAN SHEET "PROPOSED ELECTRICAL ONE LINE FOR VAULT SHEET 1".
2. THE "REPLACE AIRPORT LIGHTING VAULT" PROJECT SHOULD NOT REQUIRE RUNWAY CLOSURES NOR TAXIWAY CLOSURES. THE PROJECT WILL REQUIRE TEMPORARY SHUT DOWN OF RUNWAY LIGHTING, TAXIWAY LIGHTING, AND LIGHTED NAVAIDS TO ACCOMMODATE TRANSFER OF POWER AND CONTROL FROM THE EXISTING VAULT TO THE NEW AIRPORT ELECTRICAL VAULT. SHUT DOWN PERIODS FOR RUNWAY LIGHTING, TAXIWAY LIGHTING AND LIGHTED NAVAIDS SHALL NOT EXCEED 72 HOURS UNLESS OTHERWISE COORDINATED IN ADVANCE WITH AND APPROVED BY THE AIRPORT MANAGER. COORDINATE ANY DOWNTIME WITH AIRPORT MANAGER A MINIMUM OF 72 HOURS IN ADVANCE.
3. THE LITCHFIELD AIRPORT IS A NON-TOWER CONTROLLED GENERAL AVIATION AIRPORT COMPRISED OF TWO PAVED RUNWAYS AND THE ASSOCIATED PARALLEL TAXIWAYS.
4. IDENTIFICATION - WHEN THE CONTRACTORS VEHICLES AND EQUIPMENT ARE ON THE AIRPORT PROPERTY THEY SHALL BE PROPERLY MARKED WITH THREE (3') FOOT SQUARE CHECKERED FLAGS (INTERNATIONAL ORANGE AND WHITE). THE CONTRACTOR WILL ALSO PROVIDE WORKERS WITH SOME TYPE OF TAG OR GARMENT TO IDENTIFY THE PERSON AS BEING PART OF THE CONSTRUCTION CREW.

5. RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT (122.800 MHz) WITH THE AIRPORT UNICOM WHEN ON THE AIRFIELD. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE LITCHFIELD AIRPORT AND ENABLE THE AIRPORT TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTIC EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS/HER PERSONNEL.
6. AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. ONLY CONTRACTOR EMPLOYEES SHALL BE ALLOWED WITHIN THE PROJECT LIMITS. GATES SHALL BE CLOSED AT ALL TIMES UNLESS THE CONTRACTOR IS IN A CONTINUOUS HAULING OPERATION, DURING WHICH TIME HE/SHE WILL PROVIDE A PERSON TO MONITOR THE GATE AREA.
7. THE CONTRACTOR WILL USE THE AIRPORT ENTRANCE ROAD FOR ACCESS TO THE PROPERTY AT THE DESIGNATED HAUL ROUTE. THE CONTRACTOR SHALL PARK EQUIPMENT AND PLACE MATERIALS WITHIN THE LIMITS OF THE SUBJECT PROPERTY. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED HAUL ROUTE AND SUBJECT PROPERTY THROUGHOUT THE COURSE OF THE PROJECT. ANY AREAS DAMAGED OUTSIDE OF THESE AREAS WILL BE REPAIRED BY THE CONTRACTOR AND AT THE CONTRACTOR'S OWN EXPENSE. AT THE CONCLUSION OF THE PROJECT THE CONTRACTOR WILL RESTORE THE HAUL ROUTE AND PARKING AREA TO ITS ORIGINAL STATE. RESTORATION OF THE HAUL ROUTE AND ANY AREAS USED FOR PARKING WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
8. ALL CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED, AND/OR FLAGGED IN ACCORDANCE WITH AC 150/5210-5 (CURRENT EDITION) AND 70/7460-1 (CURRENT EDITION).

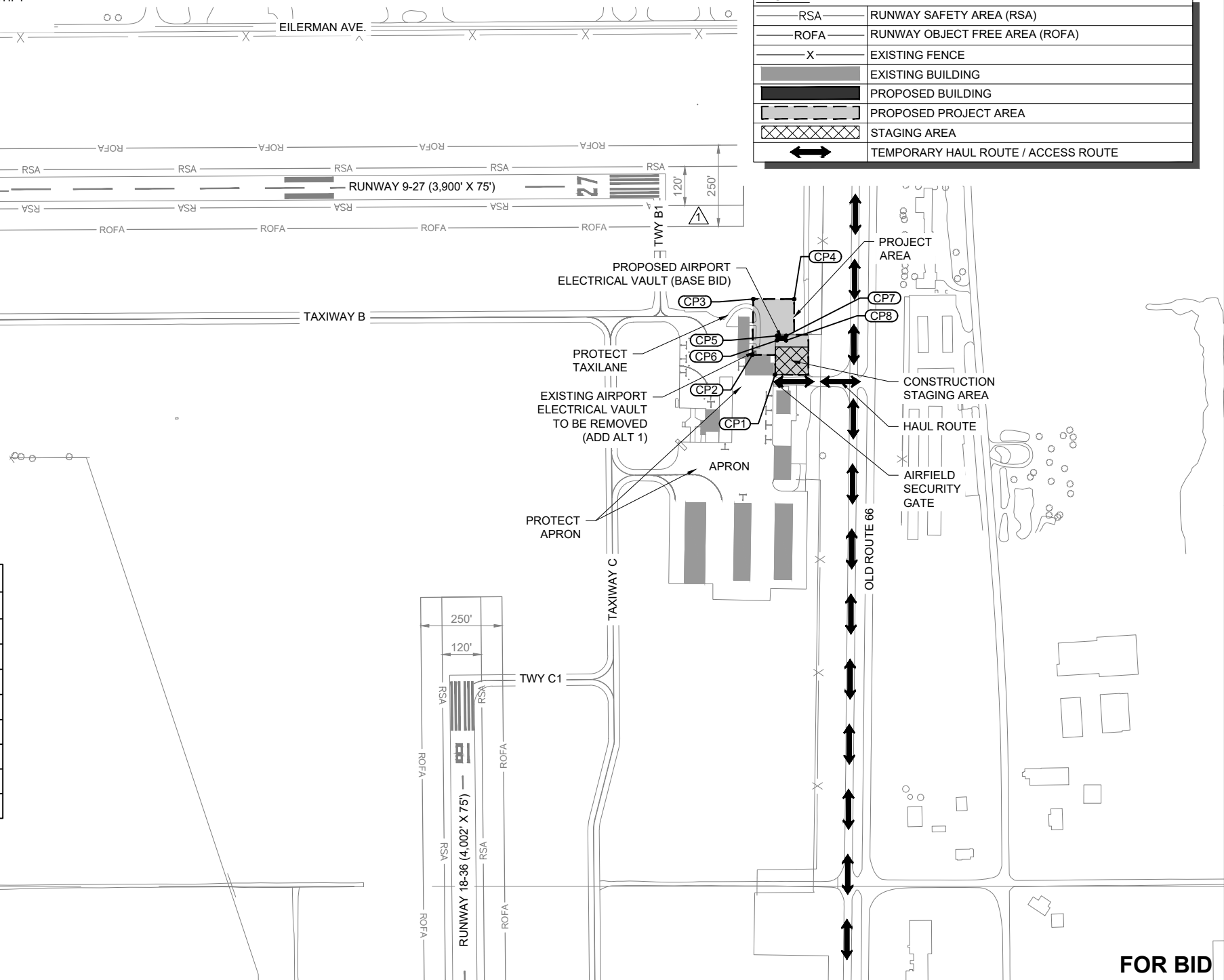


LEGEND	
	RUNWAY SAFETY AREA (RSA)
	RUNWAY OBJECT FREE AREA (ROFA)
	EXISTING FENCE
	EXISTING BUILDING
	PROPOSED BUILDING
	PROPOSED PROJECT AREA
	STAGING AREA
	TEMPORARY HAUL ROUTE / ACCESS ROUTE

SURVEY CONTROL POINTS				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
①	"LITPORT" PID: KB1561	910,877.6	2,437,462.5	688.5'
②	"LITPORT" AZ MK PID: KB1562	910,853.9	2,433,591.4	679.7'

CONSTRUCTION POINTS					
POINT #	DESCRIPTION	LATITUDE	LONGITUDE	GROUND (MSL)	HEIGHT (AGL)
1	CONSTRUCTION EQUIPMENT 1	039° 09' 56.73"	-089° 40' 08.22"	686.5'	25'
2	CONSTRUCTION EQUIPMENT 2	039° 09' 57.34"	-089° 40' 09.10"	687.0'	25'
3	CONSTRUCTION EQUIPMENT 3	039° 09' 59.03"	-089° 40' 09.05"	687.0'	25'
4	CONSTRUCTION EQUIPMENT 4	039° 09' 59.02"	-089° 40' 07.46"	685.8'	25'
5	PROPOSED BUILDING	039° 09' 57.91"	-089° 40' 08.14"	XXX.X'	13'
6	PROPOSED BUILDING	039° 09' 57.77"	-089° 40' 08.14"	XXX.X'	13'
7	PROPOSED BUILDING	039° 09' 57.91"	-089° 40' 07.78"	XXX.X'	13'
8	PROPOSED BUILDING	039° 09' 57.77"	-089° 40' 07.78"	XXX.X'	13'

1. ALL COORDINATE VALUES SHOWN ARE BASED ON HARN/IL ILLINOIS STATE PLANS COORDINATE SYSTEM, WEST ZONE. ALL ELEVATIONS ARE REFERENCED TO NAVD 88.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT AND ANY EXTENSION OF THE CONTROL NETWORK NEEDED TO PROPERLY COMPLETE THE WORK.



FOR BID

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



DATE SIGNED: 9/12/2025

LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TB

		DATE			
			DES	DWN	REV
NO.	DATE	DESCRIPTION			
		DES	DWN	REV	

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DRAWN BY: AJC 07/23/2025
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

SITE AND SAFETY PLAN

SAFETY NOTES

1.

ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN. ANY FURTHER MODIFICATIONS REQUESTED MUST BE APPROVED BY THE AIRPORT, RESIDENT ENGINEER/TECHNICIAN AND THE FAA.
2.

THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE CONSTRUCTION SAFETY AND PHASING PLAN SHEETS.
3.

NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE AIRPORT MANAGER RESERVES THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
4.

NO CONSTRUCTION VEHICLES SHALL BE DRIVEN ACROSS ANY ACTIVE AIRFIELD PAVEMENT AREA WITHOUT AN APPROPRIATE ESCORT. CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL NOT BE PERMITTED WITHIN 125' OF ANY ACTIVE RUNWAY CENTERLINE OR WITHIN 62' OF ANY OTHER ACTIVE AIRPORT TAXIWAY CENTERLINE OR APRON.
5.

CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
6.

ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
7.

NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 125' OF ANY ACTIVE RUNWAY, WITHIN 62' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE RESIDENT ENGINEER/TECHNICIAN) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
8.

CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION", LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
9.

OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
10.

NO CONSTRUCTION EQUIPMENT GREATER THAN 25' TALL WILL BE PERMITTED ON THE AIRPORT WITHOUT THE APPROVAL OF THE AIRPORT MANAGER AND ADDITIONAL AIRSPACE APPROVAL BY THE FAA. AIRSPACE APPROVALS REQUIRE CONSIDERABLE LEAD TIME AND SHOULD BE REQUESTED WELL IN ADVANCE.
11.

NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER NO FLARE POTS ARE ALLOWED ON THE PROJECT.
12.

SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEPED, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
13.

CONTRACTOR SHALL TAKE MEASURES TO AVOID TRACKING ASPHALT MATERIALS ONTO ADJACENT PAVEMENT AREAS, UNLESS SUFFICIENT PROTECTION HAS BEEN APPLIED. HEAVY TRACKING OR DAMAGE TO ADJACENT PAVEMENTS MAY BE CAUSE FOR STOPPING THE WORK UNTIL ACCEPTABLE PROTECTION OR CHANGE IN WORK METHODS HAS BEEN PROVIDED.
14.

EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND RESIDENT ENGINEER/TECHNICIAN. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS. STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
15.

ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.

16.

CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE RESIDENT ENGINEER/TECHNICIAN.
17.

CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
18.

THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
19.

CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
20.

CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN.
21.

CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
22.

THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
23.

THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING MEASURES TO CONTROL OR AVOID CREATING ATTRACTANTS TO WILDLIFE. MEASURES MAY INCLUDE CONTINUOUSLY REMOVING ANY WASTE OR LOOSE MATERIALS, PLACEMENT OF MATERIALS IN APPROPRIATE STORAGE CONTAINERS, PROPERLY MAINTAINING FENCES AND GATES TO PREVENT ACCESS, AND PREVENTING PONDING OF WATER THROUGHOUT THE SITE.
24.

UNLESS SPECIFIED OTHERWISE, COST FOR SAFETY, STAGING, AND TRAFFIC MAINTENANCE ITEMS IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.
25.

THE CONTRACTOR SHALL HAVE THE SAFETY PLAN COMPLIANCE DOCUMENT (SPCD), AS DETAILED IN THE SPECIAL PROVISIONS, SUBMITTED AND APPROVED PRIOR TO BEING ISSUED "NOTICE TO PROCEED".



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Professional Service Corporation
#184-001084

LITCHFIELD
MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



Kevin N. Lightfoot

DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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DESIGN BY: KNL 07/16/2025

DRAWN BY: AJC 07/23/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

SITE AND SAFETY
PLAN NOTES - SHEET
1

FOR BID

SEP 16, 2025 11:59 AM CFA4T02387
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INTRODUCTION

The purpose of this document is to provide information concerning project operational safety at the airport during the Project and supplements the information in the contract documents. The Construction Safety and Phasing Plan (CSPP) addresses only those safety issues particular to airport operational environments. It is not a comprehensive construction safety document, and the Contractor should not rely upon it as such. Nothing contained in this plan waive the duty of the Contractor to employ adequate and proven safety practices.

The awarded Contractor must, after review of the CSPP and prior receiving a Notice to Proceed, prepare and submit a Safety Plan Compliance Document (SPCD) in accordance with FAA AC 150/5370-2G (or current issue). The document must include a statement affirming that the Contractor has read and will abide by this Construction Safety and Phasing Plan (CSPP). In addition, it must include supplemental information that was included by addendum during the bidding process, that could not be included prior to bid award and/or that is needed to clarify or emphasize specific Contractor safety measures.

PROJECT DESCRIPTION

The "Replace Airport Lighting Vault" project will include construction of a new airport electrical vault, along with associated site work, duct work, raceways, junction structures, handholes, cabling, and incidentals to interface existing airfield lighting cables, NAVAID cables, and other cables to the new vault.

SECTION 1. COORDINATION

a. Preconstruction Conference: A preconstruction conference will be held prior to issuing a Notice to Proceed. At a minimum, required attendees will include The Airport Manager, IDOT personnel, Engineer, construction administration personnel, construction observation staff, project superintendent and foreman for the prime contractor. The preconstruction conference will include an agenda item for review of the CSPP and the contractor's SPCD and other required provisions.

b. Construction Progress Meetings: Progress meetings will be held on a weekly or bi-weekly basis throughout the duration of the project. Additional meetings will be held when requested by the Owner/Airport, Engineer, or contractor. At a minimum, attendees will include the Airport Manager, Engineer, construction administration personnel, and project superintendent for the prime contractor.

c. Contacts: During the Preconstruction conference the Owner/Airport Staff, Contractor, and Engineer shall each designate a representative for project safety matters.

d. Scope or Schedule Changes: The Contractor shall submit to the Engineer a schedule detailing the various activities necessary to accomplish the project. The contractor shall submit an updated schedule and discuss scheduling of construction at each construction progress meeting. The contractor is required to coordinate safety and phasing issues arising from scope or schedule changes with the airport and its designated representatives. Changes in scope or schedule may necessitate revisions to this CSPP and require review and approval by the Owner and the FAA.

Following are the general safety plan objectives that must be achieved in order to maximize both Contractor and airport safety and to minimize time and economic loss to the aviation community, the construction Contractor and others directly affected by the project.

- (a) Maintain Safety of aircraft operations.
- (b) Minimize aircraft operation/construction activity conflicts.
- (c) Keep the airport operational for all user aircraft.
- (d) Minimize delays to aircraft operations.
- (e) Minimize delays to construction operations.

The Contractor should keep these objectives in mind when formulating his project work schedules and operational activities.

SECTION 2. PHASING

This project occurs outside of the Airport Operations Area (AOA) of the airport and will not require runway nor taxiway closures. All work can be completed in one phase.

The contractor shall submit a project construction schedule and phasing plan for the work a minimum of seven (7) days prior to the preconstruction conference. The contractor's phasing plan will be reviewed at the preconstruction conference and at each regular construction progress meeting.

SECTION 3. AREAS AND OPERATIONS AFFECTED BY CONSTRUCTION

The Construction Safety and Phasing Plan (CSPP) Sheets included in this section and as part of the Construction Plans for the project depict the areas that will be affected by the construction activities.

At no time may the contractor work inside the Aircraft Operations Area (AOA) while it is active. Any work done inside this area will require temporary closure of the runway. The AOA is governed by the Runway Obstacle Free Zone (OFZ) to a width of 125' from the runway centerline, and the threshold siting surface (TSS) starting at each runway end and rising at a slope of 20:1.

In areas where it is necessary to move equipment or personnel through the active AOA for site access, the contractor shall provide an escort in two-way radio contact with the airport Unicom (122.8 MHz).

All equipment must be lowered when not in use or in transit and may not be left within 125' of the runway centerline, extended.

The contractor shall not enter any airport areas outside of the designated work areas.

SECTION 4. NAVAID PROTECTION

The project is located in the area of the Runway Navigational Aids (NAVAIDS). The project is in the vicinity of the existing airfield lighting circuits, REILs circuits, and the PAPIs circuits. The Contractor shall take special care to avoid damaging these facilities and shall promptly report any damage to the construction observation staff and the Airport Manager. The contractor shall promptly repair any damage caused to these facilities. Coordinate with the Airport Manager to temporarily shut down runway lighting, taxiway lighting, and lighted NAVAIDS to accommodate transfer of power and control from the existing vault to the new airport electrical vault.

SECTION 5. CONTRACTOR ACCESS

a. Location of Stockpiled Construction Materials: The Contractor is limited to the placement of stockpiled materials at the locations shown or noted within the construction documents. Stockpiles shall have height limits of 15 feet unless otherwise noted on the plans. Contractor shall manage stockpiles and maintain positive drainage so they do not become wildlife attractions or create foreign object debris (FOD.)

b. Vehicle and Pedestrian Operations:

1. Contractor Staging Area: The Owner has designated materials storage and equipment staging areas on the airport site as indicated on the plans for the Contractors' utilization during construction work activities. The Contractor shall use this area for temporary storage of materials and supplies, the overnight parking, servicing, fueling and repair of equipment, field offices, sanitary facilities, employee parking and other project work activities. No other area of the airport shall be used for such Contractor purposes.

The Contractor shall be responsible for costs of electrical, telephone, and other services to these staging areas (if needed), as well as any locally required building construction or temporary use permits. Since on-site water or sewer utilities are not available, the Contractor shall provide suitable quantity of potable drinking water and temporary sanitary-latrine units to accommodate the needs of Contractor's personnel, visitors, and other project parties within the staging area.

All on-site Contractor equipment shall meet and be safely operated in accordance with applicable local, state and federal environmental regulations.

The Contractor shall not park equipment nor store supplies and materials in any portion of the runway and taxiway, safety areas, object free areas or approach/departure surfaces. When work is required within these critical operational areas, the Contractor's equipment and vehicles, supplies and materials shall be parked and easily transportable so that they may be quickly removed to accommodate aircraft operations. Such work activities shall be under the direct control of radio-equipped monitors and signalmen, as outlined in this document.

2. Access and Haul Roads: The construction plans depict the site access and haul routes from public roadways and haul routes to the respective work areas. The Contractor shall not deviate from these haul routes, and shall perform such maintenance work, including dust control for unpaved facilities, as necessary to keep them in usable condition at all times. Any/all damage to existing pavements or turf areas within these designated haul routes caused by the Contractor's activities shall be repaired to original or better condition at the Contractor's expense.

Contractor employee personal vehicles may not be parked or driven in the AOA. Parking areas for Contractor employees will be in the areas designated on the plans or otherwise designated by the Airport Manager.

Following completion, haul routes shall be restored to original or better condition at no cost to the Owner.

3. Marking and Lighting of Vehicles: All Contractor vehicles and construction equipment working on the airport airside of the project fencing, barricaded or staked limits during daylight hours, shall be equipped with a flag on a staff attached so that the flag is readily visible atop the highest portion of the machine. The flag shall be at least 3-foot square having a checkered pattern comprised of International Orange and white squares at least 1 foot on each side.

Vehicles and equipment operating at night on the airport's airside of the project fencing, barricaded or staked limits, shall be equipped with appropriately sized, flashing, or steady-burning yellow beacons, mounted on the uppermost part of the vehicle or machines so as to be conspicuous from any and all directions, including the air.

Marking and lighting of vehicles shall be in accordance with FAA AC 150/5310-5D (or current issue).

Contractor vehicles operating inside the airport security fence shall be identified with company logos or insignias.

Any and all vehicles not routinely operating on the airport shall be escorted by appropriately flagged and/or lighted vehicles.

c. Two-Way Radio Communications: In areas where it is necessary to move equipment or personnel through the active AOA for site access, the contractor shall provide an escort in two-way radio contact with the airport Unicom (122.8 MHz).

d. Airport Security: Airport access airside of the airport security fencing, which defines the Airport Operations Area (AOA) shall be limited to appropriate Contractor vehicles. Access shall be through the security gate identified on the plans. Security gates shall remain closed and locked at all times, except when used for actively accessing the site, at which time they shall be secured by dedicated contractor personnel. All project visitors, materials deliveries and other parties traveling airside of the project fenced, barricaded or staked work areas shall be escorted by contractor personnel. No unauthorized persons or unescorted personnel shall be allowed to enter the airport.

SECTION 6. WILDLIFE MANAGEMENT

Wildlife, and especially birds, can pose serious hazards to flight safety. During construction, the Contractor shall minimize or eliminate to the extent practicable those activities that will attract wildlife to the AOA. The following minimum steps shall be taken during construction.

a. Trash: Do not leave food, empty food containers, or litter on the project site. Also, do not leave these items in open vehicle areas such as truck beds.

b. Standing Water: The Contractor shall avoid generating areas of standing water. As necessary, the Contractor shall provide temporary drainage to all standing water as generated by construction activities.

c. Tall Grass and Seeds: The Contractor shall be required to establish a uniform stand of grass on all disturbed areas resulting from construction activities, to the satisfaction of the Airport Manager. Airport personnel are responsible for mowing the airfield outside of the construction limits.

d. Poorly Maintained Fencing and Gates: The Contractor shall ensure access gates remain securely closed at all times when not in use.

e. Disruption of Existing Wildlife Habitat: If construction activities disrupt wildlife that may pose a safety risk to aircraft operations, the Contractor shall notify the Airport Manager.

SECTION 7. FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT

Pavements within and adjacent to the project site shall be kept free of all debris, dirt, waste, etc., at all times. Accidental spills of dirt, excavation, or other materials shall be cleaned up immediately by the Contractor. The contractor will be required to continuously clear the project site of any and all debris capable of being blown by wind onto active airfield areas.

Dust control measures during grading and hauling operations shall be implemented by the Contractor to assure that aircraft operations, safety and visibility are not impaired, nor a nuisance result from such construction work. If required by the Airport, the Contractor will provide a water truck to control dust. Waste disposal areas are not available on the airport site; therefore, the Contractor shall safely remove and transport all waste materials to an off-site, approved disposal site or landfill.

SECTION 8. HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT

The Contractor should be adequately prepared to contain and cleanup spills resulting from fuel or hydraulic fluid leaks from vehicles or equipment utilized on the project. Special care must be taken when handling or transporting hazardous materials on airport property. Should the Contractor encounter unlabeled drums, materials with evident petroleum contamination, or other potentially significant or hazardous materials he shall immediately take measures to protect workers and nearby residents from exposure. The Contractor shall notify the Airport Manager, Engineer and the appropriate Hazardous Materials (HAZMAT) response team. The Engineer will issue instructions on proceeding with construction in unaffected areas or suspending all construction after such notification. If contamination is the fault of the Contractor the Contractor shall bear all costs associated therewith.

SECTION 9. NOTIFICATION OF CONSTRUCTION ACTIVITIES

a. List of responsible representatives/points of contact: A list of designated representatives/points of contact shall be completed an included as part of the Contractor's SPCD. At a minimum, contact information shall be included for the Airport Manager, Engineer, construction administration/observation staff, MoDOT, contractor's superintendent, contractor's foreman, and foreman for any subcontractors performing work on the airport. Contact information shall include phone numbers that can be reached 24 hours a day.

b. Notices to Airmen (NOTAM): NOTAM's are issued by the local or nearest FAA Flight Service Station when airport conditions exist that could adversely affect the safety of aircraft operations, such as construction activities which require closure of all or parts of airport facilities, rough pavement, weather-caused effects, bird hazards, obstructions, etc.

The Airport Manager is responsible for filing NOTAM's with the FAA. The Contractor shall cooperate fully with the Airport Manager, providing at least 48 hour advance notice regarding any project activities which require a NOTAM, furnishing pertinent information on effective date, dimensions and elevations, sketches or drawings, reason/cause of action, etc. He shall also advise the Airport Manager when the airport conditions and/or situations have been imposed to a point where NOTAM's may be canceled. Any questions concerning NOTAM coordination, scheduling of work, safety procedures, etc. should be resolved with the Airport Manager or Engineer prior to construction.

c. Emergency Notification Procedures: In the event of an emergency, the Contractor shall call 911 and also notify the Airport Manager and the Engineer. The Contractor shall include non-emergency contact information for local police, fire, and medical as part of the points of contact list included in the SPCD.

d. Notification to the FAA: The Engineer has submitted anticipated construction equipment heights and locations for airspace review by IDOT/FAA. Limitations on height and locations of construction equipment are detailed on the CSPP drawing sheet. The Contractor shall notify the Airport Manager and the Engineer if any deviations from approved airspace submittal are required. The Contractor will not be permitted deviate from the approved airspace submittal until FAA approval is received.

SECTION 10. INSPECTION REQUIREMENTS

a. Daily Inspections: The Airport Manager and Contractor will conduct daily safety inspections to ensure compliance with the CSPP. If significant safety issues are observed or reported at other times by or to the Airport Manager or Engineer, more frequent inspections may be required until the issues are corrected. The Contractor will bear the cost of the more frequent inspections until the issue is corrected. A sample daily inspection checklist is included in Appendix D of FAA Advisory Circular 150/5370-2G, included within the Project Manual.

b. Final Inspection: The Engineer and Airport Manager will conduct a final inspection of the project after substantial completion is reached. The final inspection will note any deficiencies or concerns that are to be addressed prior to accepting the project as physically complete.

SECTION 11. UNDERGROUND UTILITIES

This contract includes work that affects existing airport electrical cables and power circuits, as well as potentially affecting other underground water, sewer, telephone, gas, electrical, solar and other public utilities on the airport property. The Contractor shall exercise caution and protect existing utilities to remain operational. The Contractor shall be responsible for coordinating with utility owners for locating and marking the exact field locations, maintaining such marking and protection of utilities for the project duration. The Contractor shall notify utility owners prior to removal of any existing electrical, telephone or other utility services. The Contractor shall coordinate with the Airport Manager for assistance in locating underground airport utilities.

SECTION 12. PENALTIES

The Contractor and subcontractors shall comply with the airport safety plan and the airport security measures as stated by the Airport Manager. Non-compliance with airport rules and regulations and the CSPP drawings may result in work being suspended until appropriate remedies are taken to the satisfaction of the Engineer and the Airport Manager. Any costs associated with non-compliance to the CSPP drawings shall solely be borne by the Contractor.

SECTION 13. SPECIAL CONDITIONS

During times when the safety of flight/aircraft operations could be impaired, particularly during IFR weather or when equipment is idle, or upon notice from the Airport Manager, all crane booms, towers and other movable appendages shall be lowered to the maximum extent.

SECTION 14. RUNWAY AND TAXIWAY VISUAL AIDS

General: The project will not impact existing runway and taxiway visual aids on the airfield. Existing runway and taxiway lighting, signs and visual aids will remain.

SECTION 15. MARKING AND SIGNS FOR ACCESS ROUTES

The Contractor shall familiarize himself with the layout of the airfield and the required routes of access to the staging area and various phases of work. Temporary movable signs will be required on each side of any active taxiway the contractor's access/haul route crosses, if applicable. If the Contractor deems necessary, or as required by local standards, he may install other temporary signage for access routes. For movable stop signs and any other temporary signage the Contractor wishes to install, the Contractor shall submit shop drawings and a signage plan for approval using procedures outlined in the contract for shop drawing and material submittals.

SECTION 16. HAZARD MARKING AND LIGHTING

Purpose: Hazard marking, lighting, and signing prevent pilots from entering areas closed to aircraft, and prevent construction personnel from entering areas open to aircraft. The Contractor shall delineate the work limits to prevent personnel and equipment from entering the airfield. Additionally, open trenches, excavations, or other hazards shall be appropriately marked in the field to prevent damage to persons or property.

Equipment: Low-profile barricades, traffic cones, or other Owner-approved devices shall be used to delineate the project work limits and the limits that Contractor personnel and equipment are allowed to operate within. Low-profile barricades shall include a flag and light and meet the requirements of FAA AC 5370-2G (or current issue). The equipment shall be sufficiently weighted to remain in place when subjected to typical winds, prop wash, or jet blast.

Vehicles/equipment which operating in the AOA shall be marked and lighted in accordance with this CSPP. The maximum equipment height allowed on the airport shall be as indicated on the CSPP drawing sheet. During times when the safety of flight/aircraft operations could be impaired, particularly during IFR weather or when equipment is idle, all crane booms, towers and other movable appendages shall be lowered to the maximum extent.

SECTION 17. WORK ZONE LIGHTING FOR NIGHTTIME CONSTRUCTION

Construction area lighting will be required if construction activities are conducted during nighttime hours. all equipment, except haul trucks, required by the contractor for their operations shall be equipped with artificial illumination sufficient to safely complete the work. a lighting plan must be submitted by the contractor and approved by the engineer prior to the start of any nighttime work.

A minimum of 20 foot-candles of illumination should be provided in the work area. as a partial fulfillment of the requirements, the contractor shall furnish and use, complete artificial lighting units with a minimum capacity of 3,000 watt electric beam lights, affixed to all equipment in such a way to direct illumination on the area under construction.

The area lighting shall be aimed downward and shall not be aimed or reflected in such a way to interfere with aircraft operations. if aiming is not sufficient to prevent such interference, additional shielding shall be provided in order to mitigate the impacts to aircraft operations. the contractor shall not aim area lighting directly onto places of residence adjacent/nearby to the work area.

SECTION 18. PROTECTION OF RUNWAY AND TAXIWAY SAFETY AREAS

When any aircraft ground operations are underway within a runway or taxiway system, Contractor's work activities, materials, personnel, and equipment are prohibited within such areas, which are designated as the runway and taxiway, safety areas, object free areas or approach/departure surfaces. Active aircraft are assumed to have the right-of-way over vehicles, personnel, or other Contractor equipment.

PROTECTION ZONES	
ITEM	DIMENSIONS
RUNWAY 9-27 SAFETY AREA (RSA)	4,380' X 120'
RUNWAY 9-27 OBJECT FREE AREA (ROFA)	4,380' X 250'
TAXIWAY SAFETY AREA (TSA)	79' WIDE
TAXIWAY OBJECT FREE AREA (TOFA)	124' WIDE
RUNWAY 9-27 OBSTACLE FREE ZONE (ROFZ)	4,300' X 250'
RUNWAY 9-27 PROTECTION ZONE (RPZ)	250' X 450' X 1,000'

SECTION 19. OTHER LIMITATIONS ON CONSTRUCTION

Prohibitions: The maximum height of construction equipment within the project limits is expected to be no higher than 25 feet at any given location. Equipment exceeding these heights will require that the Airport file FAA Form 7460-1, Notice of Proposed Construction or Alteration, and receipt of FAA approval. Contractor shall coordinate equipment heights with the Airport prior to the start of construction to allow adequate time for FAA review.

Smoking is not permitted inside the AOA fence.

Open flame welding and torch cutting operations are not permitted unless adequate fire safety precautions are provided and these operations are authorized by the Airport.

Work Hours: Work will not be allowed at night except as required by the contract documents or approved by the Airport.



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Professional Service Corporation
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MUNICIPAL AIRPORT

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Phone: (217) 324-4731



Kevin N. Lightfoot

DATE SIGNED: 9/12/2025
LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: G-003-SFY.DWG

DESIGN BY: AJC 07/23/2025

























DRAWN BY: AJC 07/23/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

SITE AND SAFETY
PLAN NOTES - SHEET
2

FOR BID

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)
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	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
	TYPE S1 CUTOUT HANDLE REMOVED (MFRD BY CROUSE-HINDS, MANAIRCO, AND OTHERS)
	TYPE S1 CUTOUT HANDLE INSERTED (MFRD BY CROUSE-HINDS, MANAIRCO, AND OTHERS)
	TYPE SCO CUTOUT (MFRD BY ADB)
	TYPE ALSC AIRFIELD LIGHTING SAFETY CUTOUT (MFRD BY ADB)
	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
EOR	ENGINEER OF RECORD
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
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KNL	KEVIN NEIL LIGHTFOOT
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LED	LIGHT EMITTING DIODE
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LHTNG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR 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
-	DASH, HYPHEN, OR MINUS SIGN
XXX	LETTERS AND / OR NUMBERS (TO BE DETERMINED)

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:

1. 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, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
2. KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING/CONSTRUCTION FOR USE AS A REFERENCE.
3. NEW WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. 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).
4. 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.
5. INSULATED CONDUCTORS SHALL 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
(ORIGINATING FROM 240/120V 3 PH, 4W DELTA)

PHASE A	BLACK
PHASE C	BLUE
NEUTRAL	WHITE
GROUND	GREEN
6. SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
7. 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.
8. ONLY QUALIFIED ELECTRICAL CONTRACTORS SHALL PERFORM ELECTRICAL WORK ON THIS PROJECT. NEC DEFINES A QUALIFIED PERSON AS "ONE WHO HAS SKILLS AND KNOWLEDGE RELATED TO THE CONSTRUCTION AND OPERATION OF THE ELECTRICAL EQUIPMENT AND INSTALLATIONS AND HAS RECEIVED SAFETY TRAINING TO RECOGNIZE AND AVOID THE HAZARDS INVOLVED."
9. RESPECTIVE POWER SOURCES FOR EACH PANEL, EQUIPMENT, AIRFIELD LIGHT, SIGN, NAVAID, OR OTHER DEVICE SHALL BE VERIFIED PRIOR TO WORKING ON, RELOCATING, REMOVING, DISCONNECTING, AND/OR INSTALLING THE RESPECTIVE DEVICES. SHUT OFF, LOCKOUT, AND TAGOUT FOR PROTECTION OF PERSONNEL.
10. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE OR HANDHOLE.



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Professional Service Corporation
#184-001084

LITCHFIELD
MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



COVERING ELECTRICAL DESIGN

DATE: 9/12/2025
SIGNED: 9/12/2025

LICENSE: 11/30/2027
EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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NO.	DATE	<div>DESCRIPTION</div> <div>DES DWN REV</div>		

ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-004-LGND.DWG

DESIGN BY: KNL 06/23/2025

DRAWN BY: A.I.C. 06/30/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

ELECTRICAL LEGEND AND ABBREVIATIONS

FOR BID

SEP 16, 2025 11:56 AM CFA4T02387
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AIRPORT ELECTRICAL VAULT AND AIRFIELD LIGHTING REMOVAL, RELOCATION, AND INSTALLATION NOTES

1.

KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. 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.

EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.
3.

VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, INSTALLING, CONNECTING OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING SYSTEM, NAVAID, VAULT EQUIPMENT OR OTHER DEVICE.
4.

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.
5.

NEW HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
6.

THE CONTRACTOR SHALL TEST THE RESPECTIVE AIRFIELD LIGHTING CIRCUITS IN AREAS OF WORK WHERE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S (FOR THE AREAS OF WORK ON THIS PROJECT) SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, AND/OR ADDITIONS AND AFTER THE NEW VAULT, CABLES AND LIGHTING SYSTEM MODIFICATIONS AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE PROJECT ENGINEER OF RECORD. THE PROJECT ENGINEER OF RECORD SHALL BE ON SITE TO OBSERVE THE TESTS. CONTRACTOR SHALL COORDINATE TESTS WITH THE PROJECT ENGINEER OF RECORD. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER OF RECORD AND RESIDENT ENGINEER/ TECHNICIAN.
7.

EXISTING CABLES FOR AIRFIELD LIGHTING AND NAVAIDS SHALL BE LOCATED, DISCONNECTED FROM EXISTING AIRPORT ELECTRICAL VAULT, INTERCEPTED, SPLICED IN RESPECTIVE HANDHOLE/MANHOLE, AND REROUTED TO THE NEW AIRPORT ELECTRICAL VAULT.
8.

OTHER CONSTRUCTION PROJECTS MIGHT BE IN PROGRESS AT THE AIRPORT AT THE SAME TIME AS THIS PROJECT. THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH ALL OTHER CONTRACTORS AND THE AIRPORT MANAGER IN THE COORDINATION OF THE WORK.
9.

REMOVAL WORK SHALL BE COORDINATED WITH THE AIRPORT MANAGER AND THE RESIDENT ENGINEER. OBTAIN APPROVAL FROM THE AIRPORT MANAGER PRIOR TO SHUTTING DOWN AN AIRFIELD LIGHTING SYSTEM OR A LIGHTED NAVAID.
10.

FAA AC 150/5370-10G "STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS", ITEM L-108 "UNDERGROUND POWER CABLE FOR AIRPORTS", REQUIRES THAT EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED ABOVE 5,000 VOLTS AC. CABLE SPLICING/TERMINATING PERSONNEL SHALL HAVE A MINIMUM OF THREE (3) YEARS CONTINUOUS EXPERIENCE IN TERMINATING/SPLICING MEDIUM VOLTAGE CABLE.
11.

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.
12.

IN THE EVENT A CONFLICT IS DETERMINED WITH RESPECT TO MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER OF RECORD FOR FURTHER DIRECTIONS.
13.

SEE SAFETY PLAN AND NOTES FOR SAFETY AND CONSTRUCTION COORDINATION REQUIREMENTS.
14.

ALL ELECTRICAL EQUIPMENT (INCLUDING AIRFIELD LIGHTING AND NAVADS) AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRIC 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, INTERNEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
15.

CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
16.

CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.

17.

RUNWAY AND TAXIWAY LIGHTING CIRCUITS SHALL BE ACTIVE AT THE END OF EACH CONSTRUCTION DAY FOR AN OPEN RUNWAY OR AN OPEN TAXIWAY UNLESS OTHERWISE APPROVED BY THE AIRPORT MANAGER. NAVAID CIRCUITS AND/OR OTHER AIRFIELD LIGHTING CIRCUITS REQUIRING SHUT DOWN WILL REQUIRE COORDINATION WITH THE AIRPORT MANAGER TO ISSUE NOTAMS (NOTICE TO AIRMEN). THE CONTRACTOR SHALL PROVIDE TEMPORARY CABLE & CONNECTIONS WHERE NECESSARY TO MAINTAIN A RUNWAY OR TAXIWAY LIGHTING SYSTEM. TEMPORARY CABLE FOR AIRFIELD LIGHTING SERIES CIRCUITS SHALL BE 1/C #8 FAA L-824 5KV UG CABLE IN DUCT OR UNIT DUCT.
18.

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 150/5370-2G, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS". 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.
19.

HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE, OR HANDHOLE.
20.

THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED PAVEMENT ASSOCIATED WITH REMOVAL WORK AND/OR NEW AIRFIELD ELECTRICAL VAULT AND ASSOCIATED LIGHTING INSTALLATIONS.
21.

NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

EXISTING CABLE NOTES

BASED ON FIELD OBSERVATIONS AND RECORDS THE EXISTING AIRFIELD LIGHTING AND NAVAID CIRCUIT CONDUCTORS ARE UNDERSTOOD TO BE AS FOLLOWS:

RUNWAY 9-27 AND TAXIWAY A SERIES CIRCUIT LIGHTING HOMERUN CABLES ARE 2 - 1/C #8 AWG FAA L-824, 5000 VOLTS CONDUCTOR IN DUCT AND/OR 3/4" BLACK HDPE CONDUIT (UNIT DUCT).

TAXIWAY B SERIES CIRCUIT LIGHTING HOMERUN CABLES ARE 2 - 1/C #8 AWG FAA L-824, 5000 VOLTS CONDUCTOR IN DUCT AND/OR 3/4" BLACK HDPE CONDUIT (UNIT DUCT).

RUNWAY 18-36 AND TAXIWAY C SERIES CIRCUIT LIGHTING HOMERUN CABLES ARE 2 - 1/C #8 AWG FAA L-824, 5000 VOLTS CONDUCTOR IN DUCT AND/OR 3/4" BLACK HDPE CONDUIT (UNIT DUCT).

PRIMARY WIND CONE 480 VAC FEEDER CIRCUIT IS 3 #8 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BROWN, ORANGE, GREEN IN HDPE CONDUIT. THIS FEEDER IS SPLICED IN A LOW VOLTAGE MANHOLE TO 2 #8 XLP-USE, 600 VOLT CONDUCTORS WITH #12 AWG GROUND.

WIND TEE 120 VAC FEEDER CIRCUIT IS 3 #6 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, WHITE, GREEN IN HDPE CONDUIT. THIS FEEDER IS SPLICED IN A L-867 JUNCTION CAN TO 2 #8 AWG CONDUCTORS.

RUNWAY 9 PAPI 240 VAC 2-WIRE WITH EQUIPMENT GROUND FEEDER CIRCUIT IS 3 #6 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, RED, GREEN IN HDPE CONDUIT (UNIT DUCT).
RUNWAY 27 PAPI 240 VAC 2-WIRE WITH EQUIPMENT GROUND FEEDER CIRCUIT IS 3 #6 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, RED, GREEN IN HDPE CONDUIT (UNIT DUCT).

RUNWAY 27 REILS 240 VAC 2-WIRE WITH EQUIPMENT GROUND FEEDER CIRCUIT IS 3 #6 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, RED, GREEN IN HDPE CONDUIT (UNIT DUCT).

RUNWAY 18 PAPI 120/240 VAC 3-WIRE FEEDER CIRCUIT IS 3 #6 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, RED, WHITE IN HDPE CONDUIT (UNIT DUCT).
RUNWAY 36 PAPI 120/240 VAC 3-WIRE FEEDER CIRCUIT IS 3 #6 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, RED, WHITE IN HDPE CONDUIT (UNIT DUCT).

RUNWAY 18 REILS 120 VAC 2-WIRE FEEDER CIRCUIT IS 2 #4 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, WHITE IN HDPE CONDUIT (UNIT DUCT).
RUNWAY 36 REILS 120 VAC 2-WIRE FEEDER CIRCUIT IS 2 #4 XLP-USE, 600 VOLT CONDUCTORS COLOR CODED BLACK, WHITE IN HDPE CONDUIT (UNIT DUCT).

SOLAR PANEL ARRAY #1 POWER FEED TO THE EXISTING VAULT SHELTER IS 8 #10 AWG RHW-2 1KV/2KV CONDUCTORS. 4 ARE COLOR CODED BLACK AND 4 ARE COLOR CODED RED.
SOLAR PANEL ARRAY #2 POWER FEED TO THE EXISTING VAULT SHELTER IS 8 #10 AWG RHW-2 1KV/2KV CONDUCTORS. 4 ARE COLOR CODED BLACK AND 4 ARE COLOR CODED RED.
SOLAR PANEL ARRAY #3 POWER FEED TO THE EXISTING VAULT SHELTER IS 8 #10 AWG RHW-2 1KV/2KV CONDUCTORS. 4 ARE COLOR CODED BLACK AND 4 ARE COLOR CODED RED.

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE 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/TECHNICIAN 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 DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



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#184-001084

LITCHFIELD
MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



COVERING ELECTRICAL DESIGN

DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 12, 2025
PROJECT NO: 24A0003.00
CAD FILE: E-005-NOTES.DWG
DESIGN BY: KNL 06/27/2025
DRAWN BY: AJC 07/22/2025
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

AIRFIELD LIGHTING
NOTES

FOR BID

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



DATE
SIGNED: 9/12/2025

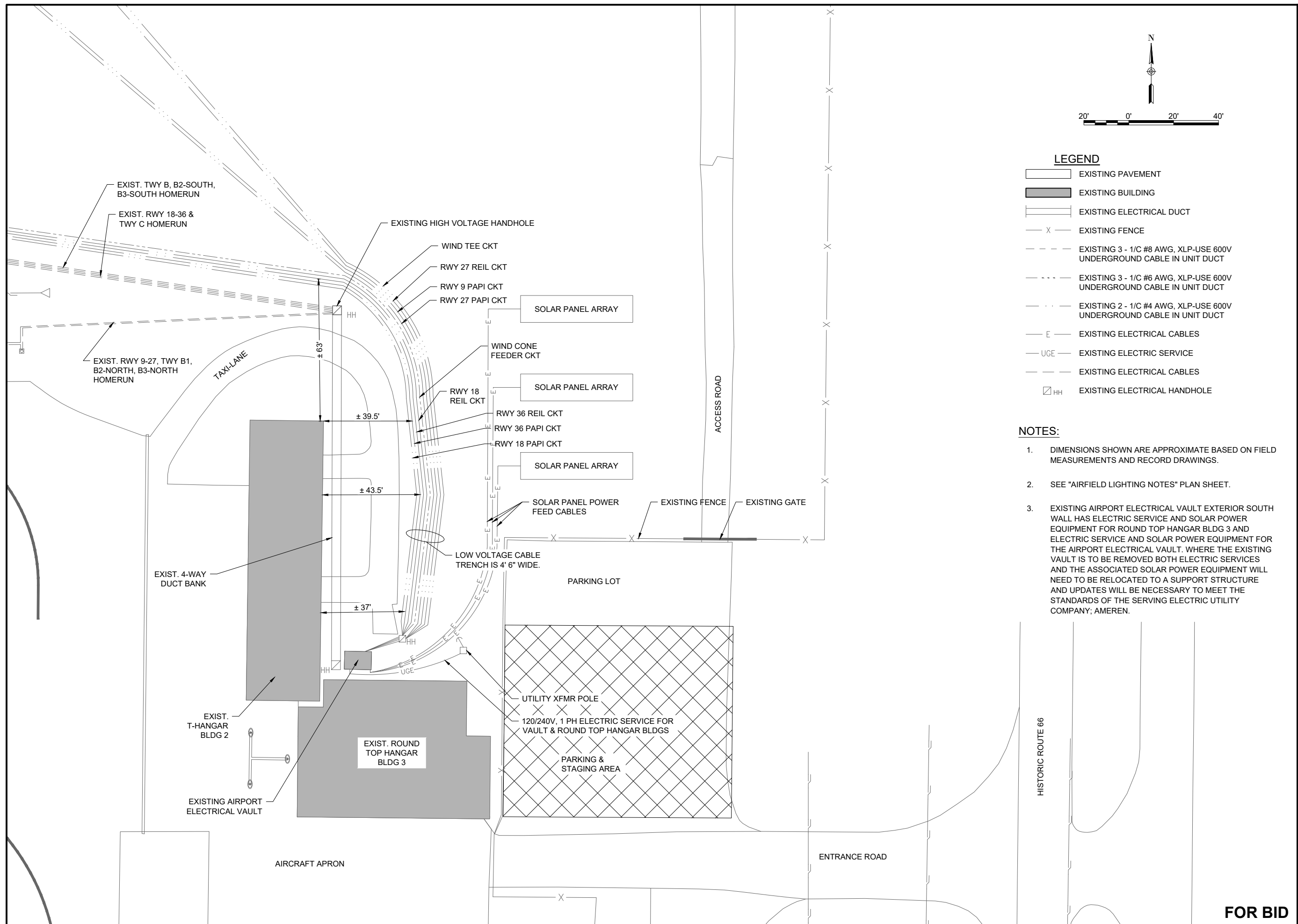
LICENSE
EXPIRES: 11/30/2027

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

SHEET TITLE

EXISTING
ELECTRICAL SITE
PLAN AT VAULT
AREA



SEP 16, 2025 11:58 AM CRAFT02387
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1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



DATE LICENSE
SIGNED: 9/12/2025 EXPIRES: 11/30/2027

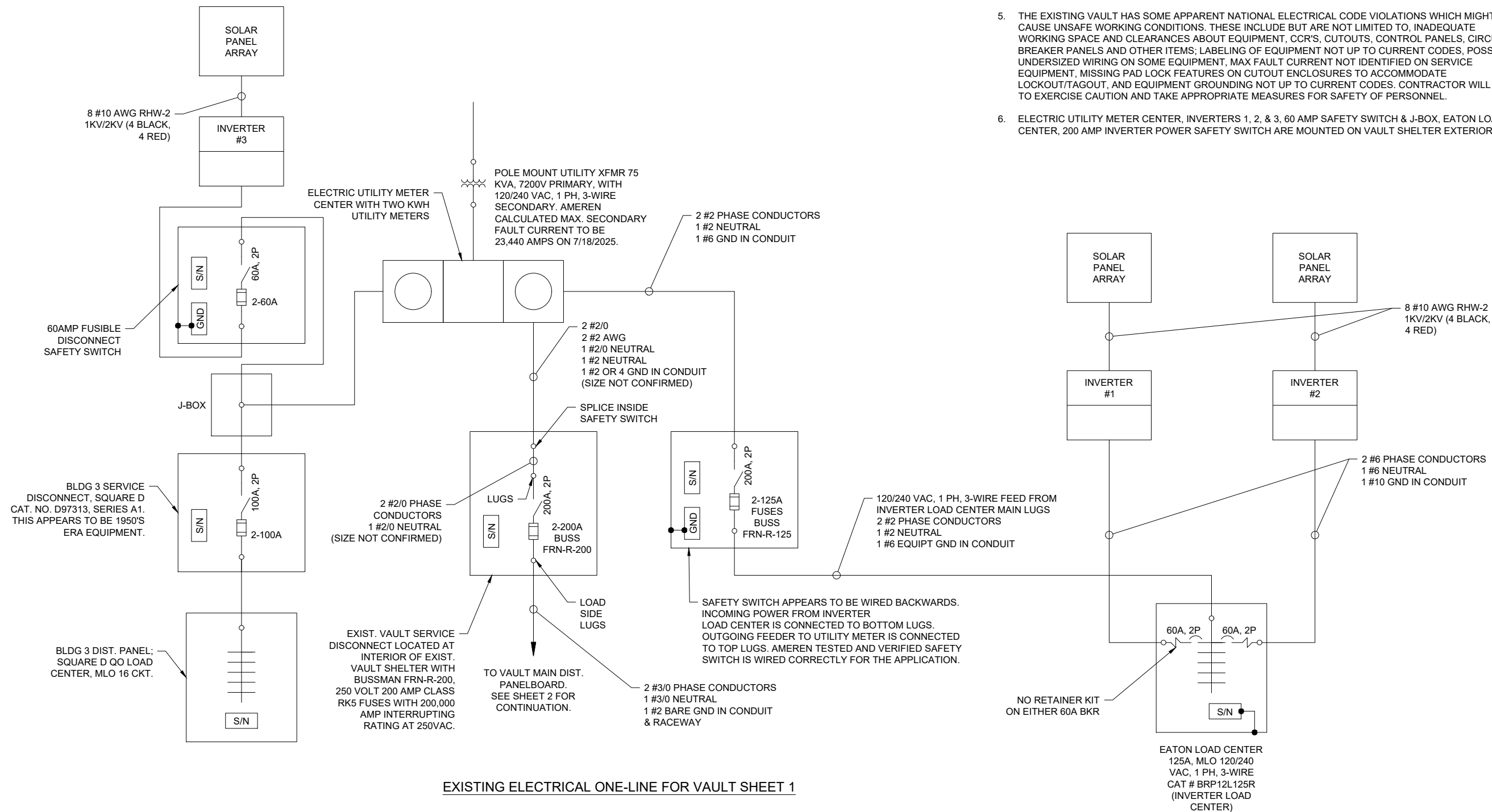
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SBG No: 3-17-SBGP-TBD

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DRAWN BY: AJC 07/01/2025
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

EXISTING
ELECTRICAL
ONE-LINE FOR VAULT
SHEET 1



FOR BID



1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



DATE LICENSE
SIGNED: 9/12/2025 EXPIRES: 11/30/2027

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

- NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE BASED ON FIELD MEASUREMENTS AND RECORD DRAWINGS.
2. SEE "AIRFIELD LIGHTING NOTES" PLAN SHEET.
3. CONTRACTOR MAY TEMPORARILY REMOVE A PORTION OF EXISTING FENCE TO ACCOMMODATE CONSTRUCTION, AND RESTORE TO PRE-CONSTRUCTION CONDITION OR BETTER. (INCIDENTAL TO OTHER ITEMS).

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-102-PLN.DWG

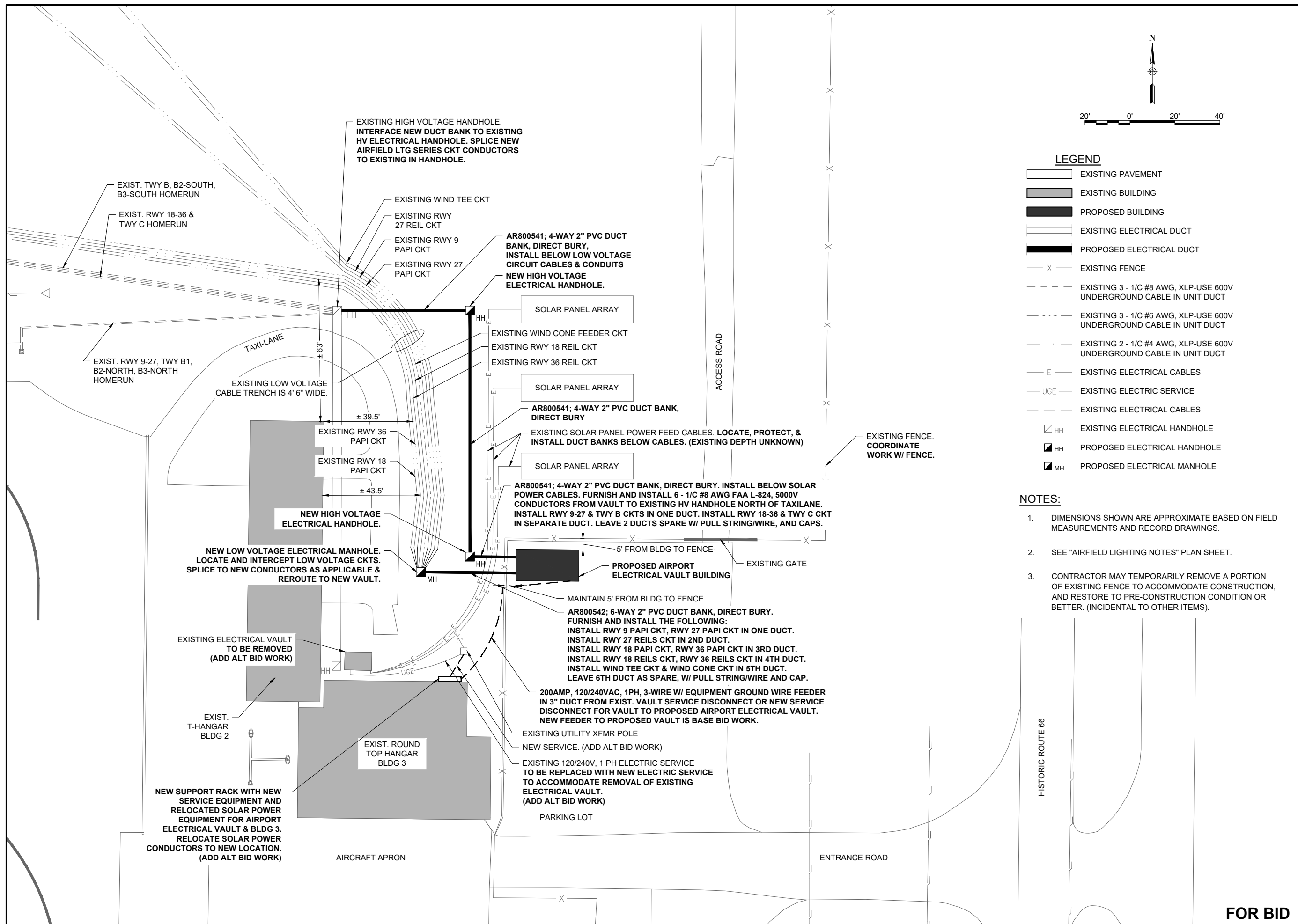
DESIGN BY: KNL 07/09/2025

DRAWN BY: AJC 07/22/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

PROPOSED ELECTRICAL SITE PLAN AT VAULT AREA



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GOVERNING CODE AND REFERENCES:

GC-1. 2024 INTERNATIONAL BUILDING CODE
ASCE 7-22 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES
AISC 15TH EDITION STEEL CONSTRUCTION MANUAL
ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
2018 NATIONAL DESIGN STANDARDS (NDS) FOR WOOD CONSTRUCTION

GC-2. DESIGN CRITERIA:
ASCE 7 BUILDING RISK CATEGORY IV

GC-3. SNOW LOAD PARAMETERS:
GROUND SNOW LOAD $P_g = 20$ PSF
SNOW EXPOSURE FACTOR $C_e = 1.0$
SNOW LOAD IMPORTANCE FACTOR $I_s = 1.2$
THERMAL FACTOR $C_t = 1.0$
SLOPED ROOF SNOW LOAD $P_f = 24$ PSF

SEE PLANS FOR DRIFT AND SLIDING SNOW LOADS WHERE APPLICABLE

GC-4. WIND LOAD PARAMETERS:
BASIC WIND SPEED $V_{3S, ULT} = 119$ MPH
WIND IMPORTANCE FACTOR $I_w = 1.0$
WIND EXPOSURE CATEGORY EXPOSURE = C
FOR SERVICEABILITY CALCULATIONS, THE BASIC WIND SPEED = 74 MPH (SERVICE WIND SPEED BASED ON THE 10 YEAR MEAN REOCCURRENCE INTERVAL)

GC-5. SEISMIC LOAD PARAMETERS:
MAPPED SHORT SPECTRAL ACCELERATION $S_s = 0.46$
MAPPED 1-SEC SPECTRAL ACCELERATION $S_1 = 0.15$
SITE CLASS DEFINITION SITE CLASS D (DEFAULT)
SHORT SPECTRAL RESPONSE COEFFICIENT $S_{ds} = 0.35$
1-SEC SPECTRAL RESPONSE COEFFICIENT $S_{d1} = 0.21$
SEISMIC DESIGN CATEGORY SDC = D
SEISMIC IMPORTANCE FACTOR $I_e = 1.50$
METHOD OF ANALYSIS EQUIVALENT LATERAL FORCE PROCEDURE
SEISMIC RESPONSE COEFFICIENT $C_s = 0.105$
RESPONSE MODIFICATION FACTOR $R = 5.0$
SEISMIC FORCE RESISTING SYSTEM SPECIAL REINFORCED MASONRY SHEAR WALLS

GC-6. LIVE LOADS:
SLAB-ON-GRADE = 100 PSF
ROOF = 20 PSF

GC-7. DEAD LOADS:
STRUCTURE SELF WEIGHT (FRAMING AND DECKING)
ROOF (SUPERIMPOSED) = 5 PSF

GENERAL NOTES

G-1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, COORDINATES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCY IMMEDIATELY.

G-2. COORDINATE STRUCTURAL SHEETS WITH ALL OTHER SHEETS FOR PIPE SIZES AND LOCATIONS, BEAM POCKETS, GRATING LEDGES, BLOCK OUTS, ELECTRICAL REQUIREMENTS AND ANCHOR BOLTED ATTACHMENTS.

G-3. STRUCTURAL SYSTEM IS DESIGNED TO WORK AS A COMPLETED SYSTEM, ANY TEMPORARY SHORING OR BRACING NEEDED DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR ADEQUACY OF TEMPORARY SHORING.

G-4. SEE ELECTRICAL PLANS FOR ADDITIONAL SLEEVES, INSERTS, ETC.

G-5. ALL SUBTERRANEAN STRUCTURES, UTILITIES, PIPING, ETC. IN THE AREA OF ALL EXCAVATIONS TO BE LOCATED AND MARKED BY CONTRACTOR PRIOR TO EARTH REMOVAL WORK. FLAGS OR PAINT ARE ACCEPTABLE METHODS. CONTRACTOR TO MAINTAIN MARKERS UNTIL ALL EXCAVATION ACTIVITIES HAVE CEASED. COORDINATE WITH OWNER.

G-6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY AND ALL ACCIDENTS WHICH RESULT IN DEATH, PERSONAL INJURY OR DAMAGE TO PROPERTY ARISING OUT OF OR IN CONNECTION WITH PERFORMANCE OF THE WORK, WHETHER ADJACENT TO OR AT THE SITE.

G-7. NO PIPES OR SLEEVES FOR MECHANICAL TRADES SHALL PASS THROUGH STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

G-8. ALL SECTIONS, DETAILS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE SHOWN.

G-9. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO ARCHITECT. STRUCTURAL ENGINEER'S REVIEW SHALL BE FOR SIZES AND GENERAL CONFORMANCE WITH INFORMATION GIVEN IN CONSTRUCTION DOCUMENTS ONLY. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW. BASED ON SUCH REVIEWS, ACTIONS WILL BE NOTED FOR EACH SHOP DRAWING SUBMITTAL AS LISTED BELOW:

NO EXCEPTIONS TAKEN: FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED ON THE BASIS THAT THE SUBMITTAL IS IN CONFORMANCE WITH THE DESIGN CONCEPT AND THE CONTRACT DOCUMENTS.

FURNISH AS CORRECTED: FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED AFTER MAKING THE NOTED CORRECTIONS TO SATISFY COMPLIANCE WITH THE DESIGN CONCEPT AND / OR THE CONTRACT DOCUMENTS.

REVISE AND SUBMIT: NO FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED. RESUBMIT FOR REVIEW AFTER REQUESTED REVISIONS ARE MADE.

SUBMIT SPECIFIED ITEM: NO FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED. SUBMIT SPECIFIED ITEM TO HANSON FOR REVIEW.

REJECTED - SEE REMARKS: NO FABRICATION, MANUFACTURING OR CONSTRUCTION MAY OCCUR FOR REASONS STATED IN "REMARKS".

G-10. ALL ASTM DESIGNATIONS SHALL BE THE LATEST UNLESS NOTED OTHERWISE.

FOUNDATION:

F-1. FOUNDATION DESIGN IS BASED UPON AN ASSUMED ALLOWABLE BEARING CAPACITY OF 1,500 PSF.

F-2. ALL FOOTING EXCAVATIONS SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER AND LOOSE SOIL AND BE INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

F-3. NO FILL SHALL BE PLACED OVER FROZEN, MUDDY OR OTHER DELETERIOUS MATERIAL. LIFT THICKNESS SHALL BE MINIMIZED TO ALLOW EFFICIENT COMPACTION.

F-4. BACKFILL AGAINST FOUNDATION WALLS SHALL BE PLACED EVENLY ON ALL SIDES IN ORDER TO ACHIEVE GENERALLY BALANCED LOADINGS.

F-5. THE FOUNDATION CONTRACTOR SHALL FULLY REVIEW DRAWINGS AND SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO DEPRESS FOOTINGS AND PROVIDE PIPE SLEEVES THROUGH FOUNDATION WALLS AS NECESSARY TO ACCOMMODATE PENETRATION IN CONCRETE FOOTINGS OR FOUNDATIONS.

F-6. A LEAN CONCRETE MUD SLAB 3" TO 4" THICK SHALL BE USED IN THE FOOTING EXCAVATION IF THE BOTTOM OF THE EXCAVATION TENDS TO BECOME MUDDY AND SOFT DUE TO CONSTRUCTION ACTIVITY. LEAN CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,000 P.S.I.

CONCRETE:

C-1. MATERIAL PROPERTIES (U.N.O.)
• CONCRETE 28 DAY COMPRESSIVE STRENGTH - $F'_c = 4,500$ PSI,
1. FOUNDATIONS - 4,500 PSI
2. SLABS-ON-GRADE - 4,500 PSI
• W/C RATIO ≤ 0.44
• CONCRETE REINFORCEMENT - $F_y = 60$ KSI (A706 GR 60)

C-2. PROTECTIVE COVERING FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON THE PLANS:
• CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH = 3"
• CONCRETE EXPOSED TO EARTH OR WEATHER = 2"
• CONCRETE NOT EXPOSED TO EARTH OR WEATHER = 1 1/2"

C-3. ALL REINFORCEMENT BARS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES AND SHALL BE CLEAN AND FREE OF GREASE AND SCALING RUST.

C-4. CONTINUOUS TOP AND BOTTOM BARS, WHEN SHOWN IN SECTION ONLY, SHALL BE LAPPED AS FOLLOWS: TOP BARS NEAR MIDSPANS, BOTTOM BARS DIRECTLY OVER SUPPORTS.

C-5. A 3/4" x 3/4" CHAMFER SHALL BE PROVIDED AT THE EDGE OF ALL FINISHED WALLS.

C-6. FOR SLABS ON GRADE, PROVIDE 1/2" THICK PREMOLDED JOINT FILLER AND SEALANT TO ISOLATE THE SLAB FROM CONTACT WITH THE STRUCTURES ALONG ITS PERIMETER.

C-7. TWO #5 BARS EACH FACE SHALL BE PROVIDED DIAGONALLY AT ALL CORNERS OF WALL AND SLAB OPENINGS AND AT ALL REENTRANT CORNERS OF SLABS. BARS SHALL BE EXTENDED 24" MINIMUM BEYOND CORNERS OF THE OPENINGS. ONE #5 BAR TO BE LOCATED BETWEEN EACH CONDUIT PENETRATION IN SLABS, REFER TO ELECTRICAL DRAWINGS FOR CONDUIT LOCATIONS.

C-8. PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLAB-ON-GRADE AT 15 FEET MAXIMUM SPACES EACH DIRECTION. CONTRACTOR SHALL SUBMIT PLANS OF JOINT LOCATIONS FOR APPROVAL.

C-9. ALL CONTROL JOINTS SHALL BE SAWN.

C-10. LAP ALL BARS AS FOLLOWS U.N.O. (CLASS B):
#3 = 1'-7" #4 = 2'-1" #5 = 2'-7"
#6 = 3'-1" #7 = 4'-6" #8 = 5'-2"
#9 = 5'-10" #10 = 6'-7" #11 = 7'-4"

C-11. HOOK REINFORCEMENT BARS AT DISCONTINUOUS ENDS, TYPICAL UNLESS OTHERWISE NOTED. EXTEND REINFORCEMENT TO FAR FACE OF PEDESTALS AND / OR COLUMNS UNLESS NOTED OTHERWISE.

C-12. ALL INTERIOR SLABS-ON-GRADE TO BE EXPOSED TO VIEW IN THE FINISHED WORK SHALL RECEIVE A SMOOTH TROWEL TO FINISH UNLESS OTHERWISE NOTED. ALL EXTERIOR CONCRETE SURFACES (E.G. SLABS, STAIRS, RAMPS) SHALL BE ROUGHENED BY BROOMING IN THE DIRECTION PERPENDICULAR TO THE MAIN TRAFFIC ROUTE IMMEDIATELY AFTER TROWEL FINISHING IS COMPLETED.

C-13. FORMWORK AND SHORING OF FORMWORK SHALL BE DESIGNED BY THE CONTRACTOR.

MASONRY:

M-1. MATERIAL PROPERTIES (U.N.O.)
• COMPRESSIVE STRENGTH - $F'_m = 2,000$ P.S.I.
• MASONRY REINFORCEMENT - $F_y = 60$ KSI (A706 GR 60)
• MORTAR - TYPE S
• GROUT AT 28 DAYS - 2,500 P.S.I. (ASTM C476)

M-2. ALL CELLS WITH VERTICAL REINFORCEMENT SHALL BE GROUTED SOLID.

M-3. ALL LINTEL BEARINGS SHALL BE GROUTED TO THE FOUNDATION.

M-4. MASONRY UNITS TO BE PLACED IN ONE-HALF RUNNING BOND, UNLESS OTHERWISE NOTED.

M-5. MASONRY DESIGN BASED ON INSPECTED WORKMANSHIP.

M-6. LINTELS ARE REQUIRED AT ALL MASONRY WALL OPENINGS WITHOUT EXCEPTION. MASONRY WALL OPENINGS AND ALL LINTELS REQUIRED ARE NOT SPECIFICALLY NOTED ON THE STRUCTURAL PLANS. FOR SIZES AND LOCATION OF ALL WALL OPENINGS. REFER TO NEW VAULT BUILDING SECTIONS AND DETAILS FOR LINTEL DETAILS.

M-7. REFER TO NEW VAULT BUILDING SECTIONS AND DETAILS FOR TOP AND BOTTOM OF CMU WALL CONDITIONS.

M-8. ALL MASONRY WALLS ARE TO HAVE HORIZONTAL, 9 GAGE JOINT REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY.

M-9. ALL REINFORCEMENT LAPS SHALL BE 50 BAR DIAMETERS UNLESS NOTED OTHERWISE.

M-10. HOLLOW MASONRY UNITS SHALL BE LAID WITH FULL HEAD JOINTS AND FULL BED JOINTS OF THE FACE SHELLS AND UNDER WEBS WHERE THE ADJACENT CELLS ARE TO BE FILLED WITH GROUT AND AT THE BOTTOM COURSE.

M-11. UNLESS OTHERWISE NOTED OR DETAILED, PROVIDE HORIZONTAL BOND BEAMS (DIAPHRAGM CHORDS) WITH 2 - #5 BARS CONTINUOUS, BENEATH ROOF MEMBER BEARING ELEVATIONS.

M-12. UNLESS OTHERWISE SCHEDULED FOR ADDITIONAL REINFORCEMENT, 8 INCH CMU WALLS, INCLUDED IN THE PLANS SHALL BE REINFORCED AS FOLLOWS:

- REINFORCE WITH #5 VERTICAL BARS AT 32" CENTERS, #5 HORIZONTAL BARS AT 48" O.C., AND HORIZONTAL JOINT REINFORCEMENT OF 2 - #9 GAGE SIDE RODS AT 16" CENTERS.
- WHERE WALL SECTION BETWEEN OPENINGS IS 32" OR LESS, REINFORCE EACH VERTICAL CELL WITH 1 - #5 BARS, FULL HEIGHT OF WALL.
- SEE TYPICAL DETAILS FOR LINTEL DETAILS.
- REINFORCED ENDS OF ALL WALLS / PIERS WITH 1 - #5 BARS VERTICAL, FULL HEIGHT AT DISCONTINUOUS ENDS, EACH SIDE OF CORNERS, AT T-INTERSECTIONS, AND AT EACH SIDE OF CONTROL JOINTS (TO PROVIDE BOUNDARY ELEMENTS FOR SHEAR WALLS / PIERS). ALSO PROVIDE DOWELS TO FOUNDATION TO MATCH SIZE AND SPACING OF WALL REINFORCEMENT.

M-13. ALL CMU CONSTRUCTION BELOW GRADE SHALL BE GROUTED SOLID.

CARPENTRY:

W-1. MATERIAL PROPERTIES (U.N.O.)
ALL LUMBER TO BE SOUTHERN YELLOW PINE NO. 1 OR SELECT STRUCTURAL. MAXIMUM MOISTURE CONTENT SHALL NOT EXCEED 19%.

W-2. ALL STRUCTURAL LUMBER SHALL BE GRADED IN ACCORDANCE WITH SOUTHERN PINE INSPECTION BUREAU.

W-3. ALL STRUCTURAL PLYWOOD SHALL BE STRUCTURAL I SHEATHING WITH 1/2" NOMINAL THICKNESS.

W-4. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY NOTED OR DETAILED.

W-5. 2x SOLID BLOCKING SHALL BE PLACED BETWEEN TRUSSES AT ALL SUPPORTS.

W-6. HOLES FOR BOLTS SHALL BE BORED 1/32" TO 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER.

W-7. ALL BOLTS BEARING ON WOOD SHALL HAVE WASHERS UNDER HEAD AND / OR NUT.

W-8. ALL BOLTS SHALL BE RETIGHTENED PRIOR TO APPLICATION OF PLYWOOD, PLASTER, ETC.

W-9. CROSS BRIDGING SHALL BE PROVIDED AT 8'-0" CENTERS MAXIMUM FOR ALL JOISTS AND RAFTERS MORE THAN 8" IN DEPTH. USE 2x3 OR AN APPROVED METAL SWAY BRACE.

W-10. NAILING SCHEDULE (U.N.O.)

- A. THIS NAILING IS TYPICAL UNLESS OTHERWISE NOTED OR DETAILED.
- B. TYPICAL NAILS SHALL BE BOX OR COMMON WIRE NAILS.
- C. SPECIFICALLY DETAILED CONNECTIONS SHALL BE COMMON WIRE NAILS.
- D. NAILING SCHEDULE
 - RAFTERS AT ALL BEARINGS
 - PREMANUFACTURED RAFTER TIE
 - BLOCKING BETWEEN RAFTERS
 - TOE NAILS EACH SIDE, EACH END
 - PLYWOOD NAILING
 - 8d NAILS SPACED AT 6" O.C.



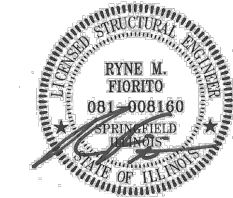
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LITCHFIELD
MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



DATE SIGNED: 9/12/2025
LICENSE EXPIRES: 11/30/2026

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-201-VLT.DWG

DESIGN BY: RF 07/10/2025

DRAWN BY: AJC 08/04/2025

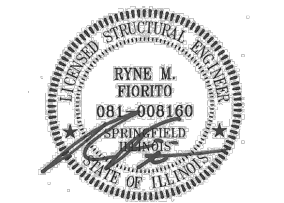
REVIEWED BY: RF 08/04/2025

SHEET TITLE

NEW VAULT
BUILDING GENERAL
NOTES

FOR BID

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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ISSUE: SEPTEMBER 12, 2025
PROJECT NO: 24A0003.00
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SHEET TITLE

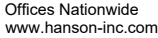
NEW VAULT
BUILDING PLAN

SEP 16, 2025 12:00 PM CRAFT02387
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16. THE OWNER AND/OR ENGINEER OF RECORD RESERVES THE RIGHT TO PERFORM QUALITY ASSURANCE TESTING ON ALL MATERIAL DELIVERED TO THE PROJECT AND TO REJECT ALL MATERIALS NOT MEETING ACCEPTABLE STANDARDS. THE CONTRACTOR WILL COOPERATE WITH THIS TESTING AS REQUIRED AT ALL TIMES.
17. REFER TO THE NEW VAULT ELECTRICAL FLOOR PLAN, NEW VAULT LIGHTING AND RECEPTACLE PLAN, AND NEW VAULT WALL ELEVATIONS SHEETS FOR ELECTRICAL EQUIPMENT INSTALLATION DETAILS.
18. THE VAULT BUILDING SHALL INCLUDE A FIRE PROTECTION AND ALARM SYSTEM THAT WILL PROVIDE LOCAL ALARM NOTIFICATION AND ANNUNCIATION TO THE LOCAL FIRE DEPARTMENT AND/OR A FIRE ALARM CALL & MONITORING CENTER.
19. PROVIDE A NEW DRY CHEMICAL ABC FIRE EXTINGUISHER UL CLASS 4A:80B:C SUITABLE FOR USE ON CLASS A, B, C FIRES, IN THE VAULT SHELTER. PROVIDE SIGNAGE OR PLACARD ABOVE FIRE EXTINGUISHER "FOR BUILDING FIRES", TO MEET REQUIREMENTS OF 2022 EDITION OF NFPA 10; STANDARD FOR PORTABLE FIRE EXTINGUISHERS, PARAGRAPH 6.1.1.4.
20. PROVIDE A NEW UL RATED, 10 POUND CARBON DIOXIDE FIRE EXTINGUISHER UL CLASS 10B:C SUITABLE FOR USE ON CLASS C FIRES IN THE VAULT SHELTER. PROVIDE SIGNAGE OR PLACARD ABOVE FIRE EXTINGUISHER "FOR ELECTRICAL FIRES", TO MEET REQUIREMENTS OF 2022 EDITION OF NFPA 10; STANDARD FOR PORTABLE FIRE EXTINGUISHERS, PARAGRAPH 6.1.1.4.

LOCATING OF EXISTING UNDERGROUND UTILITIES AND CABLES. THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT, OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE 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 PROJECT REPRESENTATIVE 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.

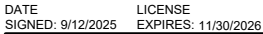
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IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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DRAWN BY: AJC 07/17/2025

REVIEWED BY: RF 08/04/2025

SHEET TITLE

17



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DATE SIGNED: 9/12/2025

LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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		DES	DWN	REV

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DESIGN BY: KNL 07/07/2025

DRAWN BY: AJC 07/21/2025

REVIEWED BY: KNL 7/25/2025

REVIEWED BY: RNE 7/20/2020

SHEET TITLE

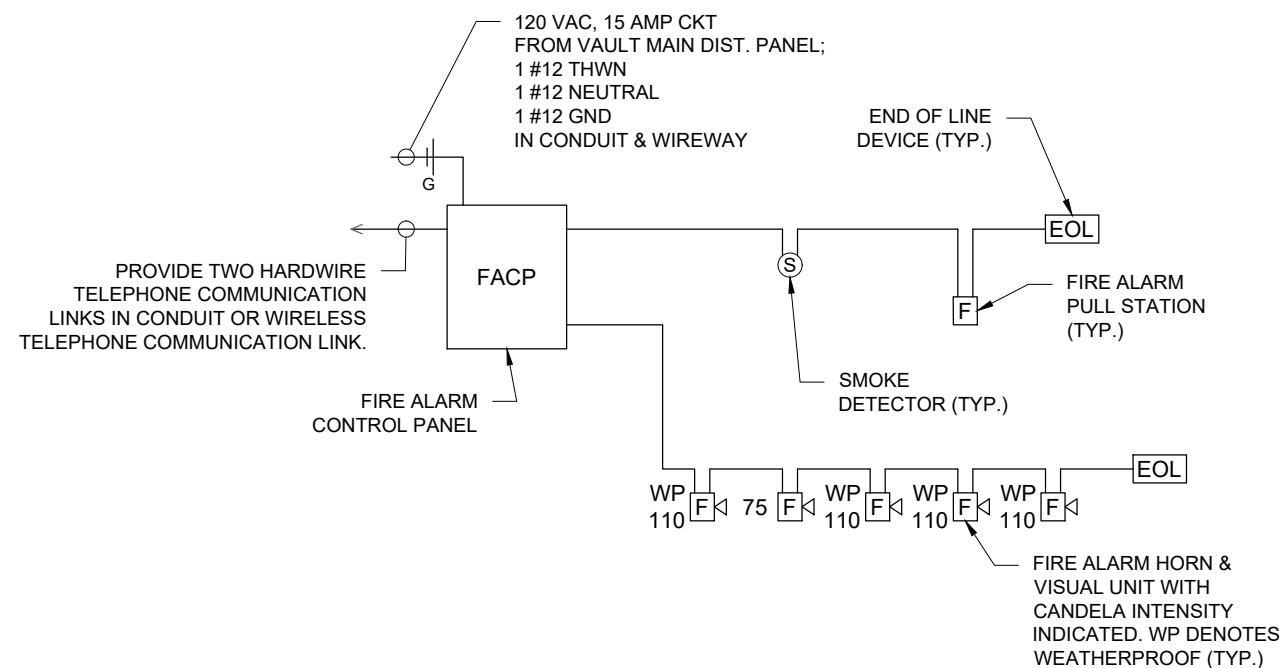
NEW VAULT FIRE DETECTION AND ALARM PLAN



VAULT FIRE DETECTION AND ALARM PLAN

NOTES

1. FURNISH AND INSTALL CONDUIT, FITTINGS, RACEWAYS, WIRING, ADJUSTMENTS AND ACCESSORIES TO ACCOMMODATE THE RESPECTIVE WORK.
2. FIRE DETECTION AND ALARM SYSTEM SHALL BE JOHNSON CONTROLS INC., SIMPLEX-GRINNELL 4006 SERIES, HONEYWELL NOTIFIER, EQUIVALENT BY EDWARDS, OR APPROVED EQUAL. ALL WIRING SHALL BE IN EMT (INTERIOR) AND GRSC (EXTERIOR) AND ALL BOXES PAINTED RED AND MARKED FIRE ALARM. INSTALL IN ACCORDANCE WITH NFPS 72 AND MANUFACTURERS RECOMMENDATIONS.
3. BASED ON REVIEW WITH THE AUTHORITY OF JURISDICTION; CITY OF LITCHFIELD BUILDING INSPECTOR, PUBLIC WORKS DIRECTOR, THE FIRE ALARM SYSTEM IS REQUIRED TO ANNUNCIATE OVER THE TELEPHONE TO A MONITORING CENTER AND/OR TO THE LOCAL FIRE DEPARTMENT. CONTRACTOR SHALL PROVIDE TELEPHONE INTERFACE TO CONTROL PANEL. INCLUDE CONDUITS, TELEPHONE COMMUNICATION LINK, AND ACCESSORIES TO PROVIDE PROPER ALARM ANNUNCIATION.



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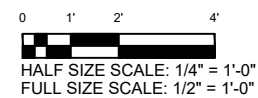
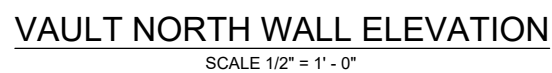
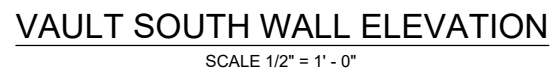
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DESIGN BY: KNL 07/09/2025
DRAWN BY: AJC 07/22/2025
REVIEWED BY: KNL 7/25/2025

NEW VAULT WALL
ELEVATIONS - SHEET
1



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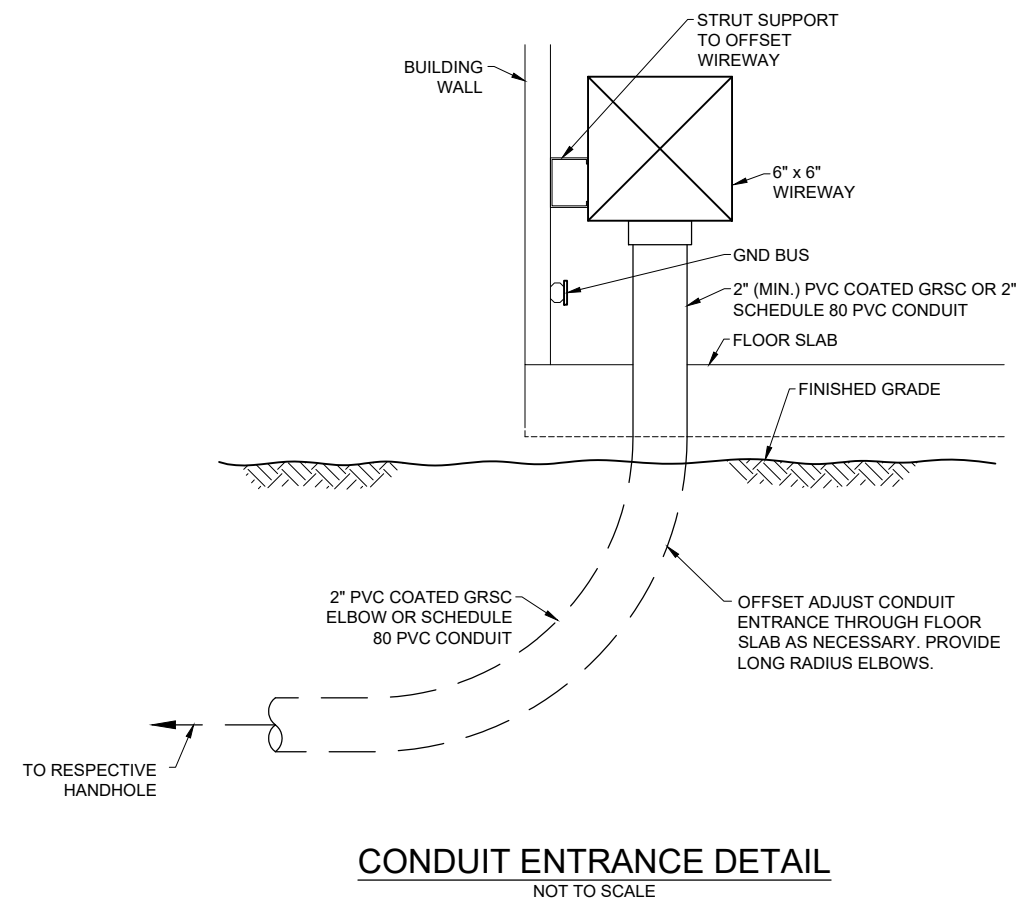
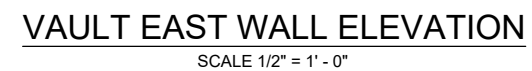
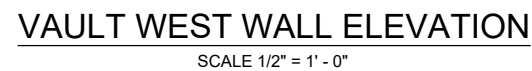
DESIGN BY: KNL 07/09/2025

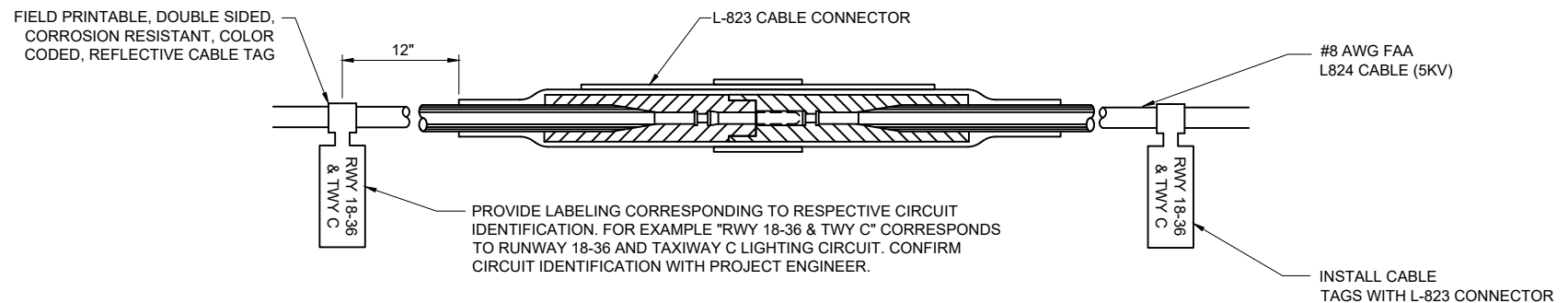
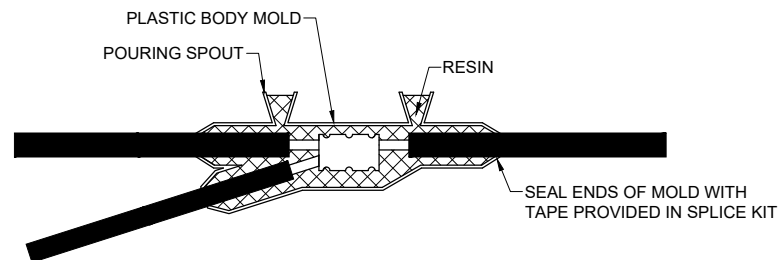
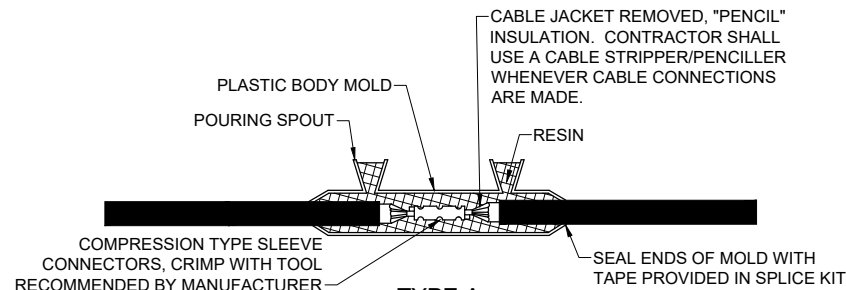
DRAWN BY: AJC 07/23/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

NEW VAULT WALL
ELEVATIONS - SHEET
2





NOTES:

1. SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
2. KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
3. EVERY AIRFIELD LIGHTING CABLE SPlicer SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED AT AND/OR ABOVE 5,000 VOLTS AC TO COMPLY WITH THE REQUIREMENTS OF FAA AC 150/5370-10H ITEM L-108.
4. INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
5. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.
6. WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE (2 INCHES WIDE) OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 (1.5 INCHES WIDE) OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.
7. PROVIDE CABLE TAGS TO IDENTIFY THE RESPECTIVE CIRCUITS ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
8. CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR/LUG MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. FOR THE L-823 CONNECTORS, THE CRIMPING TOOL USED MUST BE LISTED BY THE L-823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURER'S INSTRUCTIONS.



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COVERING ELECTRICAL DESIGN

DATE LICENSE
SIGNED: 9/12/2025 EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

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DESIGN BY: KNL 06/23/2025

DRAWN BY: A.J.C. 06/26/2025

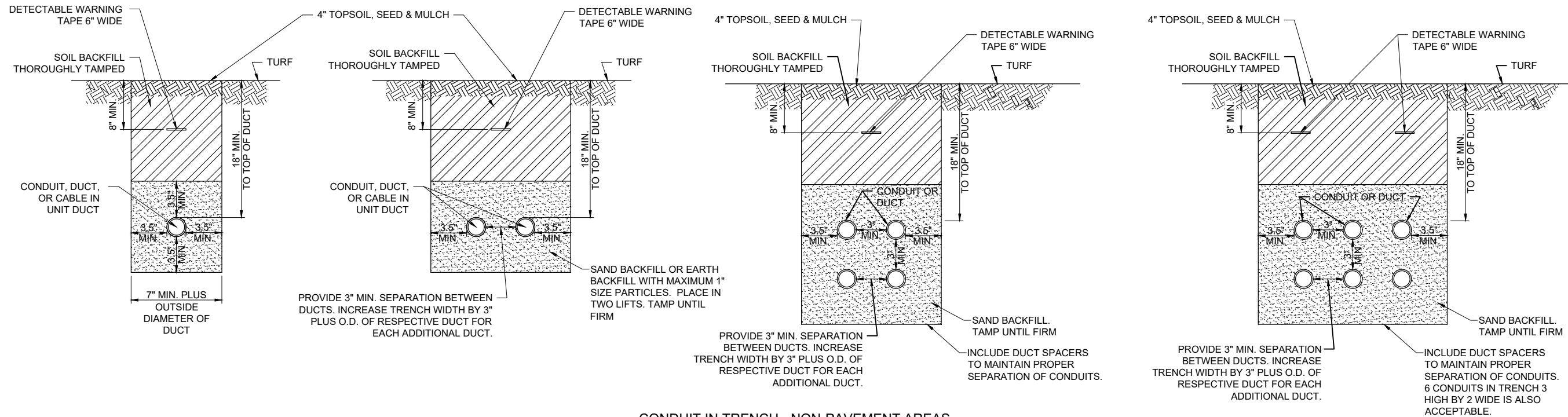
REVIEWED BY: KNI 7/25/2025

SHEET TITLE

AIRFIELD LIGHTING CABLE SPLICE DETAILS

FOR BID

23



CONDUIT IN TRENCH - NON-PAVEMENT AREAS

"NOT TO SCALE"

NOTES:

1. DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. TRENCHES WITH MORE THAN TWO DUCTS OR CABLE IN UNIT DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, DUCT, OR CABLE IN UNIT DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. MINIMUM COVER REQUIREMENTS FOR DUCTS CONTAINING NAVAID FEEDER CIRCUITS SHALL BE 24". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED BELOW PAVEMENT OR ROADWAYS IS 30". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED IN AREAS SUBJECT TO FARMING IS 42". MINIMUM COVER FOR DUCTS CONTAINING SECONDARY ELECTRIC SERVICE CONDUCTORS SHALL BE 36" OR AS REQUIRED BY THE SERVING ELECTRIC UTILITY COMPANY. ADJUST/INCREASE BURIAL DEPTHS TO ACCOMMODATE SITE CONDITIONS, DRAINAGE AND/OR OBSTRUCTIONS. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
4. HIGH-VOLTAGE CIRCUIT WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW-VOLTAGE CIRCUIT WIRING (RATED 600 VOLTS AND BELOW) SHALL MAINTAIN SEPARATION FROM EACH OTHER. HIGH-VOLTAGE WIRING AND LOW-VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, HANDHOLE, OR JUNCTION BOX. CORRECTIVE WORK WILL BE REQUIRED TO SEPARATE HIGH VOLTAGE SERIES CIRCUIT CONDUCTORS FROM LOW VOLTAGE CONDUCTORS WHERE THEY ARE INSTALLED IN THE SAME RACEWAY.
5. SERVICE CONDUCTORS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH FEEDER CIRCUITS, BRANCH CIRCUITS OR CONTROL CIRCUITS.
6. COMMUNICATION CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH POWER CIRCUITS.
7. HOME RUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
8. COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.
9. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.
10. ALL ELECTRICAL EQUIPMENT AND MATERIALS 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.I. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
11. THE CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. 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). WHERE THE FACILITY IS NOT EQUIPPED WITH LOCKOUT/TAGOUT EQUIPMENT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT. FAILURE TO SHUT DOWN AND LOCKOUT THE CIRCUIT(S) PRESENTS A DANGEROUS HAZARD FOR PERSONNEL WORKING ON THIS SYSTEM.
12. 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 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 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. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
13. ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.
14. CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESPECTIVE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.
15. PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.
16. THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. THE CONTRACTOR WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED UNDERGROUND IMPROVEMENTS
17. CONDUITS FOR DIRECT BURIAL OR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 (MINIMUM) PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651, LISTED SUITABLE FOR UNDERGROUND USE EITHER DIRECT-BURIED OR ENCASED IN CONCRETE, OR SCHEDULE 40 (MINIMUM) HDPE CONDUIT, UL LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND LISTED SUITABLE FOR UNDERGROUND USE; EITHER DIRECT BURY OR ENCASED IN CONCRETE. HEAVIER WALL CONDUITS SHALL BE FURNISHED FOR RESPECTIVE APPLICATIONS WHERE DETAILED HEREIN.
18. CONDUITS FOR DIRECTIONAL BORING SHALL BE SCHEDULE 40 PVC CONDUIT OR SCHEDULE 80 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651 AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, SCHEDULE 80 HDPE CONDUIT, UL-LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, OR WALL TYPE MINIMUM SDR 11 HDPE CONDUIT MANUFACTURED IN ACCORDANCE WITH ASTM D-3350 (SPECIFICATION OF POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS) AND ASTM F2160 (STANDARD SPECIFICATION FOR SOLID WALL, HIGH-DENSITY POLYETHYLENE CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER), AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION. PER NEC 300.5 (K), RACEWAYS INSTALLED USING DIRECTIONAL BORING EQUIPMENT SHALL BE APPROVED FOR THE PURPOSE.
19. UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.
20. A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
21. CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
22. ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.



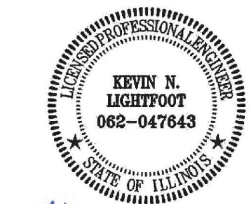
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Kevin T. Highfoot

COVERING ELECTRICAL DESIGN

DATE
SIGNED: 9/12/2025

LICENSE
EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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DESIGN BY: KNL 06/23/2025

DRAWN BY: A.I.C. 06/26/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

CONDUIT TRENCH DETAIL

FOR BID



DUCT MARKER DETAIL-PLAN

"NOT TO SCALE"

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. UNDERGROUND CABLE RUNS MUST BE IDENTIFIED BY CABLE MARKERS AT 200 FEET (61 M) MAXIMUM SPACING WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS MUST BE INSTALLED ABOVE THE CABLE. CABLE MARKERS ARE NOT REQUIRED FOR CABLE RUNS BETWEEN RUNWAY/TAXIWAY EDGE LIGHTS.
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 THE LEGEND IS REQUIRED:
 - A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - B. INCREASE THE MARKER SIZE TO 30" X 30".
 - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE
6. TURF DUCT MARKERS ARE NOT REQUIRED AT PAVEMENT CROSSINGS WHERE DUCTS TERMINATE IN HANDHOLES, OR JUNCTION STRUCTURES.
7. LOCATION OF ALL DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, MUST BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS MUST BE PLACED ABOVE THE SPLICE/CONNECTIONS. DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICES SHALL BE AVOIDED WHERE POSSIBLE. CABLE SPLICES SHALL BE LOCATED IN SPLICE CANS, LIGHT BASES, HANDHOLES, MANHOLES, OR OTHER JUNCTION STRUCTURES UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER OF RECORD.
8. THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: TWY A, TWY B.
9. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

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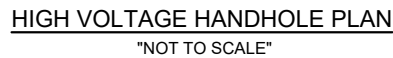
CABLE AND DUCT MARKER DETAILS

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DATE: 9/12/2025 LICENSE: 11/30/2027

IDA No: 3LF-5221
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- ELECTRICAL HANDHOLE
"NOT TO SCALE"



1. SPLICE CANS SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42 (CURRENT ISSUES IN EFFECT), FOR TYPE L-867, CLASS IA, SIZE D, (16 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH SPLICE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. SPLICE CANS AND/OR JUNCTION CANS SHALL HAVE GALVANIZED STEEL COVERS, 3/8-INCH THICK (MINIMUM), WITH STAINLESS STEEL BOLTS.
2. 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 150/5345-42 (CURRENT ISSUES IN EFFECT).
3. APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
4. THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING CANS SHALL BE IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
5. LIDS FOR THE SPLICE CANS CONTAINING HIGH VOLTAGE AIRFIELD LIGHTING CABLES SHALL INCLUDE MINIMUM 1/2-INCH HIGH LETTERING LABELED "DANGER HIGH VOLTAGE KEEP OUT" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.71(E) "SUITABLE COVERS". THIS WILL NEED TO BE COORDINATED WITH THE SPLICE CAN MANUFACTURER.
6. LIDS FOR THE SPLICE CANS CONTAINING LOW VOLTAGE CABLES (RATED 600 VOLTS AND BELOW) WILL BE ACCEPTABLE TO USE BLANK COVERS.

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REVIEWED BY: KNL 7/25/2025

SHEET TITLE

HANDHOLE AND SPLICE CAN DETAILS

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GENERAL NOTES

1.

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, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
2.

CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
3.

CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. 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).
4.

THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM, INCLUDING FAA APPROVED EQUIPMENT, ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
5.

IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTORS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATION, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
6.

THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
7.

WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES STYLES, CLASSES, ETC. MAY BE APPROVED.
8.

ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT TECHNICIAN TO THE CONTRACTOR REGARDING CHANGES IN OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS. THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT TECHNICIAN REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
9.

A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:

A.

A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.

B.

THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.

C.

INSTALLATION INSTRUCTION.

D.

START-UP INSTRUCTIONS.

E.

PREVENTATIVE MAINTENANCE REQUIREMENTS.

F.

CHART FOR TROUBLE-SHOOTING.

G.

COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT - "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE-SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.

H.

PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.

I.

SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

1.

PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. 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.
2.

COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK,RED AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 208/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
3.

ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
4.

IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
5.

LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
6.

NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
7.

THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:

A.

IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.

B.

IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
8.

A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
9.

EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
10.

SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
11.

CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
12.

DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
13.

ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMENTATIONS.
14.

SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE.

15.

CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
16.

PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. 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.
17.

UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
18.

ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
19.

USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
20.

USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
21.

WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125 AND FAA AC 150/5370-10H ITEM L-108, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 130C (2 INCHES WIDE) OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 (1.5 INCHES WIDE) OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.
22.

UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
23.

THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:

A.

FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.

B.

THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.

C.

ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.

D.

WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.

E.

ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.

F.

EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.

G.

A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.

H.

THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.

I.

ALL WIRING SHALL BE NEATLY TRAINED AND LACED.

J.

MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
24.

THE ABOVE GENERAL NOTES & POWER AND CONTROL NOTES ARE BASED ON DEPT. OF TRANSPORTATION FAA GREAT LAKES REGION ELECTRICAL NOTES SUBMITTED BY AL GRIGAITIS, DATE: 2/11/1987 AND HAVE BEEN UPDATED BY KEVIN LIGHTFOOT TO ACCOMMODATE CODE CHANGES, FAA ADVISORY CIRCULAR CHANGES, AND OTHER RESPECTIVE APPLICATIONS.



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COVERING ELECTRICAL DESIGN

DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-001-NOTES.DWG

DESIGN BY: KNL 06/23/2025

DRAWN BY: AJC 06/26/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

ELECTRICAL NOTES
SHEET 1

FOR BID

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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 AIRFIELD LIGHTING CABLE SPLICE DETAILS.
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 AIRFIELD LIGHTING CABLE SPLICE DETAILS.
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, PLUS DEPTH OF BASE CAN (IF APPLICABLE), 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.

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.
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 (MINIMUM) AT 14 DAYS, IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
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 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 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 DIRECTOR/MANAGER AND AIRPORT PERSONNEL 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.
33. THE ABOVE AIRFIELD LIGHTING NOTES ARE BASED ON DEPT. OF TRANSPORTATION FAA GREAT LAKES REGION ELECTRICAL NOTES SUBMITTED BY AL GRIGAITIS, DATE: 2/11/1987 AND HAVE BEEN UPDATED BY KEVIN LIGHTFOOT TO ACCOMMODATE CODE CHANGES, FAA ADVISORY CIRCULAR CHANGES, AND OTHER RESPECTIVE APPLICATIONS.

GROUNDING NOTES FOR AIRFIELD LIGHTING

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. A GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE, TAXI GUIDANCE SIGN AND L-867/L-868 BASE. 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 BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT 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. CONNECTIONS TO LIGHT BASES MAY ALSO BE MADE WITH A UL 467 LISTED PIPE CLAMP CONNECTED TO THE GRSC NIPPLE EXTENDING FROM A THREADED LIGHT BASE HUB. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, 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 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. PER THE REQUIREMENTS OF FAA AC 150/5340-30J DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6 "LIGHT FIXTURE BONDING" IT NOTES THE FOLLOWING: BOND THE LIGHT FIXTURE TO THE LIGHT BASE INTERNAL GROUND LUG VIA A NO. 6 AWG STRANDED COPPER WIRE RATED 600 VOLTS WITH GREEN XHHW, THWN-2, OR OTHER SUITABLE INSULATION, BARE STRANDED CONDUCTOR OR A BRAIDED GROUND STRAP OF EQUIVALENT CURRENT RATING. THE BONDING CONDUCTOR 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 A BONDING WIRE TO THE FIXTURE.
3. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.
4. 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 2023 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
5. THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
6. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, DISTANCE REMAINING SIGN, JUNCTION STRUCTURE/L-867 BASE/L-868 BASE, OR OTHER AIRFIELD LIGHT FIXTURE, THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND EACH TAXI GUIDANCE SIGN INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, LONGER GROUND RODS OR ADDITIONAL GROUND RODS MIGHT BE REQUIRED. IF GROUND RESISTANCE EXCEEDS 25 OHMS CONTACT THE PROJECT ENGINEER OF RECORD FOR FURTHER DIRECTIONS. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER OF RECORD: KEVIN LIGHTFOOT.
7. SAFETY OF PERSONNEL IS THE PRIORITY. PROTECTION OF EQUIPMENT IS SECONDARY. PLEASE BE AWARE THAT GROUNDING DOES NOT GUARANTEE YOU WILL NOT RECEIVE A SHOCK, BE INJURED, OR KILLED FROM DEFECTIVE OR DAMAGED EQUIPMENT OR MATERIALS. PROPER GROUNDING WILL HOWEVER SIGNIFICANTLY REDUCE THE POSSIBILITY OF SHOCK, INJURY, OR DEATH. PLEASE FOCUS ON SAFETY OF PERSONNEL AT ALL TIMES



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LITCHFIELD
MUNICIPAL AIRPORT

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Phone: (217) 324-4731



COVERING ELECTRICAL DESIGN

DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-002-NOTES.DWG

DESIGN BY: KNL 06/23/2025

DRAWN BY: AJC 06/26/2025

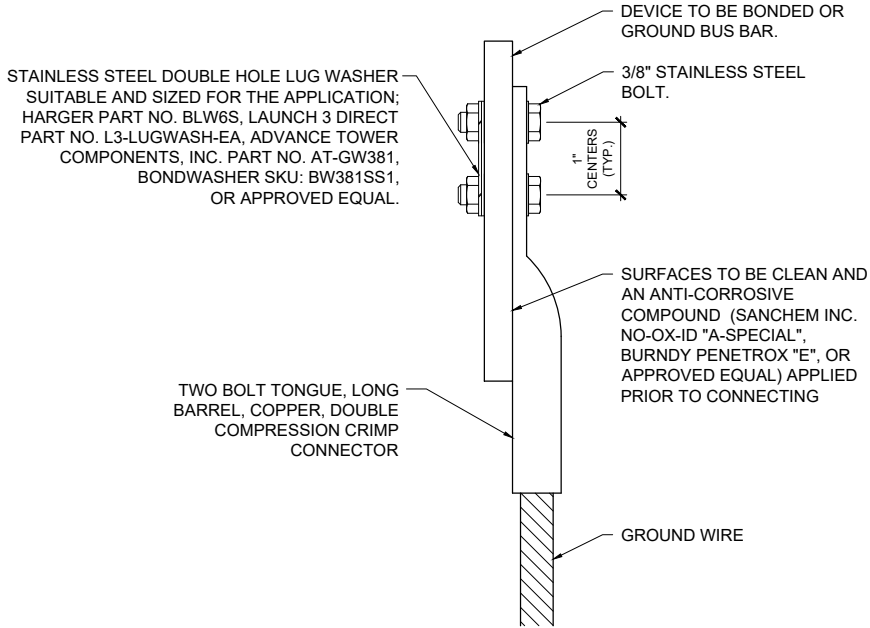
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

ELECTRICAL NOTES
SHEET 2

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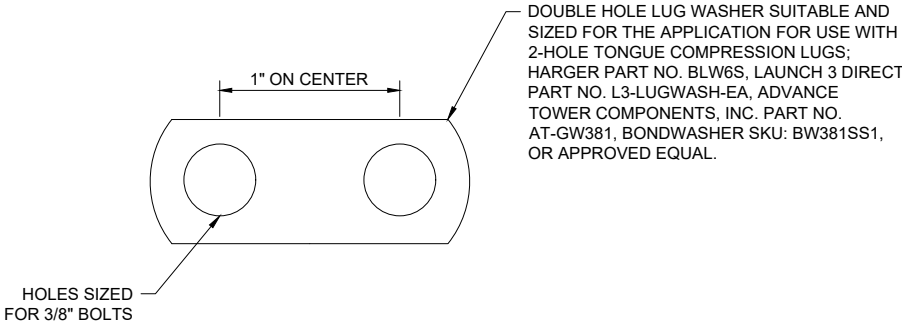


2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)				
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.	HARGER CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38	(CONTACT MFR)
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1	(CONTACT MFR)	(CONTACT MFR)	(CONTACT MFR)
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38	GECLB62C
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38	GECLB42C
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38	GECLB22C
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38	GECLB22CS
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38	GECLB1/02C
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38	GECLB2/02C
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38	(CONTACT MFR)
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38	GECLB4/02C
250 KCMIL	YA29-2TC38	256-30695-1245	BBLU-025D-2TC38	GECLB2502C
350 KCMIL	YA31-2TC38	256-30695-1118	BBLU-035D-2TC38	(CONTACT MFR)
500 KCMIL	YA34-2TC38	256-30695-1119	BBLU-050D-2TC38	GECLB5002C
750 KCMIL	YA39-2TC38	256-30695-1222	BBLU-075D-2TC38	GECLB7502C

NOTES

1. IT IS IMPORTANT TO HAVE GOOD SECURE GROUND CONNECTIONS THAT WILL WITHSTAND WEATHER CONDITIONS AND MAINTAIN CONTINUITY TO GROUND. OFTEN WEATHER CONDITIONS CAN AFFECT GROUNDING CONNECTIONS THAT RESULT IN LOOSE CONNECTIONS AND UNSAFE CONDITIONS. A TWO-HOLE BOLTED CONNECTOR WILL TYPICALLY MAINTAIN A BETTER AND MORE SECURE CONNECTION THAN A ONE-HOLE BOLTED CONNECTOR. ONE HOLE BOLTED CONNECTORS HAVE BEEN OBSERVED ON PAST PROJECTS TO HAVE LOOSENED AND LOST CONTINUITY OVER A SHORT PERIOD OF A FEW MONTHS OR LESS WHERE SUBJECTED TO WEATHER AND TEMPERATURE FLUCTUATIONS AND THEREFORE WILL NOT BE PERMITTED ON THIS PROJECT.
2. SAFETY OF PERSONNEL IS THE PRIORITY. PROTECTION OF EQUIPMENT IS SECONDARY. PLEASE BE AWARE THAT GROUNDING DOES NOT GUARANTEE YOU WILL NOT RECEIVE A SHOCK, BE INJURED, OR KILLED FROM DEFECTIVE OR DAMAGED EQUIPMENT OR MATERIALS. PROPER GROUNDING WILL HOWEVER SIGNIFICANTLY REDUCE THE POSSIBILITY OF SHOCK, INJURY, OR DEATH. PLEASE FOCUS ON SAFETY OF PERSONNEL AT ALL TIMES
3. THE GROUND WIRE CONNECTIONS TO EQUIPMENT LOCATED ABOVE GRADE, SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE WITH 3/8-INCH STAINLESS STEEL BOLTS, NUTS, AND WASHERS OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE. THIS ALSO APPLIES TO CONNECTIONS TO GROUND BUS BARS.
4. HIGH VOLTAGE CIRCUITS OVER 1000 VOLTS CODE UPDATE. PER 2023 NEC ARTICLE 250, PART X. "GROUNDING OF SYSTEMS AND CIRCUITS OF OVER 1000 VOLTS," 250.190 "GROUNDING OF EQUIPMENT", PART (C) (1) "GENERAL" IT NOTES "EQUIPMENT GROUNDING CONDUCTORS THAT ARE NOT AN INTEGRAL PART OF A CABLE ASSEMBLY SHALL NOT BE SMALLER THAN 6 AWG COPPER OR 4 AWG ALUMINUM OR COPPER-CLAD ALUMINUM". GROUND WIRE TO BE USED WITH 6.6 AMP OR 20 AMP SERIES CIRCUITS SHALL BE #6 AWG COPPER CONDUCTOR. THIS APPLIES TO EQUIPMENT GROUND WIRES RUN WITH OUTPUT WIRING FROM CONSTANT CURRENT REGULATORS, THE ASSOCIATED SERIES CIRCUIT CUTOUT DISCONNECTS AND THEIR ENCLOSURES, AND ASSOCIATED HIGH VOLTAGE RACEWAYS AND JUNCTION BOXES CONTAINING AIRFIELD LIGHTING SERIES CIRCUITS.
5. EACH CONNECTION SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR APPROVED 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



GROUNDING TWO HOLE LUG FLAT WASHER DETAIL

TIGHTENING TORQUE TABLE		
BOLT DIAMETER	SILICONE BRONZE GALVANIZED OR STAINLESS STEEL	
	Ft-Lbs.	Inch-Lbs
5/16-18	15	180
3/18-16	20	240
1/2-13	40	480
5/8-11	55	660
3/4-10	80	960

TABLE ABOVE SHOWS THE RECOMMENDED TIGHTENING TORQUES FOR SILICON BRONZE, STAINLESS STEEL AND GALVANIZED STEEL HARDWARE. THIS TABLE REPRESENTS TORQUES PRESENTLY RECOMMENDED BY NEMA-CC1-1984 SPECIFICATION. FOR SPECIFIC EQUIPMENT CONFIRM TIGHTENING TORQUES WITH RESPECTIVE MANUFACTURERS.

TIGHTENING TORQUE TABLE



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REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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ISSUE: SEPTEMBER 12, 2025

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DRAWN BY: AJC 06/30/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

GROUNDING DETAILS
SHEET 2

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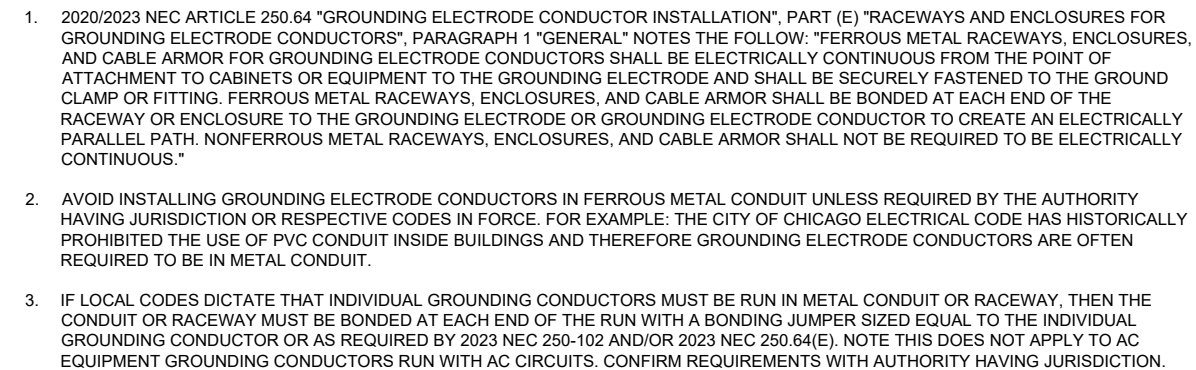
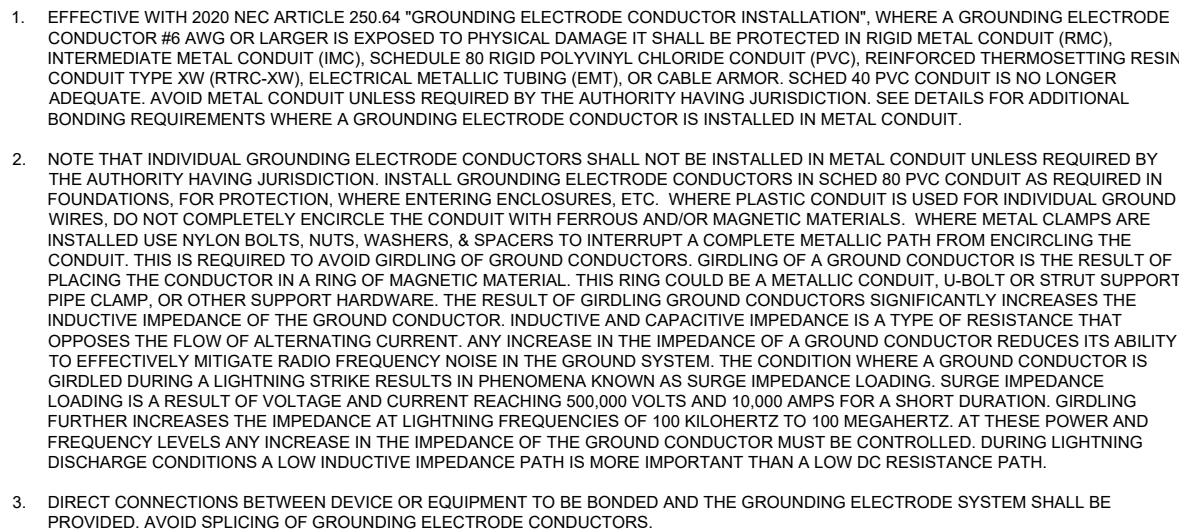
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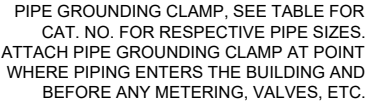
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SBG No: 3-17-SBGP-TBD

ISSUE: SEPTEMBER 12, 2025
PROJECT NO: 24A0003.00
CAD FILE: E-507-DETL.DWG
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DRAWN BY: AJC 06/30/2025
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GROUNDING DETAILS
SHEET 3



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NOTES

- ## WATER SERVICE PIPE GROUNDING DETAIL



- ## PIPE/CONDUIT GROUNDING CLAMP DETAIL

33

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REVIEWED BY: KNL 7/25/2025

SHEET TITLE

GROUND RESISTANCE TESTING DETAILS



1. CONTRACTOR SHALL TEST AND RECORD THE RESISTANCE FOR EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING ELECTRODE SYSTEMS. IF GROUND RESISTANCE EXCEEDS 10 OHMS FOR THE AIRPORT ELECTRICAL VAULT OR EXCEEDS 25 OHMS FOR AIRFIELD LIGHTING OR LIGHTED NAVAIDS, CONTACT THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT FOR FURTHER DIRECTIONS. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER OF RECORD.
2. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, SPLICE CAN AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, NAVAID, OR OTHER INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER OF RECORD FOR FURTHER DIRECTIONS. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER / RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER OF RECORD.
3. GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
4. RECORD SITE CONDITIONS DURING TESTS. RECORD RAIN FALL TOTALS FOR THE 3 DAYS PRIOR TO TEST AND DAY OF TEST.
5. "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

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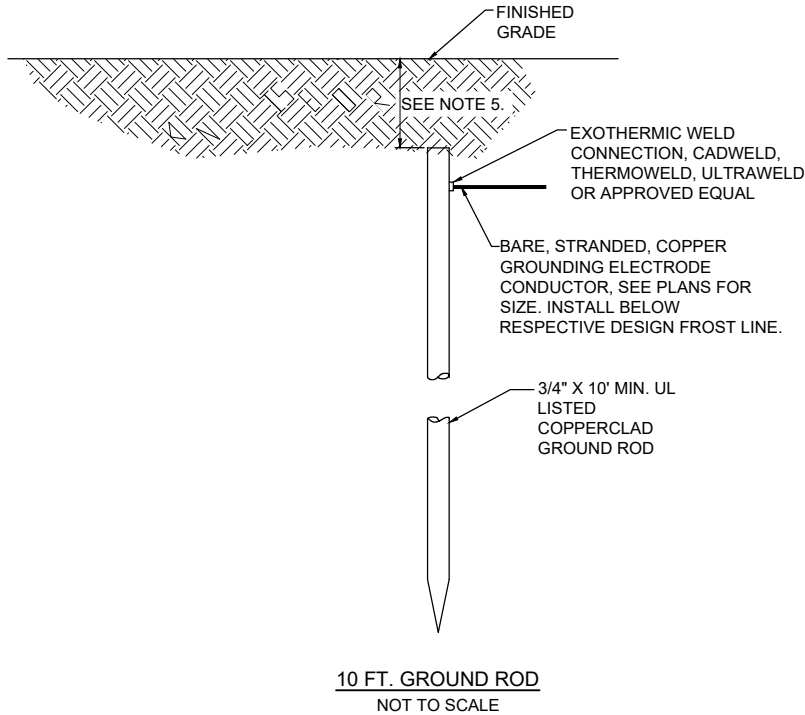
GROUNDING NOTES

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING SHOWN ON THE RESPECTIVE CONTRACT DOCUMENTS AND AS REQUIRED BY THE LATEST NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) IN FORCE, OTHER APPLICABLE CODES, AND IN ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS, AND REQUIREMENTS FOR THE PRIORITY OF PROTECTION OF PERSONNEL AND ADDITIONALLY FOR THE PROTECTION OF EQUIPMENT. ALL PERSONNEL ARE RECOMMENDED TO ALSO COMPLY WITH NFPA 70E STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE. THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION, AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS, OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:

- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING LIGHT BASE GROUNDS FOR (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR THE AIRPORT ELECTRICAL VAULT BUILDING SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT. LONG UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, THERMOWELD BY CONTINENTAL INDUSTRIES, ULTRAWELD BY HARGER, 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 OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 10 OHMS FOR VAULT OR EXCEEDS 25 OHMS FOR AIRFIELD LIGHTING, CONTACT THE PROJECT ENGINEER OF RECORD FOR FURTHER DIRECTIONS. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT PROJECT REPRESENTATIVE, AND THE PROJECT ENGINEER OF RECORD.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR APPROVED EQUAL.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2023 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2023 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2023 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2023 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2023 NEC 250-102 AND/OR 2023 NEC 250.64(E). NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS. CONFIRM REQUIREMENTS WITH AUTHORITY HAVING JURISDICTION.
- GROUNDING WORK AFFECTING OPERATIONS AT A FACILITY SHALL BE COORDINATED WITH THE OWNER'S DESIGNATED REPRESENTATIVE(S) AND TO MINIMIZE DOWNTIME TO EXISTING SYSTEMS. THE RESPECTIVE PERSONNEL SHALL COORDINATE WORK AND ANY POWER OUTAGES WITH THE OWNER'S DESIGNATED REPRESENTATIVE(S). ANY SHUTDOWN OF EXISTING SYSTEMS SHALL BE SCHEDULED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO SHUT DOWN. ALL POWER SYSTEMS (AC OR DC) SHALL HAVE PROVISIONS TO LOCKOUT AND TAGOUT ANY CIRCUIT TO HELP ENSURE THE CIRCUIT IS SAFE TO WORK ON FOR PROTECTION OF PERSONNEL. 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), WHERE A FACILITY DOES NOT HAVE LOCKOUT/TAGOUT KITS THE RESPECTIVE PERSONNEL SHALL PROVIDE ADEQUATE QUANTITIES OF LOCKOUT/TAGOUT KITS SUITABLE FOR USE WITH THE RESPECTIVE EQUIPMENT. WHERE EXISTING ELECTRICAL EQUIPMENT DOES NOT HAVE FEATURES FOR LOCKOUT/TAGOUT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT AND MEASURES TO COMPLY WITH OSHA LOCKOUT/TAGOUT REQUIREMENTS. ALL PADLOCKS FOR USE WITH LOCKOUT/TAGOUT PROCEDURES SHALL HAVE A DIFFERENT KEY. PROVIDE LOCKOUT HASPS TO ACCOMMODATE MULTIPLE PADLOCKS WHERE MULTIPLE PEOPLE ARE WORKING ON THE SAME SYSTEM. INCLUDE LOCKOUT TAGS FOR EACH PIECE OF EQUIPMENT REQUIRING SERVICING AND SHUTDOWN. COMPLIANCE WITH LOCKOUT/TAGOUT PROCEDURES AND ALL OTHER SAFETY PROCEDURES AND REQUIREMENTS ARE THE RESPONSIBILITY OF THE RESPECTIVE PERSONNEL WORKING AT THE FACILITY.

- NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT UNTIL ALL POWER IS REMOVED FROM EQUIPMENT. WARN ALL PERSONNEL OF THE UNGROUNDED CONDITION OF THE EQUIPMENT. DISPLAY APPROPRIATE WARNING SIGNS, SUCH AS DANGER TAGS, TO WARN PERSONNEL OF THE POSSIBLE HAZARDS.
- GROUNDING WORK AND MODIFICATIONS SHALL NOT BE PERFORMED DURING A THUNDERSTORM OR WHEN A THUNDERSTORM IS PREDICTED IN THE AREA.
- PER NFPA 70E STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE IT DEFINES ELECTRICALLY SAFE WORK CONDITION AS "A STATE IN WHICH AN ELECTRICAL CONDUCTOR OR CIRCUIT PART HAS BEEN DISCONNECTED FROM ENERGIZED PARTS, LOCKED/TAGGED IN ACCORDANCE WITH ESTABLISHED STANDARDS, TESTED TO VERIFY THE ABSENCE OF VOLTAGE, AND, IF NECESSARY, TEMPORARILY GROUNDED FOR PERSONNEL PROTECTION." PRIOR TO CONDUCTING TESTS OR WORKING ON EQUIPMENT, VERIFY EQUIPMENT ENCLOSURES AND FRAMES HAVE A GOOD AND SECURE GROUND CONNECTION. FAILURE TO PROPERLY GROUND THIS EQUIPMENT PRESENTS A DANGEROUS HAZARD FOR PERSONNEL WORKING ON THIS SYSTEM.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE PRODUCED FROM 100 PERCENT DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENT. THE BUY AMERICAN PREFERENCE REQUIREMENTS ESTABLISHED WITHIN 49 USC 50101 REQUIRE THAT ALL STEEL AND MANUFACTURED GOODS USED ON AIP PROJECTS MUST BE PRODUCED IN THE UNITED STATES.



NOTES

- GROUND RODS SHALL BE AS SPECIFIED ON THE PLANS AND DETAILED HEREIN.
- THE EARTH GROUND RESISTANCE FOR EQUIPMENT SHALL BE ACCORDING TO THE APPLICABLE CODE REQUIREMENTS AND IN NO CASE MORE THAN 25 OHMS FOR AIRFIELD LIGHTING AND NO MORE THAN 10 OHMS FOR THE AIRPORT ELECTRICAL VAULT. TESTS SHALL BE MADE TO ESTABLISH THAT THE PROPER VALUE HAS BEEN OBTAINED. WHERE REQUIRED MAXIMUM GROUND RESISTANCE LEVELS CANNOT BE ACHIEVED AFTER TESTING NOTIFY THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT FOR FURTHER DIRECTIONS.
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE OR DEEPER TO ACCOMMODATE GROUND RIND/FIELD UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR THE AIRPORT ELECTRICAL VAULT SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.

GROUND RODS
NOT TO SCALE



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Professional Service Corporation
#184-001084

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MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731



COVERING ELECTRICAL DESIGN

DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-003-NOTES.DWG

DESIGN BY: KNL 06/23/2025

DRAWN BY: AJC 06/30/2025

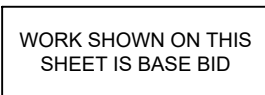
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

GROUNDING NOTES

FOR BID

1. ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. 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. ALL ELECTRICAL EQUIPMENT AND MATERIALS 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, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
3. ALL CONDUCTORS/WIRING SHALL BE COPPER.
4. CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, FUSES, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
5. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, JUNCTION BOX, OR RACEWAY.
6. 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.
7. CONTRACTOR SHALL COORDINATE NEW ELECTRICAL SERVICE AND ELECTRICAL WORK WITH THE SERVING ELECTRIC UTILITY, THE AIRPORT MANAGER, AND THE CITY BUILDING INSPECTOR. CONTRACTOR SHALL CONFIRM REQUIREMENTS WITH SERVING ELECTRIC UTILITY COMPANY, AND CONFORM TO THEIR REQUIREMENTS.
8. CONTRACTOR SHALL COORDINATE BUILDING WORK AND PERMITS WITH THE LOCAL BUILDING INSPECTOR; GARY BAKER, BUILDING OFFICIAL CITY OF LITCHFIELD, 120 E. RYDER, LITCHFIELD, IL 62056, PH: 217-324-8140, CELL PH: 217-851-1951, EMAIL: GBAKER@CITYOFLITCHFIELDIL.COM
9. EQUIPMENT AND MATERIALS NOT LABELED AS "EXISTING" ARE NEW.



WORK SHOWN ON THIS
SHEET IS BASE BID

200 AMP, 120/240VAC,
1 PH, 3-WIRE FEEDER
2 #4/0 XHHW-2
1 #4/0 NEUTRAL
1 #2 GND
IN 3" DUCT/GRSC FROM
SERVICE DISCONNECT.
SE BID EXISTING VAULT
SERVICE DISCONNECT,
ALT BID NEW SERVICE
CONNECT FOR VAULT).

NEW HEAVY DUTY 100 AMP, 240 VAC,
2 POLE DOUBLE THROW NON-FUSIBLE
SAFETY SWITCH IN A NEMA 1 ENCLOSURE;
EATON CUTLER-HAMMER CAT. NO.
DT223UGK, SQUARED CAT. NO. DTU223, OR
APPROVED EQUAL. SWITCH MUST BE
SUITABLE FOR SINGLE POWER SOURCE
AND CONNECTION TO EITHER OF TWO
LOADS.

2 #10 THWN
1 #10 GND
GE WIREWAY
4" LTFMC AT
TO HEATER

**NEW:
2 #4 THWN
1 #6 GND
IN LOW VOLTAGE
WIREWAY WITH 1.25"
UL LISTED LTEMPC
AT CONNECTION TO
CCR.**

AC SURGE PROTECTOR, SUITABLE FOR 120/240 VAC, 1 PH, 3W PLUS GROUND SYSTEM WITH SURGE CURRENT RATING OF 200 KA, 8 x 20 MICROSECOND WAVE PER MODE (400KA PER PHASE) & STATUS INDICATION LIGHTS IN A NEMA 12 ENCLOSURE, LIGHTNING PROTECTION CORP. MODEL LPC 2020-SU-5G, TRANSTECTOR MODEL B93-00-4040-LEA-PV-400-120/240-SP, OR APPROVED EQUAL. AC SURGE PROTECTOR DEVICE SHALL BE INSTALLED ON THE SAME SIDE OF THE PANELBOARD AS THE BREAKER FOR SPD. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE FROM THE PANELBOARD TO THE AC SURGE PROTECTOR DEVICE. PROVIDE DUCT SEAL OR FIRE STOP MATERIAL AT CONDUIT TERMINATIONS.

#2 AWG
BARE
STR. CU.
(TYP.)

10' L X 3/4" DIA UL
LISTED COPPER CLAD
GND ROD TYP. FOR 6
AT CORNERS. GND
RING SHALL BE BURIED
40" MIN. BELOW
FINISHED GRADE.
CONNECTIONS TO GND
RODS AND GND RING
SHALL BE EXOTHERMIC
WELD, CADWELD,
ULTRAWELD,
THERMOWELD, OR
APPROVED EQUAL.

— 2 # 2 THWN
1 #6 GND
IN LOW VOLTAGE RACEWAY & CONDUIT

NEW HEAVY DUTY 100 AMP, 240 VAC,
2 POLE DOUBLE THROW NON-FUSIBLE
SAFETY SWITCH IN A NEMA 1 ENCLOSURE;
EATON CUTLER-HAMMER CAT. NO.
DT223UGK, SQUARED CAT. NO. DTU223, OR
APPROVED EQUAL. SWITCH MUST BE
SUITABLE FOR SINGLE POWER SOURCE
AND CONNECTION TO EITHER OF TWO
LOADS.

**NEW:
2 #2 THWN
1 #6 GND
IN LOW VOLTAGE WIREWAY
WITH 1.25" UL LISTED
LTEM C AT CONNECTION TO
CCR.**

15KW
PRIMAR
CCR FO
RWY 18-2
& TWY C

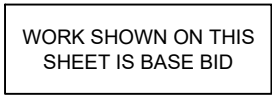
15KW
RELOCATED
CCR FOR
USE AS
BACKUP

VAULT
GND
BUS

VAULT
GND
BUS

FOR BID

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38

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VAULT MAIN DISTRIBUTION PANEL

CKT #	DUTY	SIZE		SIZE	DUTY	CKT #
1	RWY 9-27 & "B" TWYS CCR'S	70A 2P		60A 2P	AC SURGE PROTECTOR	2
3						4
5	ELECTRIC HEATER EH-1	25A 2P		100A 2P	RWY 18-36 & TWY C CCR'S	6
7						8
9	ELECTRIC HEATHER EH-2	25A 2P		15A 1P	INDOOR LIGHTS	10
11				15A 1P	OUTDOOR LIGHTS	12
13	RWY 9 PAPI	20A 2P		15A 1P	L-854 RADIO & CONTROL POWER	14
15				15A 1P	SPARE	16
17	RWY 27 PAPI	20A 2P		20A 2P	RWY 36 PAPI	18
19						20
21	RWY 27 REILS	20A 2P		20A 2P	RWY 18 PAPI	22
23						24
25	WIND TEE	20A 1P		20A 1P	RWY 36 REILS	26
27	STEP-UP XFMR FOR WIND CONE	30A 1P		20A 1P	RWY 18 REILS	28
29	CONV. RECEPT. 1	20A 1P		30A 1P	SPARE	30
31	CONV. RECEPT. 2	20A 1P		20A 1P	SPARE	32
33	EXHAUST FAN	25A 1P		20A 1P	SPARE	34
35	SPARE	30A 1P		20A 1P	SPARE	36
37	SPARE	25A 1P			BLANK	38
39	SPARE	20A 1P			BLANK	40
41	SPARE	15A 1P			BLANK	42
43	BLANK				BLANK	44
45	BLANK				BLANK	46
47	BLANK			100A 2P	SPARE	48
49	BLANK			60A 2P	SPARE	50
51	SPARE	70A 2P				52
53	SPARE					54

S/N

GND

400AMP, 120/240VAC, 1 PHASE, 3 WIRE 54 CIRCUIT PANELBOARD WITH 200AMP, 2 POLE MAIN BREAKER WITH 22,000 AIC AT 240VAC IN A NEMA 1 ENCLOSURE UL-LISTED SUITABLE FOR SERVICE ENTRANCE. 400AMP RATING IS REQUIRED TO ACCOMMODATE SOLAR PANEL INVERTER FEEDS IN ADDITION TO ELECTRIC UTILITY FEED. PANELBOARD SHALL ACCOMMODATE FEEDER AND BRANCH BREAKERS UP TO 150AMP, 2 POLE FRAME & TRIP RATING. PANELBOARD SHALL BE SQUARE D NQ CAT. NO. NQ54L4C WITH COPPER NEUTRAL & COPPER GROUND BAR KIT, EQUIVALENT PANELBOARD BY EATON CUTLER HAMMER, OR APPROVED EQUAL.

NOTES

1.

PANELBOARD BUSSES SHALL BE COPPER. NEUTRAL SHALL BE COPPER. EQUIPMENT GROUND BAR SHALL BE COPPER.

2.

ALL BRANCH CIRCUIT & FEEDER BREAKERS SHALL BE BOLT-ON TYPE WITH 22,000 AIC AT 120/240 VAC.

3.

INCLUDE ENGRAVED, PHENOLIC OR PLASTIC LEGEND PLATE LABELED "VAULT DIST. PANEL A, 120/240 VAC, 1PH, 3W".

4.

PANELBOARD SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWING SUBMITTAL.

5.

CIRCUIT BREAKERS AND WIRING SHALL BE SIZED FOR THE ACTUAL EQUIPMENT FURNISHED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATION AND N.E.C. CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES & WIRING WHERE APPLICABLE TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS AND N.E.C.

6.

CONFIRM EXHAUST FAN MOTOR HORSEPOWER AND FULL LOAD AMPS AND SELECT PROPERLY SIZED CIRCUIT BREAKER IN ACCORDANCE WITH NEC 430.52. CONTACT PROJECT ENGINEER TO CONFIRM CIRCUIT BREAKER SIZE.

7.

FOR A BOTTOM FEED PANELBOARD, MOVE AC SURGE PROTECTOR BREAKER DOWN TO POSITIONS 52 AND 54. LOCATE BREAKER ON SAME SIDE AS SURGE PROTECTION DEVICE.

ROUND TOP HANGAR BLDG 3 MAIN DISTRIBUTION PANEL

CKT #	DUTY	SIZE		SIZE	DUTY	CKT #
1	MAIN BREAKER	100A 2P			BLANK	2
3					BLANK	4
5	ROUND TOP HANGAR LOAD CENTER	70A 2P			BLANK	6
7					BLANK	8
9	T-HANGAR BLDG 2 LOAD CENTER	60A 2P			BLANK	10
11					BLANK	12
13	T-HGR BLDG 2 (FIELD VERIFY EXIST CKT)	50A 2P			BLANK	14
15					BLANK	16
17	BLANK				BLANK	18

S/N

GND

100AMP, 120/240VAC, 1 PHASE, 3 WIRE 18 CIRCUIT PANELBOARD WITH 100AMP, 2 POLE BACKFED MAIN BREAKER WITH 22,000 AIC AT 240VAC IN A NEMA 1 ENCLOSURE UL-LISTED SUITABLE FOR SERVICE ENTRANCE. PANELBOARD SHALL ACCOMMODATE FEEDER AND BRANCH BREAKERS UP TO 100AMP, 2 POLE FRAME & TRIP RATING. PANELBOARD SHALL BE SQUARE D NQ CAT. NO. NQ18L1C WITH COPPER NEUTRAL & COPPER GROUND BAR KIT, EQUIVALENT PANELBOARD BY EATON CUTLER HAMMER, OR APPROVED EQUAL.

NOTES

1.

THIS PANELBOARD WILL REPLACE THE EXISTING MAIN DISCONNECT SWITCH FOR THE ROUND TOP HANGAR BUILDING 3. FIELD VERIFICATIONS AND REPLACEMENT OF EXISTING FEEDER CIRCUITS WILL BE NECESSARY, TO ACCOMMODATE REPLACEMENT.

2.

PANELBOARD BUSSES SHALL BE COPPER. NEUTRAL SHALL BE COPPER. EQUIPMENT GROUND BAR SHALL BE COPPER.

3.

ALL BRANCH CIRCUIT & FEEDER BREAKERS SHALL BE BOLT-ON TYPE WITH 22,000 AIC AT 120/240 VAC.

4.

INCLUDE ENGRAVED, PHENOLIC OR PLASTIC LEGEND PLATE LABELED "HANGAR BLDG 3 DIST. PANEL A, 120/240 VAC, 1PH, 3W".

5.

PANELBOARD SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWING SUBMITTAL.

6.

CIRCUIT BREAKERS AND WIRING SHALL BE SIZED FOR THE ACTUAL EQUIPMENT FURNISHED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATION AND N.E.C. CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES & WIRING WHERE APPLICABLE TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS AND N.E.C.

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Illinois Licensed
Professional Service Corporation
#184-001084

LITCHFIELD
MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

Kevin N. Lightfoot

COVERING ELECTRICAL DESIGN

DATE
SIGNED: 9/12/2025
LICENSE
EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-618.DWG

DESIGN BY: KNL 07/10/2025

DRAWN BY: AJC 07/23/2025

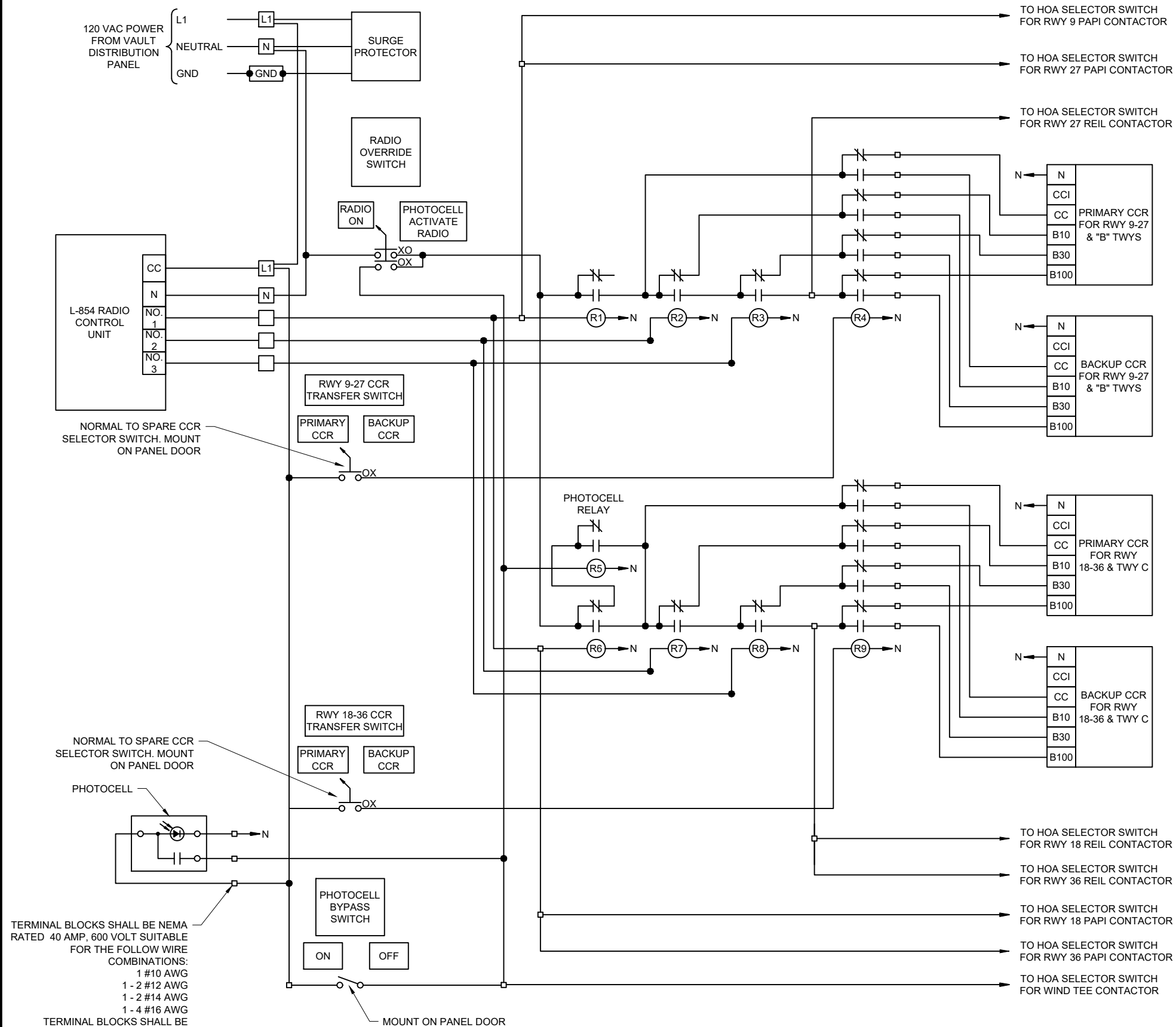
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

VAULT PANELBOARD
SCHEDULES

FOR BID

39



NOTES:

1. RELAY INTERFACE PANEL SHALL BE MANUFACTURED BY AN FAA APPROVED L-821 CONTROL PANEL MANUFACTURER.
2. PANEL SHALL BE IN A NEMA 12 ENCLOSURE WITH HINGED COVER. DRILL HOLE IN BOTTOM OF ENCLOSURE TO ALLOW CONDENSATION TO ESCAPE.
3. 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.
4. IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 9-27 CCR'S (PRIMARY UNIT & BACKUP UNIT) SHALL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:
PHOTOCELL --ACTIVATE RADIO CONTROL
3 CLICKS --10% BRIGHTNESS
5 CLICKS --30% BRIGHTNESS
7 CLICKS --100% BRIGHTNESS
5. EACH PAPI CIRCUIT 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
6. EACH REIL CIRCUIT 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
7. IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 18-36 CONSTANT CURRENT REGULATORS (PRIMARY UNIT & BACKUP 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
8. 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.
9. EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
10. INCLUDE PHOTOCELL BYPASS SWITCH.
11. 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. MAINTAIN LEADS AS SHORT & STRAIGHT AS POSSIBLE. INCLUDE MOUNTING BRACKET.
12. INCLUDE EQUIPMENT GROUND BAR, ILSCO D167-12 OR EQUAL.
13. 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.
14. 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%)
15. "N" DESIGNATES NEUTRAL CONNECTION OR NEUTRAL CONDUCTOR.

TERMINAL BLOCKS SHALL BE NEMA
RATED 40 AMP, 600 VOLT SUITABLE
FOR THE FOLLOW 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.



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LITCHFIELD
MUNICIPAL AIRPORT

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Kevin N. Highfoot

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DATE LICENSE
SIGNED: 9/12/2025 EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

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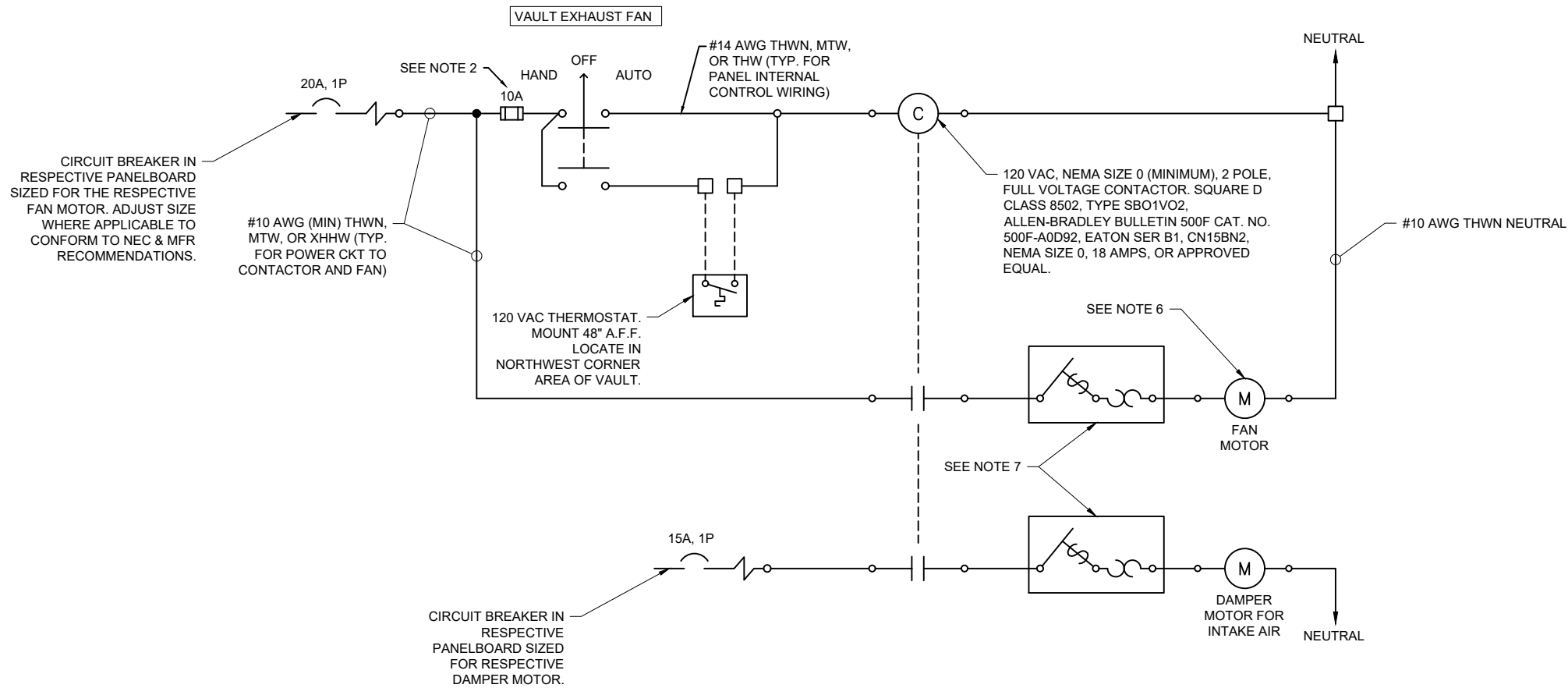
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC

FOR BID

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EXHAUST FAN CONTROL SCHEMATIC

NOTES:

- CONTROL PANEL FOR LIGHTING CONTACTORS AND VAULT FAN 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 PREFERENCES REQUIREMENT. WHERE THE PANEL IS MANUFACTURED BY AN L-821 PANEL BUILDER IT SHALL BE LABELED AS AN L-821 PANEL.
- FUSING FOR FAN CIRCUIT CONTROL WIRING SHALL BE 10 AMP, 600 VAC, BUSSMAN CATALOG FNO-R-10, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR FAN CONTACTOR & MOUNT ON CONTROL PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, ALLEN-BRADLEY CAT. NO. 800T-J2A, EATON CAT. NO. 10250T21KB, OR APPROVED EQUAL. INCLUDE LEGEND PLATE LABELED "VAULT EXHAUST FAN".
- INCLUDE LEGEND PLATE ON CONTROL PANEL ENCLOSURE OUTER DOOR LABELED "NOTICE: CONTACTOR HAS REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME."
- INSTALL LIGHTING CONTACTOR AND EXHAUST FAN CONTROL PANEL IN A NEMA 12 ENCLOSURE WITH HINGED COVER.
- EXHAUST FAN, EF-1, 2000 CFM (MINIMUM) AT 0.25" STATIC PRESSURE, WITH 1/3 HP (MINIMUM), 120 VAC MOTOR, COOK MODEL NUMBER 150W10D, OR APPROVED EQUAL INCLUDE BACK DRAFT DAMPER, WALL MOUNT BRACKET, AND HARDWARE TO INTERFACE TO BUILDING. PROVIDE 120 VAC THERMOSTAT AT 48" AFF. SEE EXHAUST FAN CONTROL SCHEMATIC FOR WIRING REQUIREMENTS. FAN SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENT.
- PROVIDE FRACTIONAL HORSEPOWER MOTOR MANUAL STARTER, SQUARE D MANUAL STARTER WITH HANDLE/GUARD/LOCK OFF, IN NEMA 4 ENCLOSURE CLASS 2510, TYPE FG5, EQUIVALENT BY CROUSE-HINDS, APPLETON, EATON CUTLER HAMMER, OR APPROVED EQUAL FOR FAN MOTOR AND FOR DAMPER MOTOR. INCLUDE MELTING ALLOY TYPE THERMAL OVERLOADS SIZED AS REQUIRED TO PROTECT THE RESPECTIVE MOTOR. 120 VAC MOTORS SHALL HAVE SINGLE POLE STARTERS.

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SIGNED: 9/12/2025
LICENSE: 11/30/2027
EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

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REVIEWED BY: KNL 7/25/2025

SHEET TITLE

EXHAUST FAN
CONTROL
SCHEMATIC

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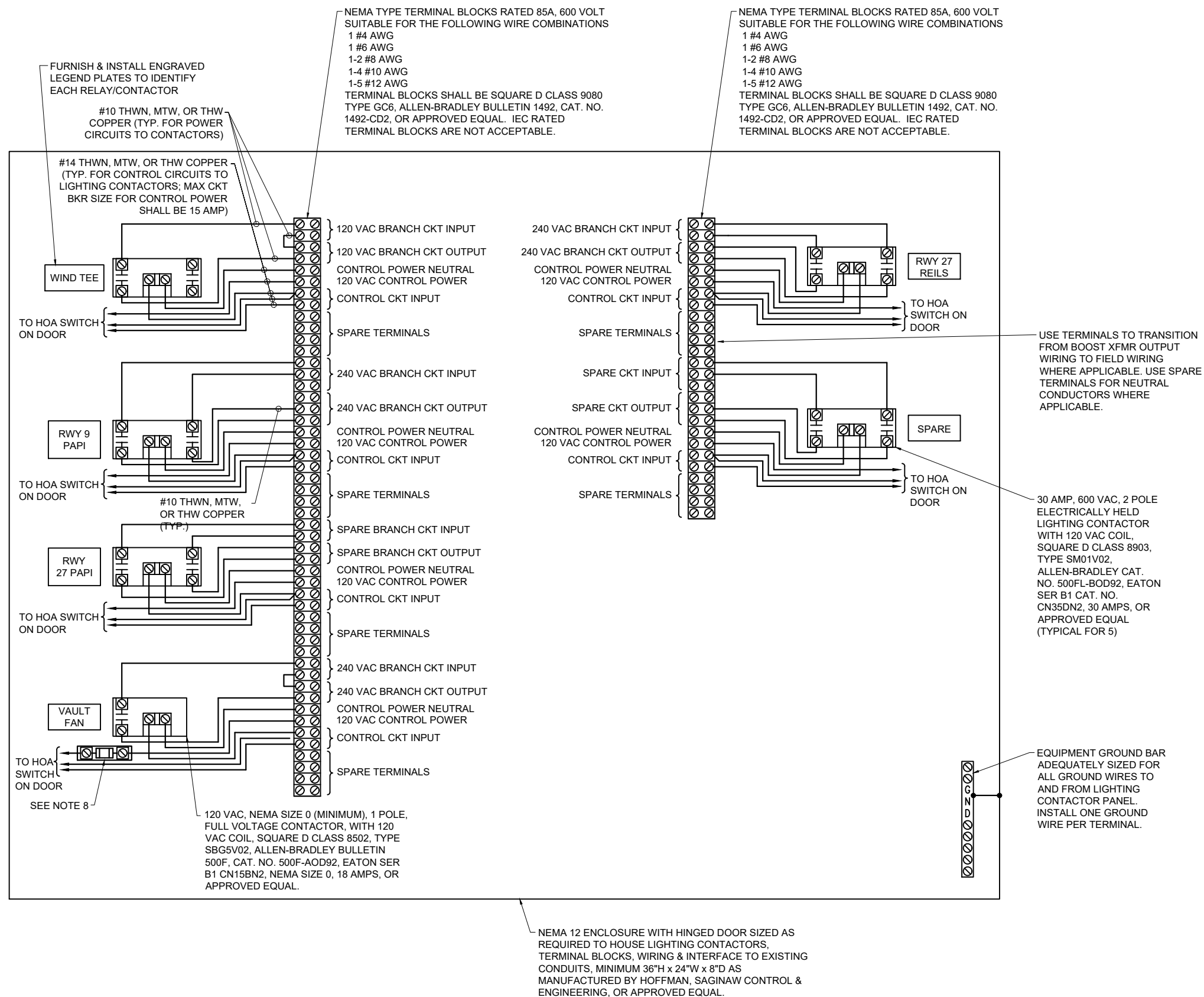
DESIGN BY: KNL 06/24/2025

DRAWN BY: AJC 07/16/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

CONTROL PANEL #1 FOR NAVAIDS & EXHAUST FAN



- NOTES**
1. 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL. 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL.
 2. INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
 3. 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.
 4. PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
 5. 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, ALLEN-BRADLEY CAT. NO. 800T-J2A, EATON CAT. NO. 10250T21KB, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").
 6. SEE "CONTROL PANEL #1 FOR AIRFIELD NAVAIDS SCHEMATIC" AND "EXHAUST FAN CONTROL SCHEMATIC" FOR ADDITIONAL INFORMATION ON WIRING.
 7. FUSING FOR FAN CIRCUIT CONTROL WIRING SHALL BE 10 AMP, 600 VAC CLASS CC, AS MANUFACTURED BY BUSSMANN, LITTLEFUSE, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.
 8. INCLUDE LEGEND PLATE ON CONTROL PANEL ENCLOSURE OUTER DOOR LABELED "NOTICE: CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME".
 9. 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.
 10. CONTROL PANEL FOR AIRFIELD NAVAIDS & VAULT FAN 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 CONTROL PANEL IS MANUFACTURED BY AN L-821 PANEL BUILDER IT SHALL BE LABELED AS AN L-821 PANEL.
 11. CONTROL PANEL FOR AIRFIELD NAVAIDS & VAULT FAN SHALL BE SEPARATE FROM THE RELAY INTERFACE CONTROL PANEL.

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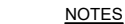
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SBG No: 3-17-SBGP-TBD

NO.	DATE	DESCRIPTION		
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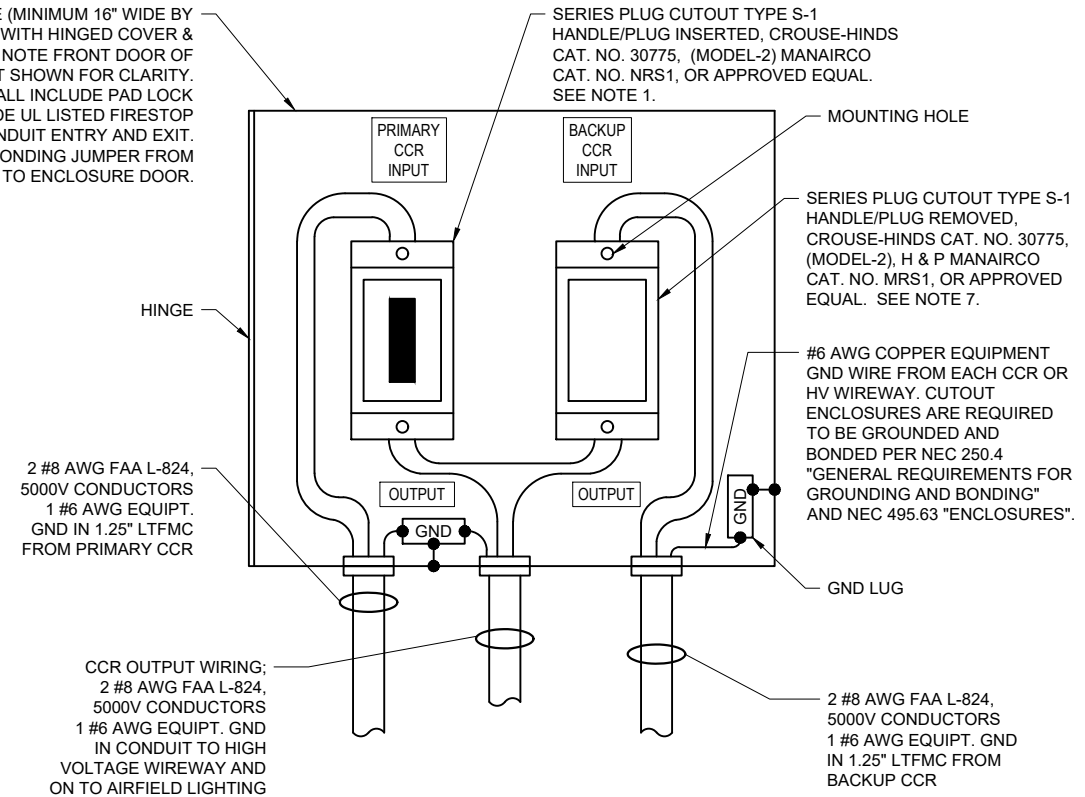
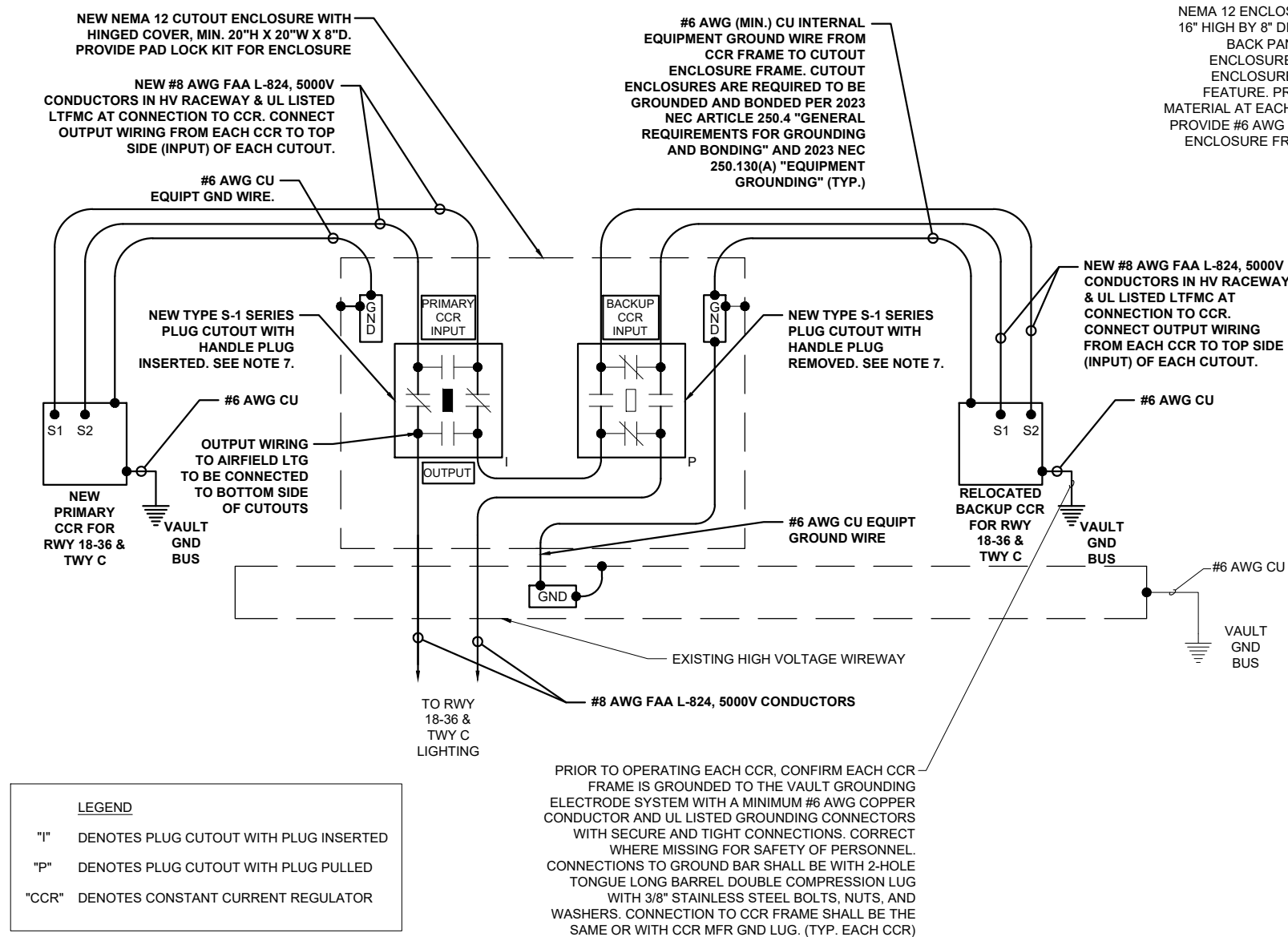
CONTROL PANEL #2 FOR NAVAIDS



1. 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL. 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL.
2. INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
3. 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.
4. PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
5. 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, ALLEN-BRADLEY CAT. NO. 800T-J2A, EATON CAT. NO. 10250T21KB, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").
6. SEE "CONTROL PANEL #2 FOR AIRFIELD NAVAIDS SCHEMATIC".
7. FUSING FOR FAN CIRCUIT CONTROL WIRING SHALL BE 10 AMP, 600 VAC CLASS CC, AS MANUFACTURED BY BUSSMANN, LITTLEFUSE, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.
8. INCLUDE LEGEND PLATE ON CONTROL PANEL ENCLOSURE OUTER DOOR LABELED "NOTICE: CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME".
9. 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.
10. CONTROL PANEL FOR AIRFIELD NAVAIDS & VAULT FAN 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 CONTROL PANEL IS MANUFACTURED BY AN L-821 PANEL BUILDER IT SHALL BE LABELED AS AN L-821 PANEL.
11. CONTROL PANEL FOR AIRFIELD NAVAIDS & VAULT FAN SHALL BE SEPARATE FROM THE RELAY INTERFACE CONTROL PANEL.

— EQUIPMENT GROUND BAR
ADEQUATELY SIZED FOR
ALL GROUND WIRES TO
AND FROM LIGHTING
CONTACTOR PANEL.
INSTALL ONE GROUND
WIRE PER TERMINAL.

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REPLACE AIRPORT
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IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

NO.	DATE	DESCRIPTION		
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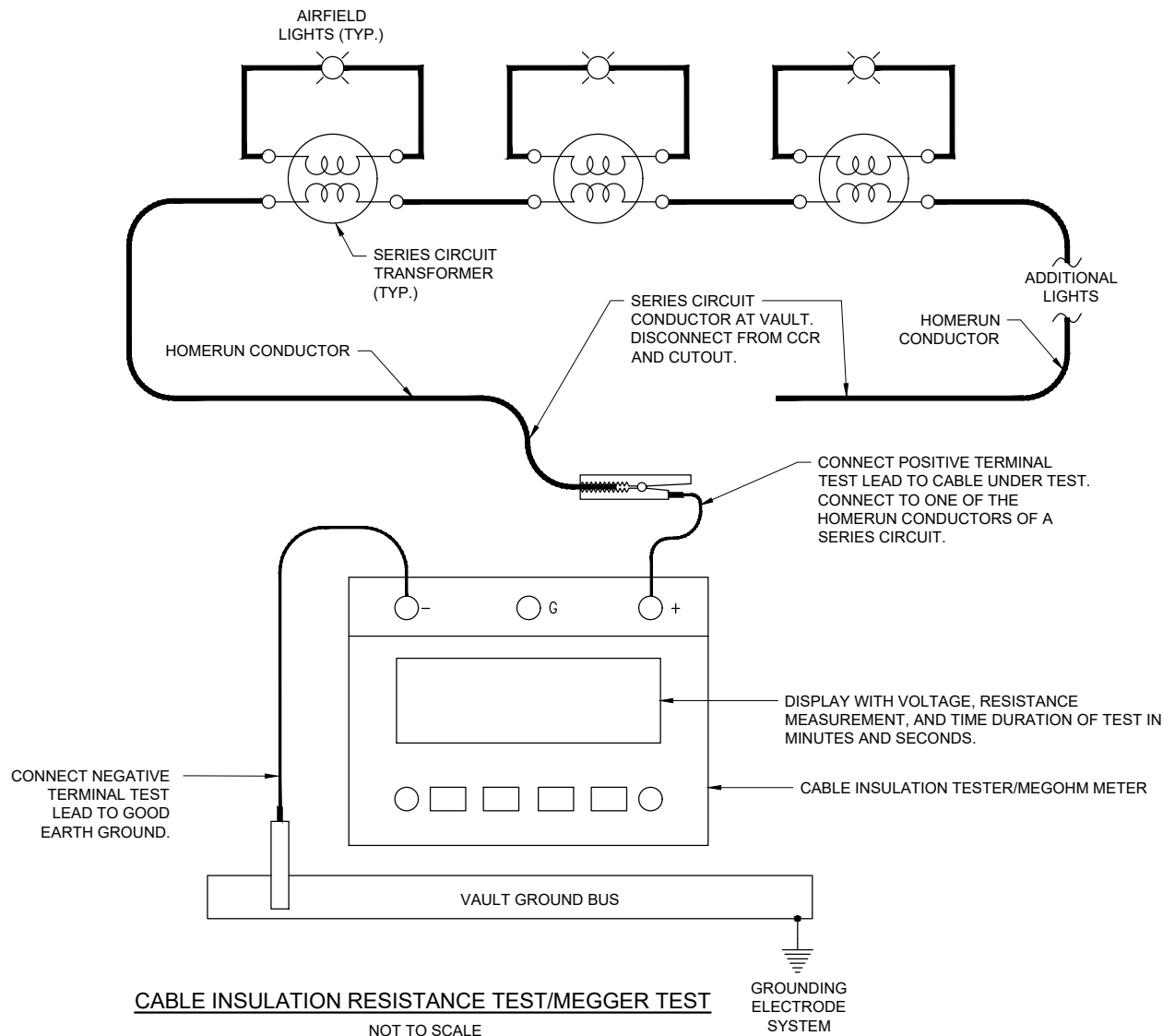
PROPOSED HIGH VOLTAGE WIRING SCHEMATIC RWY 18-36 & TWY C

FOR BID

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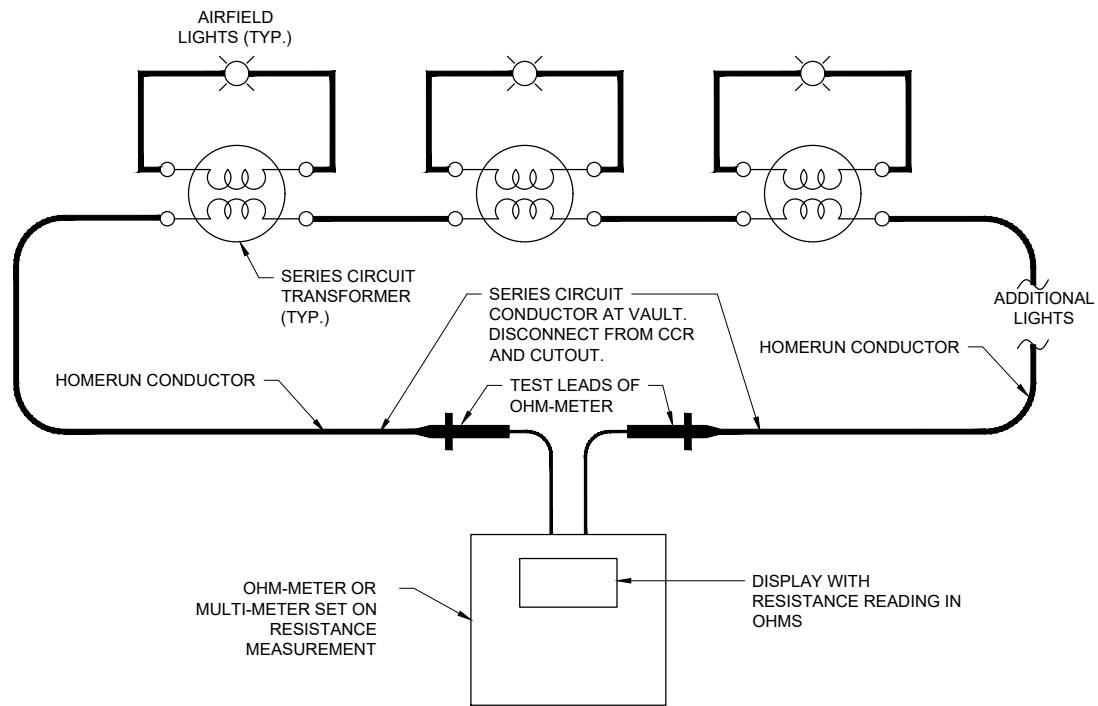
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CABLE INSULATION RESISTANCE TEST (MEGGER TEST) NOTES

1. PRIOR TO BEGINNING EXCAVATIONS, AIRFIELD LIGHTING MODIFICATIONS, CABLE INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS, ALL EXISTING SERIES CIRCUIT LIGHTING CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE RESPECTIVE AIRPORT ELECTRICAL VAULT. COORDINATE TESTING WITH THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT. PROJECT ENGINEER OF RECORD SHALL BE ON SITE TO OBSERVE TEST.
2. AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES, AND/OR OTHER WORK AND ADDITIONS HAVE BEEN COMPLETED ALL EXISTING SERIES CIRCUIT LIGHTING CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE RESPECTIVE AIRPORT ELECTRICAL VAULT. COORDINATE TESTING WITH THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT. PROJECT ENGINEER OF RECORD SHALL BE ON SITE TO OBSERVE TEST.
3. THE CONTRACTOR IS RESPONSIBLE TO EMPLOY THE SERVICES OF PERSONNEL QUALIFIED, FAMILIAR WITH, AND TRAINED TO PERFORM THE RESPECTIVE TESTS, AND QUALIFIED TO WORK ON 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
4. INSULATION RESISTANCE TESTING EQUIPMENT FOR USE WITH 5,000 VOLT SERIES CIRCUIT CABLES SHALL USE AN INSULATION RESISTANCE TESTER CAPABLE OF TESTING THE CABLES AT 5,000 VOLTS. OLDER SERIES CIRCUIT CABLES AND/OR CABLES IN POOR CONDITION MAY REQUIRE THE TEST VOLTAGE TO BE PERFORMED AT A VOLTAGE LOWER THAN 5,000 VOLTS (EXAMPLE 1,000 VOLTS, 500 VOLTS, OR LESS THAN 500 VOLTS). THE RESPECTIVE TEST VOLTAGE SHALL BE RECORDED FOR EACH CABLE INSULATION RESISTANCE TEST RESULT.
5. INSULATION RESISTANCE TESTING EQUIPMENT FOR USE WITH 600 VOLT RATED CABLES SHALL USE A 500 VOLT INSULATION RESISTANCE TESTER. THE RESPECTIVE TEST VOLTAGE SHALL BE RECORDED FOR EACH CABLE INSULATION RESISTANCE TEST RESULT.
6. IT IS RECOMMENDED TO USE THE SAME INSULATION RESISTANCE TEST EQUIPMENT THROUGHOUT THE PROJECT TO ENSURE RELIABLE COMPARATIVE READINGS AT THE BEGINNING OF THE PROJECT AND AT THE COMPLETION OF THE PROJECT.
7. DISCONNECT THE AIRFIELD LIGHTING SERIES CIRCUIT CABLES FROM THE CONSTANT CURRENT REGULATOR WHEN PERFORMING CABLE INSULATION RESISTANCE TESTS (MEGGER TESTS). TEST THE CABLES THAT GO TO THE AIRFIELD FOR THE RESPECTIVE AIRFIELD LIGHTING SERIES CIRCUIT. CONNECT THE CABLE INSULATION RESISTANCE TESTER TO ONE OF THE AIRFIELD LIGHTING SERIES CIRCUIT CABLES AND TO A GOOD GROUND IN THE AIRPORT ELECTRICAL VAULT SUCH AS THE AIRPORT VAULT GROUND BUS. CONDUCT THE CABLE INSULATION RESISTANCE TEST ON EACH RESPECTIVE CABLE FOR NOT LESS THAN 90 SECONDS. RECORD THE TEST RESULTS AT THE END OF THE TIME DURATION FOR THE TEST.
8. FAA ADVISORY CIRCULAR 150/5340-26C MAINTENANCE OF AIRPORT VISUAL AID FACILITIES PROVIDES GUIDANCE ON INSULATION RESISTANCE TESTS. ALSO REFER TO THE USER MANUAL FOR THE RESPECTIVE CABLE INSULATION RESISTANCE TESTER. REASONABLY NEW SERIES CIRCUIT CABLES AND TRANSFORMERS WITH GOOD CONNECTIONS SHOULD READ 500 MEGA-OHMS TO 1,000 MEGA-OHMS OR HIGHER. THE READINGS SHOULD DECREASE WITH AGE. THE RESISTANCE VALUE DECLINES OVER THE SERVICE LIFE OF THE CIRCUIT; A 10-20 PERCENT DECLINE PER YEAR MAY BE CONSIDERED NORMAL. A YEARLY DECLINE OF 50 PERCENT (4 PERCENT MONTHLY) OR GREATER INDICATES THE EXISTENCE OF A PROBLEM, SUCH AS A HIGH RESISTANCE GROUND, SERIOUS DETEIORATION OF THE CIRCUIT INSULATION, LIGHTNING DAMAGE, BAD CONNECTIONS, BAD SPLICES, CABLE INSULATION DAMAGE, OR OTHER FAILURE. FAA ADVISORY CIRCULAR 150/5340-26C NOTES "GENERALLY SPEAKING, ANY CIRCUIT THAT MEASURES LESS THAN 1 MEGOHM IS CERTAINLY DESTINED FOR RAPID FAILURE." AIRFIELD LIGHTING SERIES CIRCUITS WITH CABLE INSULATION READINGS OF LESS THAN 1 MEGOHM ARE NOT UNCOMMON FOR OLDER CIRCUITS THAT ARE 20 YEARS OR MORE OF AGE.
9. BASED ON INFORMATION IN FAA AC NO. 150/5340-26C MAINTENANCE OF AIRPORT VISUAL AID FACILITIES, THE CABLE INSULATION RESISTANCE VALUE INEVITABLY DECLINES OVER THE SERVICE LIFE OF THE CIRCUIT; A 10-20 PERCENT DECLINE PER YEAR MAY BE CONSIDERED NORMAL. IN THE EVENT THAT THE CABLE INSULATION RESISTANCE READINGS HAVE DECLINED MORE THAN 2 PERCENT PER MONTH IT MIGHT INDICATE CABLE DAMAGE DUE TO LIGHTNING OR DAMAGE AS A RESULT OF CONTRACTOR OPERATIONS. WHERE THE CABLE INSULATION RESISTANCE READINGS HAVE DECLINED MORE THAN 2 PERCENT PER MONTH OVER THE PROJECT CONSTRUCTION DURATION AS A RESULT OF CONTRACTOR OPERATIONS, CONTRACTOR WILL NEED TO INVESTIGATE, ADDRESS, AND REPAIR THE RESPECTIVE CABLE CIRCUITS.



MEASURE RESISTANCE OF SERIES CIRCUIT LOOP.

NOT TO SCALE

SERIES CIRCUIT LOOP RESISTANCE MEASUREMENT NOTES

1. PRIOR TO BEGINNING EXCAVATIONS, AIRFIELD LIGHTING MODIFICATIONS, CABLE INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS, THE RESPECTIVE SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT. COORDINATE TESTING WITH THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT. PROJECT ENGINEER OF RECORD SHALL BE ON SITE TO OBSERVE TEST.
2. AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES, AND/OR OTHER WORK AND ADDITIONS HAVE BEEN COMPLETED THE RESPECTIVE SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT. COORDINATE TESTING WITH THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT. PROJECT ENGINEER OF RECORD SHALL BE ON SITE TO OBSERVE TEST.
3. ALL EXISTING SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT. THE RESISTANCE OF THE SERIES CIRCUIT LOOP WITH CONNECTIONS USING #8 AWG COPPER CONDUCTOR SHOULD BE APPROXIMATELY 0.8 TO 1 OHM PER THOUSAND FEET OF CABLE LENGTH. THE RESISTANCE OF THE SERIES CIRCUIT LOOP WITH CONNECTIONS USING #6 AWG COPPER CONDUCTOR SHOULD BE APPROXIMATELY 0.5 TO 0.7 OHM PER THOUSAND FEET OF CABLE LENGTH. THE NUMBER OF SERIES CIRCUIT TRANSFORMERS AND CONNECTIONS WILL AFFECT THE OVERALL RESISTANCE OF THE SERIES CIRCUIT LOOP AND THEREFORE THE MEASUREMENTS MIGHT BE SLIGHTLY HIGHER THAN THE CALCULATED RESISTANCE FOR THE RESPECTIVE LENGTH OF CABLE.



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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-612.DWG

DESIGN BY: KNL 06/24/2025

DRAWN BY: AJC 07/17/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

SERIES CIRCUIT
CABLE TESTING
DETAILS

FOR BID

SEP 16, 2025 11:59 AM C:\FAF\T02387
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LEGEND PLATE SCHEDULE	
DEVICE	LABEL
VAULT MAIN DISTRIBUTION PANELBOARD	VAULT MAIN DISTRIBUTION PANEL 120/240 VAC, 1 PH, 3W FED FROM SERVICE DISCONNECT LOCATED AT OLD VAULT
VAULT MAIN DIST. PANEL	120/240 VAC, 1-PH, 3-WIRE CONDUCTOR COLOR CODING SHALL BE AS FOLLOWS: PHASE A -- BLACK PHASE C -- BLUE NEUTRAL -- WHITE GROUND -- GREEN
MAIN BREAKER IN VAULT MAIN DIST. PANEL	MAIN DISCONNECT
PRIMARY CCR FOR RUNWAY 9-27 & "B" TAXIWAYS	PRIMARY CCR FOR RUNWAY 9-27 & "B" TAXIWAYS
BACKUP/SPARE CCR FOR RUNWAY 9-27 & "B" TAXIWAYS	BACKUP/SPARE CCR FOR RUNWAY 9-27 & "B" TAXIWAYS
PRIMARY CCR FOR RUNWAY 18-36 & TAXIWAY C	PRIMARY CCR FOR RUNWAY 18-36 & TAXIWAY C
BACKUP/SPARE CCR FOR RUNWAY 18-36 & TAXIWAY C	BACKUP/SPARE CCR FOR RUNWAY 18-36 & TAXIWAY C
CUTOUT ENCLOSURE FOR RUNWAY 9-27 & "B" TAXIWAYS	RUNWAY 9-27 & "B" TAXIWAYS CUTOUTS
RUNWAY 9-27 CUTOUT #1 (PRIMARY CCR INPUT)	#1
RUNWAY 9-27 CUTOUT #2 (BACKUP/SPARE CCR INPUT)	#2
RUNWAY 9-27 & TAXIWAY B1, B2-NORTH, B3-NORTH CUTOUT #3	#3
TAXIWAY B, B2-SOUTH, B3-SOUTH CUTOUT #4	#4
RUNWAY 9-27 CUTOUT #1 INPUT SIDE CONNECTION	PRIMARY CCR INPUT
RUNWAY 9-27 CUTOUT #2 INPUT SIDE CONNECTION	BACKUP CCR INPUT
RUNWAY 9-27 & TAXIWAY B1, B2-NORTH, B3-NORTH CUTOUT #3 INPUT SIDE CONNECTION	INPUT
TAXIWAY B, B2-SOUTH, B3-SOUTH CUTOUT #4 INPUT SIDE CONNECTION	INPUT
RUNWAY 9-27 CUTOUT #1 OUTPUT SIDE CONNECTION	OUTPUT
RUNWAY 9-27 CUTOUT #2 OUTPUT SIDE CONNECTION	OUTPUT
RUNWAY 9-27 & TAXIWAY B1, B2-NORTH, B3-NORTH CUTOUT #3 OUTPUT SIDE CONNECTION	RWY 9-27 & TWYS B1, B2-NORTH, B3-NORTH OUTPUT
TAXIWAY B, B2-SOUTH, B3-SOUTH CUTOUT #4 OUTPUT SIDE CONNECTION	TAXIWAY B, B2-SOUTH, B3-SOUTH OUTPUT
CUTOUT ENCLOSURE FOR RUNWAY 18-36 & TAXIWAY C	RUNWAY 18-36 & TAXIWAY "C" CUTOUTS
NORMAL CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 18-36 & TAXIWAY C	PRIMARY CCR INPUT
SPARE CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 18-36 & TAXIWAY C	BACKUP CCR INPUT

LEGEND PLATE SCHEDULE CONTINUED	
DEVICE	LABEL
EACH CUTOUT (RUNWAY 18-36 & TAXIWAY C) OUTPUT SIDE CONNECTION (2 LEGEND PLATES)	OUTPUT
EACH CUTOUT ENCLOSURE (2 LEGEND PLATES)	CAUTION OPERATE CUTOUTS WITH CCR'S SHUT OFF
RADIO RELAY INTERFACE PANEL	RADIO RELAY INTERFACE PANEL
MANUAL TRANSFER SWITCH FOR RUNWAY 9-27 & "B" TAXIWAYS PRIMARY CCR AND BACKUP/SPARE CCR	TRANSFER SWITCH FOR RUNWAY 9-27 & "B" TAXIWAYS CONSTANT CURRENT REGULATORS 240V POWER FED FROM VAULT MAIN DIST. PANEL
MANUAL TRANSFER SWITCH FOR RUNWAY 9-27 & "B" TAXIWAYS PRIMARY CCR AND BACKUP/SPARE CCR - NORMAL SWITCH POSITION	PRIMARY CCR
MANUAL TRANSFER SWITCH FOR RUNWAY 9-27 & "B" TAXIWAYS PRIMARY CCR AND BACKUP/SPARE CCR - BACKUP SWITCH POSITION	BACKUP/SPARE CCR
MANUAL TRANSFER SWITCH FOR RUNWAY 18-36 PRIMARY CCR AND BACKUP/SPARE CCR	TRANSFER SWITCH FOR RUNWAY 18-36 & TAXIWAY C CONSTANT CURRENT REGULATORS. 240V POWER FED FROM VAULT MAIN DIST. PANEL
MANUAL TRANSFER SWITCH FOR RUNWAY 18-36 PRIMARY CCR AND BACKUP/SPARE CCR - NORMAL SWITCH POSITION	PRIMARY CCR
MANUAL TRANSFER SWITCH FOR RUNWAY 18-36 PRIMARY CCR AND BACKUP/SPARE CCR - BACKUP SWITCH POSITION	BACKUP/SPARE CCR
CONTROL PANEL #1 FOR AIRFIELD NAVAIDS AND VAULT FAN	CONTROL PANEL #1 FOR AIRFIELD NAVAIDS, & VAULT FAN
CONTROL PANEL #1 FOR AIRFIELD NAVAIDS AND VAULT FAN	NOTICE CONTRACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME
CONTROL PANEL #2 FOR AIRFIELD NAVAIDS	CONTROL PANEL #2 FOR AIRFIELD NAVAIDS
CONTROL PANEL #2 FOR AIRFIELD NAVAIDS	NOTICE CONTRACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME
RADIO RELAY INTERFACE CONTROL PANEL	RADIO RELAY INTERFACE CONTROL PANEL
LOW VOLTAGE WIREWAY (PROVIDE 9 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	LOW VOLTAGE
HIGH VOLTAGE WIREWAY (PROVIDE 6 LABELS. SEE DETAIL ON LEGEND PLATE SCHED. SHEET 3.	DANGER HIGH VOLTAGE KEEP OUT
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

LEGEND PLATE SCHEDULE CONTINUED	
DEVICE	LABEL
EACH CCR	NOTICE THIS CCR HAS ADDITIONAL 120 VAC CONTROL POWER FEEDING IT. DISCONNECT ALL POWER SOURCES TO CCR BEFORE SERVICING.
EACH CCR	KEEP CLEAR DO NOT STORE MATERIALS ON TOP OF CCR

DIRECTIONS TO TRANSFER RUNWAY 18-36 & TAXIWAY C
LIGHTING FROM PRIMARY CCR TO BACKUP/SPARE CCR.

- SHUT OFF INPUT POWER (CIRCUIT BREAKER) TO BOTH
RWY 18-38 CCR'S & TURN CCR SELECTOR SWITCHES TO
OFF.
- OPERATE MANUAL TRANSFER SWITCH FOR RWY 18-36 AND
MOVE HANDLE FROM "PRIMARY" POSITION TO
"BACKUP/SPARE" POSITION.
- PULL CUTOUT HANDLE FROM PRIMARY CCR UNIT & INSERT
INTO BACKUP/SPARE CCR CUTOUT.
- GO TO RADIO RELAY INTERFACE PANEL & TURN "RWY 18-36
CCR TRANSFER" SELECTOR SWITCH FROM "PRIMARY" TO
"BACKUP/SPARE" POSITION.
- TURN ON INPUT POWER (CIRCUIT BREAKER) TO
BACKUP/SPARE RWY 18-36 CCR.
- TURN SELECTOR SWITCH ON BACKUP/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 18-36 & TAXIWAY C CCR TRANSFER
PROCEDURE PLACARD DETAIL**

DIRECTIONS TO TRANSFER RUNWAY 9-27 & "B" TAXIWAYS
LIGHTING FROM PRIMARY CCR TO BACKUP/SPARE CCR.

- SHUT OFF INPUT POWER (CIRCUIT BREAKER) TO BOTH
RWY 9-27 & "B" TWYS CCR'S & TURN CCR SELECTOR
SWITCHES TO OFF.
- OPERATE MANUAL TRANSFER SWITCH FOR RWY 9-27 & "B"
TWYS CCR'S AND MOVE HANDLE FROM "PRIMARY"
POSITION TO "BACKUP/SPARE" POSITION.
- PULL CUTOUT HANDLE FROM PRIMARY CCR UNIT &
INSERT INTO BACKUP/SPARE CCR CUTOUT.
- GO TO RADIO RELAY INTERFACE PANEL & TURN "RWY 9-27
& "B" TWYS CCR TRANSFER" SELECTOR SWITCH FROM
"PRIMARY" TO "BACKUP/SPARE" POSITION.
- TURN ON INPUT POWER (CIRCUIT BREAKER) TO
BACKUP/SPARE RWY 9-27 & "B" TWYS.
- TURN SELECTOR SWITCH ON BACKUP/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 9-27 & "B" TAXIWAYS CCR
TRANSFER PROCEDURE PLACARD DETAIL**

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.
- PER NEC 110.22 "IDENTIFICATION OF DISCONNECTING
MEANS". EACH DISCONNECTING MEANS SHALL BE LEGIBLY
MARKED TO INDICATE ITS PURPOSE AND IDENTIFY THE
POWER SOURCE THAT SUPPLIES THE DISCONNECTING
MEANS.
- PER NEC 408.4 "FIELD MARKING REQUIRED" PART (B)
"SOURCE OF SUPPLY", ALL SWITCHBOARDS, SWITCHGEAR,
AND PANELBOARDS SUPPLIED BY A FEEDER(S) SHALL BE
PERMANENTLY MARKED TO INDICATED EACH DEVICE OR
EQUIPMENT WHERE THE POWER ORIGINATES.
- PER NEC 110.24 "AVAILABLE FAULT CURRENT" PART (A) "FIELD
MARKING", SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED
IN THE FIELD WITH THE AVAILABLE FAULT CURRENT. FAULT
CURRENT INFORMATION TO BE PROVIDED BY SERVING
ELECTRIC UTILITY COMPANY OR FROM DATA OBTAINED FROM
UTILITY TRANSFORMER NAMEPLATE. CONTACT PROJECT
ENGINEER OF RECORD TO CONFIRM FAULT CURRENT
CALCULATIONS.
- PER NEC 408.6 "SHORT-CIRCUIT CURRENT RATING" THE
AVAILABLE FAULT CURRENT AND THE DATE, THE
CALCULATION WAS PERFORMED SHALL BE FIELD MARKED ON
THE ENCLOSURE AT THE POINT OF SUPPLY. FAULT CURRENT
INFORMATION TO BE PROVIDED BY SERVING ELECTRIC
UTILITY COMPANY OR FROM DATA OBTAINED FROM UTILITY
TRANSFORMER NAMEPLATE. CONTACT PROJECT ENGINEER
OF RECORD TO CONFIRM FAULT CURRENT CALCULATIONS.
- VERIFY ALL POWER SOURCES TO EQUIPMENT, REPORT ANY
VARIATIONS FROM THE SCHEDULE TO AIRPORT MANAGER
AND ENGINEER OF RECORD. PROVIDE CORRECTIVE
LABELING FOR RESPECTIVE POWER SOURCE WHERE
APPLICABLE. SAFETY OF PERSONNEL IS THE PRIORITY.
- 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 "ARC-FLASH HAZARD
WARNING".
- CONTRACTOR SHALL PROVIDE APPROPRIATE LABELS ON
ELECTRICAL EQUIPMENT, IN ACCORDANCE WITH NFPA 70E
ARTICLE 130 WORK INVOLVING ELECTRICAL HAZARDS, PART
130.5 ARC FLASH RISK ASSESSMENT, (H) EQUIPMENT
LABELING. WHERE MAXIMUM CALCULATED FAULT CURRENT
EXCEEDS 25,000 AMPS CONTACT PROJECT ENGINEER.
- ALL LABELING WILL BE CONSIDERED INCIDENTAL TO THE
RESPECTIVE WORK.
- LEGEND PLATES MUST BE PLACED WHERE THEY ARE
CLEARLY VISIBLE FOR THE RESPECTIVE EQUIPMENT OR
DEVICE. WHERE THE EQUIPMENT/DEVICE DOES NOT HAVE
ADEQUATE SPACE TO ACCOMMODATE THE LABEL OR
LEGEND PLATE INSTALL THE LABEL/LEGEND PLATE
IMMEDIATELY ADJACENT TO OR ABOVE THE RESPECTIVE
DEVICE. INCLUDE MOUNTING PLAQUE SUITABLE FOR THE
RESPECTIVE ENVIRONMENT.



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**LITCHFIELD
MUNICIPAL AIRPORT**

1201 US Route 66 South
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COVERING ELECTRICAL DESIGN

DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

**REPLACE AIRPORT
LIGHTING VAULT**

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
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ISSUE: SEPTEMBER 12, 2025

PROJECT NO: 24A0003.00

CAD FILE: E-614.DWG

DESIGN BY: KNL 06/25/2025

DRAWN BY: AJC 07/17/2025

REVIEWED BY: KNL 7/25/2025

SHEET TITLE

**LEGEND PLATE
SCHEDULES SHEET 1**

FOR BID

SEP 16, 2025 11:55 AM C:\FAF\T0387
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FAULT CURRENT CALCULATION LEGEND PLATE SCHEDULE	
DEVICE	LABEL
MAIN SERVICE DISCONNECT FOR VAULT	MAX AVAILABLE FAULT CURRENT AT POLE MOUNT 75KVA UTILITY TRANSFORMER SECONDARY WAS CALCULATED BY AMEREN TO BE: 23,440 AMPS ON 7/18/2025 MAX AVAILABLE FAULT CURRENT AT VAULT SERVICE DISCONNECT WAS CALCULATED TO BE: 13,892 AMPS ON 9/11/2025
VAULT MAIN DISTRIBUTION PANELBOARD	MAX AVAILABLE FAULT CURRENT AT POLE MOUNT 75KVA UTILITY TRANSFORMER SECONDARY WAS CALCULATED BY AMEREN TO BE: 23,440 AMPS ON 7/18/2025 MAX AVAILABLE FAULT CURRENT AT VAULT MAIN DIST. PANEL WAS CALCULATED TO BE: 8,800 AMPS ON 9/11/2025
MAIN SERVICE DISCONNECT FOR HANGAR BLDG 3	MAX AVAILABLE FAULT CURRENT AT POLE MOUNT 75KVA UTILITY TRANSFORMER SECONDARY WAS CALCULATED BY AMEREN TO BE: 23,440 AMPS ON 7/18/2025 MAX AVAILABLE FAULT CURRENT AT HANGAR BLDG 3 SERVICE DISCONNECT WAS CALCULATED TO BE: 13,892 AMPS ON 9/11/2025
HANGAR BLDG 3 MAIN DISTRIBUTION PANELBOARD	MAX AVAILABLE FAULT CURRENT AT POLE MOUNT 75KVA UTILITY TRANSFORMER SECONDARY WAS CALCULATED BY AMEREN TO BE: 23,440 AMPS ON 7/18/2025 MAX AVAILABLE FAULT CURRENT AT HANGAR BLDG 3 MAIN DIST. PANEL WAS CALCULATED TO BE: 7,474 AMPS ON 9/11/2025



OSHA-NEC CLEARANCE LABEL FOR SERIES CIRCUIT DISCONNECT/CUTOUT ENCLOSURES. LABELS SHALL BE APPROXIMATELY 3.5" BY 5". PROVIDE THESE LABELS (OR EQUIVALENT) FOR ALL CUTOUT ENCLOSURES.

WARNING LABEL DETAIL FOR CUTOUT OPERATION



EXAMPLE OF ARC FLASH AND SHOCK HAZARD RISK LABEL FOR 120VAC, SINGLE PHASE, 2-WIRE CONTROL PANEL OR OTHER EQUIPMENT WHERE THE MAXIMUM AVAILABLE FAULT CURRENT IS LESS THAN 25,000 AMPS.

PROVIDE THESE LABELS FOR THE FOLLOWING EQUIPMENT:

- 1. VAULT RELAY INTERFACE CONTROL PANEL
- 2. L-854 RADIO CONTROLLER

ARC FLASH RISK LABEL DETAIL 1



EXAMPLE OF ARC FLASH AND SHOCK HAZARD RISK LABEL FOR 120/240 VAC, SINGLE-PHASE, 3-WIRE PANELBOARD OR OTHER EQUIPMENT WHERE THE MAXIMUM AVAILABLE FAULT CURRENT IS LESS THAN 25,000 AMPS.

PROVIDE THESE LABELS FOR THE FOLLOWING EQUIPMENT:

- 1. VAULT MAIN DIST. PANEL
- 2. TRANSFER SWITCH FOR RUNWAY 9-27 & TAXIWAYS A & B CCR'S
- 3. TRANSFER SWITCH FOR RUNWAY 18-36 & TAXIWAY C CCR'S
- 4. NAVAIDS AND VAULT FAN CONTACTOR CONTROL PANEL #1
- 5. NAVAIDS LIGHTING CONTACTOR CONTROL PANEL #2

ARC FLASH RISK LABEL DETAIL 2

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.
- PER NEC 110.22 "IDENTIFICATION OF DISCONNECTING MEANS". EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE AND IDENTIFY THE POWER SOURCE THAT SUPPLIES THE DISCONNECTING MEANS.
- PER NEC 408.4 "FIELD MARKING REQUIRED" PART (B) "SOURCE OF SUPPLY", ALL SWITCHBOARDS, SWITCHGEAR, AND PANELBOARDS SUPPLIED BY A FEEDER(S) SHALL BE PERMANENTLY MARKED TO INDICATED EACH DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES.
- PER NEC 110.24 "AVAILABLE FAULT CURRENT" PART (A) "FIELD MARKING", SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE AVAILABLE FAULT CURRENT. FAULT CURRENT INFORMATION TO BE PROVIDED BY SERVING ELECTRIC UTILITY COMPANY OR FROM DATA OBTAINED FROM UTILITY TRANSFORMER NAMEPLATE. CONTACT PROJECT ENGINEER OF RECORD TO CONFIRM FAULT CURRENT CALCULATIONS.
- PER NEC 408.6 "SHORT-CIRCUIT CURRENT RATING" THE AVAILABLE FAULT CURRENT AND THE DATE, THE CALCULATION WAS PERFORMED SHALL BE FIELD MARKED ON THE ENCLOSURE AT THE POINT OF SUPPLY. FAULT CURRENT INFORMATION TO BE PROVIDED BY SERVING ELECTRIC UTILITY COMPANY OR FROM DATA OBTAINED FROM UTILITY TRANSFORMER NAMEPLATE. CONTACT PROJECT ENGINEER OF RECORD TO CONFIRM FAULT CURRENT CALCULATIONS.
- VERIFY ALL POWER SOURCES TO EQUIPMENT, REPORT ANY VARIATIONS FROM THE SCHEDULE TO AIRPORT MANAGER AND ENGINEER OF RECORD. PROVIDE CORRECTIVE LABELING FOR RESPECTIVE POWER SOURCE WHERE APPLICABLE. SAFETY OF PERSONNEL IS THE PRIORITY.
- 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 "ARC-FLASH HAZARD WARNING".
- CONTRACTOR SHALL PROVIDE APPROPRIATE LABELS ON ELECTRICAL EQUIPMENT, IN ACCORDANCE WITH NFPA 70E ARTICLE 130 WORK INVOLVING ELECTRICAL HAZARDS, PART 130.5 ARC FLASH RISK ASSESSMENT, (H) EQUIPMENT LABELING. WHERE MAXIMUM CALCULATED FAULT CURRENT EXCEEDS 25,000 AMPS CONTACT PROJECT ENGINEER. FAULT CURRENT CALCULATIONS FOR 3LF LITCHFIELD AIRPORT VAULT PROJECT HAVE BEEN CALCULATED AND DETERMINED TO BE LESS THAN 25,000 AMPS. THEREFORE ARC FLASH RISK LABELS SHALL BE AS DETAILED ON THIS SHEET AND COMPLY WITH 2024 NFPA 70E, ARTICLE 130, PART 130.5(H). AN ADDITIONAL ARC FLASH STUDY IS NOT REQUIRED.
- ALL LABELING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE WORK.
- LEGEND PLATES MUST BE PLACED WHERE THEY ARE CLEARLY VISIBLE FOR THE RESPECTIVE EQUIPMENT OR DEVICE. WHERE THE EQUIPMENT/DEVICE DOES NOT HAVE ADEQUATE SPACE TO ACCOMMODATE THE LABEL OR LEGEND PLATE INSTALL THE LABEL/LEGEND PLATE IMMEDIATELY ADJACENT TO OR ABOVE THE RESPECTIVE DEVICE. INCLUDE MOUNTING PLAQUE SUITABLE FOR THE RESPECTIVE ENVIRONMENT.



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COVERING ELECTRICAL DESIGN

DATE SIGNED: 9/12/2025 LICENSE EXPIRES: 11/30/2027

REPLACE AIRPORT
LIGHTING VAULT

IDA No: 3LF-5221
SBG No: 3-17-SBGP-TBD

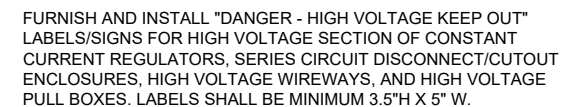
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NO.	DATE	DESCRIPTION		
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ISSUE: SEPTEMBER 12, 2025
PROJECT NO: 24A0003.00
CAD FILE: E-615.DWG
DESIGN BY: KNL 06/25/2025
DRAWN BY: AJC 07/17/2025
REVIEWED BY: KNL 7/25/2025

SHEET TITLE

LEGEND PLATE
SCHEDULES SHEET 2

FOR BID



1. 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.
2. 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 "ARC-FLASH HAZARD WARNING".
3. PROVIDE PLACARD/SIGN FOR CARBON DIOXIDE FIRE EXTINGUISHER "FOR ELECTRICAL FIRES" WITH ARROW POINTING TO EXTINGUISHER.
4. PROVIDE PLACARD/SIGN FOR ABC DRY CHEMICAL FIRE EXTINGUISHER "FOR BUILDING FIRES" WITH ARROW POINTING TO FIRE EXTINGUISHER.