

GENERAL NOTES

1. THE SCOPE OF WORK SHEET IS INTENDED ONLY AS A GENERAL DESCRIPTION OF WORK ITEMS AND THEIR APPROXIMATE LOCATIONS AND LIMITS, FOR THE PURPOSE OF UNDERSTANDING THE SCOPE OF THE PROJECT. THIS SHEET SHALL NOT BE USED AS A CONSTRUCTION PLAN. REFER TO THE FOLLOWING PLAN SHEETS FOR DETAILED CONSTRUCTION REQUIREMENTS, LOCATIONS, AND ITEMS OF WORK.
2. THE PROPOSED WORK WILL INCLUDE REPLACING THE HIGH INTENSITY RUNWAY LIGHTS ON THE PRIMARY RUNWAY AND MEDIUM INTENSITY RUNWAY LIGHTS ON THE CROSSWIND RUNWAY, WITH ASSOCIATED CABLING, CONDUITS AND DUCT WORK, JUNCTION STRUCTURES, HANDHOLES, ELECTRICAL VAULT WORK AND INCIDENTALS.
3. 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.
4. 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.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT, PRESERVE AND REPAIR THE EXISTING AIRFIELD AND ROADWAY PAVEMENTS AT ALL TIMES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING ELECTRICAL, DRAINAGE, AND PAVEMENT STRUCTURES AT NO ADDITIONAL COST TO THE CONTRACT.
6. NO EQUIPMENT SHALL BE PERMITTED TO CROSS OR USE ANY EXISTING PAVEMENT OUTSIDE THE CONSTRUCTION LIMITS, GENERAL PROJECT AREA OR HAUL ROUTE.
7. CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN RESTROOM FACILITIES.
8. UNLESS OTHERWISE NOTED, ALL DISTURBED AREAS OUTSIDE OF THE PROPOSED CONSTRUCTION LIMITS SHALL BE GRADED, SEEDED AND/OR HYDROMULCH SEEDED IN ACCORDANCE WITH ITEM 901 AND 908 AT NO ADDITIONAL COST TO THE CONTRACT.
9. ALL WASTE MATERIAL SHALL BE HAULED FROM THE AIRPORT AND PROPERLY DISPOSED OF UNLESS OTHERWISE SPECIFIED HEREIN.
10. 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.
11. THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL FOR ALL SALVAGEABLE MATERIAL REMOVED ON THE PROJECT.
12. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER / TECHNICIAN SO THEY MAY DEVELOP ONE SET OF REDLINED AS-BUILT RECORD DRAWINGS AT THE COMPLETION OF THE PROJECT.
13. THE CONSTRUCTION LIMITS SHALL BE RESTRICTED TO AREAS THAT ARE ABSOLUTELY NECESSARY TO DISTURB TO COMPLETE THE REQUIRED WORK ITEMS. LIMITS SHALL BE COORDINATED WITH THE RESIDENT ENGINEER PRIOR TO BEGINNING ANY WORK.
14. CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ALL GRASS, STONE, OR PAVEMENT DISTURBED BY CONTRACTOR'S CONSTRUCTION OPERATIONS, STAGING, AND CONSTRUCTION ACCESS ROUTES. DISTURBED AREAS TO BE REPAIRED, GRADED, AND MULCHED SEEDED IN ACCORDANCE WITH ITEMS 901 AND 908, UNLESS OTHERWISE NOTED. STAGING AREA AND SITE ACCESS RESTORATION SHALL BE INCLUDED IN THE COST OF MOBILIZATION.
15. 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/ TECHNICIAN IS TO BE INCLUDED IN THE COSTS OF PERFORMING THESE ITEMS.
16. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE PROPER PERSONS FOR THE PURPOSE OF LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES.
17. THE CONTRACTOR MUST AT ALL TIMES MAINTAIN PROPER DRAINAGE FOR ALL AREAS AFFECTED BY HIS WORK.

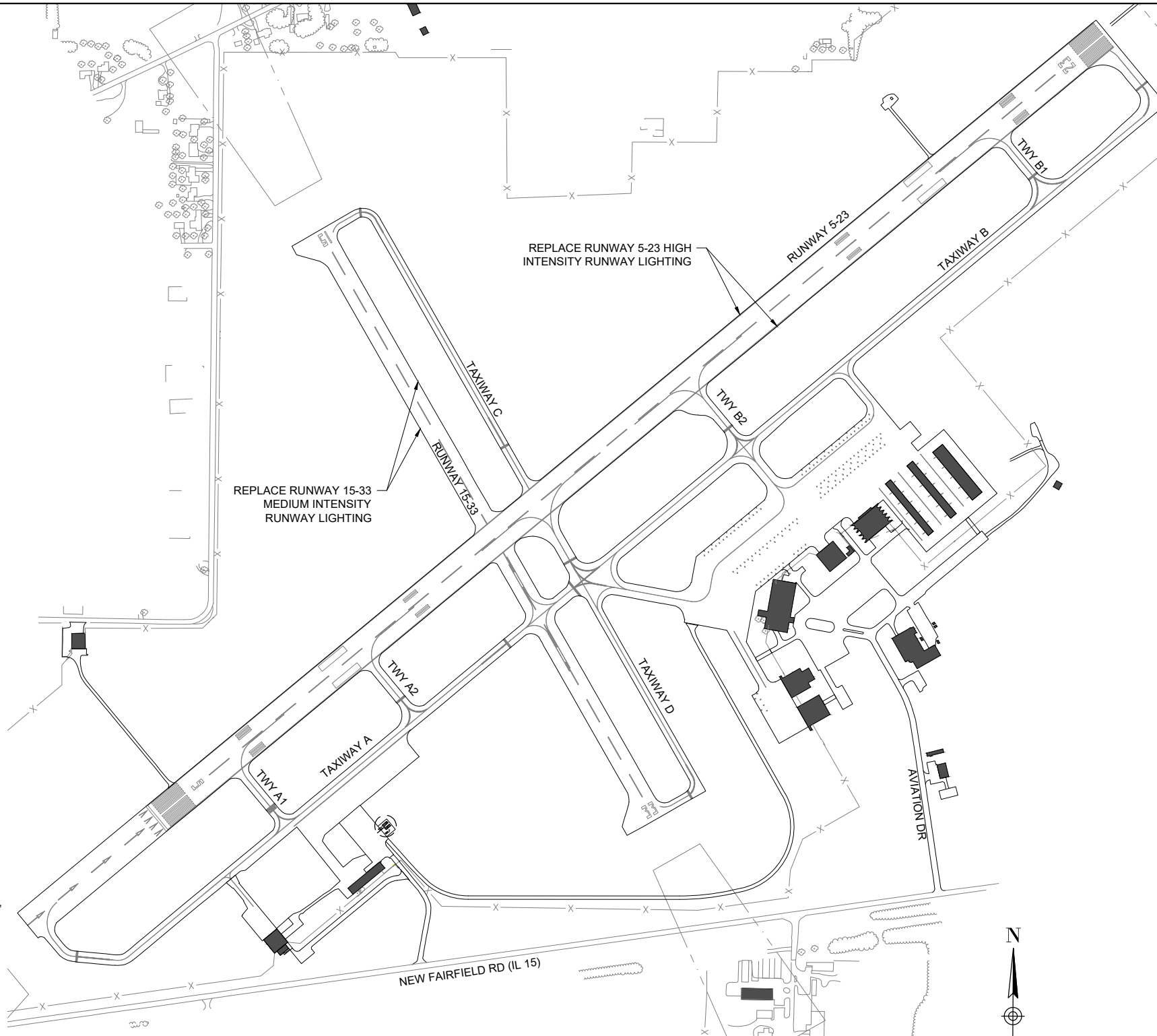
UTILITY NOTE

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 ITS 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 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 LOCATED BY THE FAA. ALSO CONTACT AIRPORT MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

J.U.L.I.E. INFORMATION

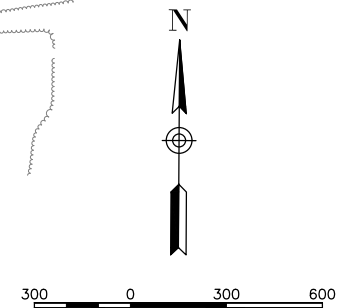
COUNTY _____ JEFFERSON
 CITY _____ MT. VERNON
 TOWNSHIP _____ MT. VERNON
 SECTION NO. _____ 22, 23, 26 & 27
 ADDRESS _____ MT. VERNON AIRPORT AUTHORITY
 100 AVIATION DRIVE
 MT. VERNON, ILLINOIS 62864



HORIZONTAL AND VERTICAL CONTROL DATA				
NO.	DESCRIPTION	NORTHING	EASTING	ELEV.
1	MAG NAIL NW CORNER CONCRETE	832,652.45	602,132.97	463.38
2	MAG NAIL SE CORNER ASPHALT	833,023.28	602,440.11	463.73
3	CHISELED "X" ON F.H. CAP BOLT	832,772	602,221	464.66

SURVEY NOTES

1. ALL COORDINATE VALUES SHOWN IN TABLE ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (2011). 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.



LEGEND:

- EXISTING PAVEMENT
- PROPOSED IMPROVEMENTS
- EXISTING BUILDINGS

FOR BID



Offices Nationwide
 www.hanson-inc.com

Hanson Professional Services Inc.
 1525 S. 6th Street
 Springfield, IL 62703
 phone: 217-788-2450
 fax: 217-788-2503

Illinois Licensed
 Professional Service Corporation
 #184-001084



100 AVIATION DRIVE
 MT VERNON, IL 62864



DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
 SBG No. 3-17-SBGP-TBD
 Contract No. MV068

NO. DATE DESCRIPTION
DES DWN REV

ISSUE: MARCH 3, 2023
 PROJECT NO: 21A0096D
 CAD FILE: G-003-SOW.DWG
 DESIGN BY: KCD 3/15/2022
 DRAWN BY: KCD 3/15/2022
 REVIEWED BY: BSS 3/24/2022

SHEET TITLE

SCOPE OF WORK

MAR 08 2023 10:00 AM SCHUB01446 1:21:05S121A096D\CAD\AIRPORT\BHEETC-03-SOW.DWG

CONSTRUCTION SAFETY PLAN

GENERAL - THE MT. VERNON OUTLAND AIRPORT IS A NON-TOWER CONTROLLED FAA PART 139 AIRPORT. IT IS COMPRISED OF TWO PAVED RUNWAYS AND THE ASSOCIATED TAXIWAY SYSTEM. THE PROPOSED CONSTRUCTION WILL NECESSITATE THE TEMPORARY CLOSURE OF RUNWAY 5-23 AND RUNWAY 15-33 FOR A PORTION OF THE PROJECT AS NOTED IN THESE PLANS.

1. THE COSTS FOR PROVISION, PLACEMENT, MAINTENANCE AND REMOVAL OF BARRICADES/DRUMS AND SIGNS AND ALL ASSOCIATED INCIDENTALS SHALL BE PAID FOR UNDER ITEM AR150530 TRAFFIC MAINTENANCE.
2. EXISTING AIRFIELD AIRPORT PAVEMENTS SHALL BE USED FOR THE CONSTRUCTION HAUL ROUTE AND STAGING AREA. AREAS SHALL BE PROTECTED AND MAINTAINED BY THE CONTRACTOR AS NECESSARY, AND ANY DAMAGE REPAIRED AT THEIR EXPENSE.

AIRFIELD SAFETY ASSURANCE - AIRFIELD SAFETY SHALL BE HELD PARAMOUNT AT ALL TIMES. ANY INDIVIDUALS RESPONSIBLE FOR INCURSIONS OR POTENTIAL INCURSIONS WITH AIR TRAFFIC DUE TO NON-COMPLIANCE WITH REQUIREMENTS SET FORTH IN THESE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND FAA ADVISORY CIRCULAR CURRENT ADDITION WILL BE SUBJECT TO AN IMMEDIATE SUSPENSION OF DRIVING PRIVILEGES ON THE AIRPORT OR A COMPLETE RESTRICTION FROM ENTERING THE AIR OPERATIONS AREA ALTOGETHER. THE AIRPORT MANAGER OR RESIDENT ENGINEER/TECHNICIAN MAY STOP THE WORK AT ANY TIME THEY BELIEVE AIRFIELD SAFETY IS BEING COMPROMISED.

1. CONTRACTOR PERSONNEL DRIVING ON THE AIRFIELD SHALL RECEIVE DRIVERS TRAINING PROVIDED BY THE AIRPORT OR WILL BE ESCORTED BY AUTHORIZED PERSONNEL.
2. WHEN THE CONTRACTOR'S VEHICLES AND EQUIPMENT ARE ON THE AIRPORT THEY SHALL BE PROPERLY MARKED WITH THREE (3') FOOT SQUARE CHECKERED FLAGS (INTERNATIONAL ORANGE AND WHITE). THE CONTRACTOR SHALL ALSO PROVIDE WORKERS WITH SOME TYPE OF TAG OR GARMENT TO IDENTIFY THE PERSON AS BEING PART OF THE CONSTRUCTION CREW.
3. THE CONTRACTOR SHALL PROVIDE A SCHEDULE AT THE PRECONSTRUCTION MEETING DETAILING THE ANTICIPATED RUNWAY CLOSURE DATES AND DURATIONS. THE CONTRACTOR SHALL ALSO NOTIFY THE SPONSOR AND RESIDENT ENGINEER/TECHNICIAN A MINIMUM OF 10 DAYS PRIOR TO THE DESIRED CLOSURE DATE TO ALLOW FOR COORDINATION WITH THE FAA REGARDING DEACTIVATION OF FAA-OWNED NAV-AIDS.
4. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE DISRUPTION TO AIRPORT TRAFFIC.

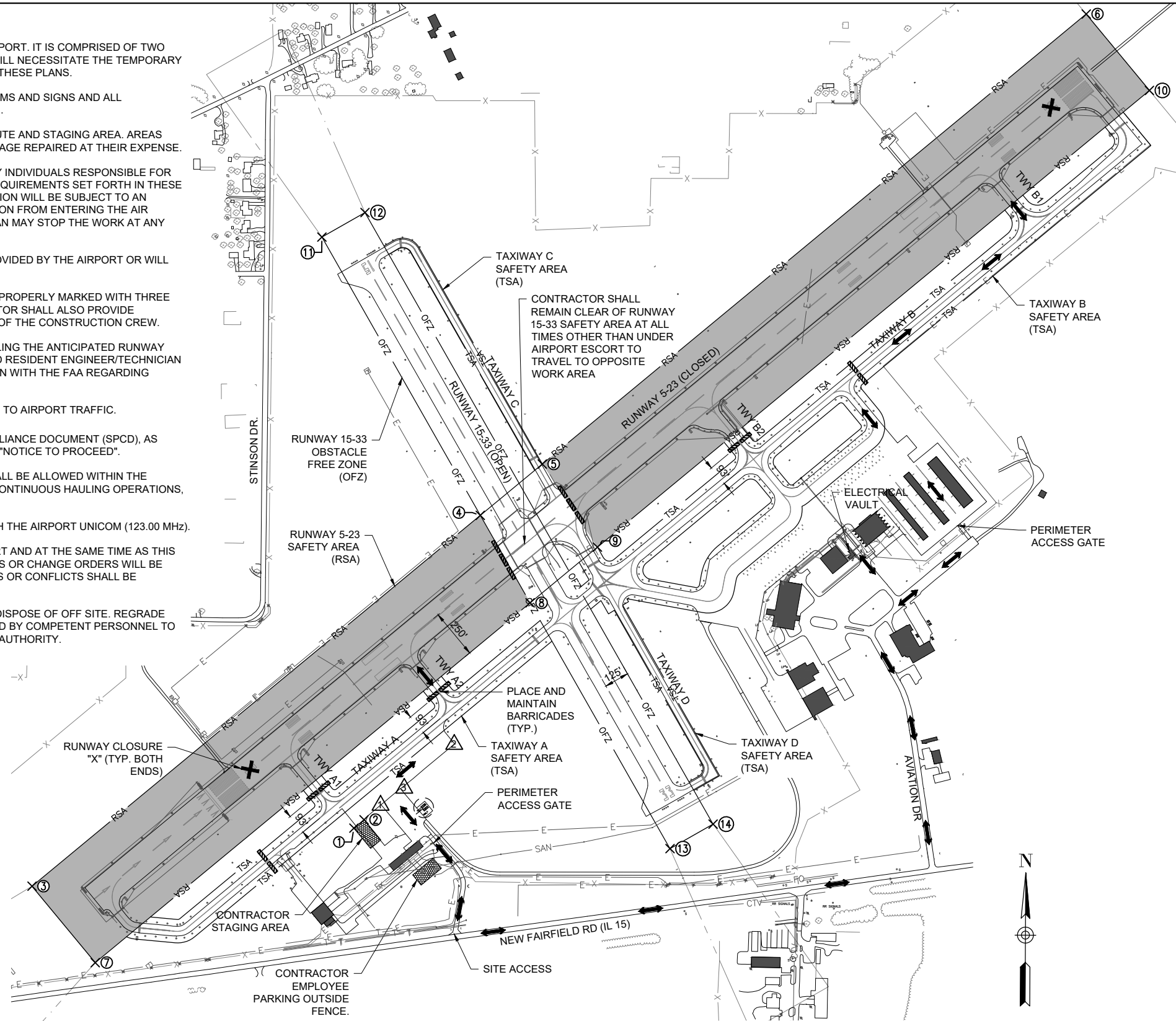
SAFETY PLAN COMPLIANCE DOCUMENT - THE CONTRACTOR SHALL HAVE THE SAFETY PLAN COMPLIANCE DOCUMENT (SPCD), AS DETAILED IN THE SPECIAL PROVISIONS, SUBMITTED AND APPROVED PRIOR TO BEING ISSUED THE "NOTICE TO PROCEED".

- 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 OPERATIONS, DURING WHICH TIME HE WILL PROVIDE A PERSON TO MONITOR THE GATE AREA.

RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT WITH THE AIRPORT UNICOM (123.00 MHz).

- ANOTHER CONTRACT (MVN-4950 - JUNE 2022 IDOT LETTING) MAY BE WORKING ON THE AIRPORT AND AT THE SAME TIME AS THIS CONTRACT. COORDINATION BETWEEN THE CONTRACTS IS MANDATORY. NO TIME EXTENSIONS OR CHANGE ORDERS WILL BE PROCESSED DUE TO LACK OF COORDINATION BETWEEN CONTRACTS. ANY POTENTIAL DELAYS OR CONFLICTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER/TECHNICIAN.

WILDLIFE MANAGEMENT CONTRACTOR TO MAINTAIN A CLEAN WORK AREA, COLLECT TRASH AND DISPOSE OF OFF SITE. REGRADE DISTURBED AREAS TO PREVENT STANDING WATER. ACCESS GATE TO REMAIN CLOSED OR MANNED BY COMPETENT PERSONNEL TO PREVENT WILDLIFE FROM ENTERING AIRFIELD, IF WILDLIFE IS SPOTTED REPORT TO THE AIRPORT AUTHORITY.



PHASE 1 NOTES

1. PHASE 1 INCLUDES REMOVING AND REPLACING HIGH INTENSITY RUNWAY EDGE LIGHTS (HIRL) ON THE SOUTHWEST AND NORTHEAST SECTIONS OF RUNWAY 5-23.
2. RUNWAY 5-23 WILL BE CLOSED DURING THIS PHASE. RUNWAY 15-33 WILL REMAIN OPEN DURING THIS PHASE.
3. THE WORK AREA SHALL BE ACCESSED FROM NEW FAIRFIELD RD (IL 15) INTO THE AIRPORT THROUGH THE DESIGNATED ACCESS ROAD AND ENTRANCE GATE AS SHOWN FOR EACH WORK AREA. CONTRACTOR SHALL PROTECT ALL EXISTING AIRPORT PAVEMENTS WHEN ENTERING AND EXITING THE SITE.
4. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
5. ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 125' OF THE RUNWAY 15-33 CENTERLINE, EXTENDED.

LEGEND:

	EXISTING PAVEMENT
	PROPOSED IMPROVEMENTS
	EXISTING BUILDINGS

CRITICAL POINTS						
POINT #	DESCRIPTION	LATITUDE	LONGITUDE	GROUND ELEV. (FT)	EQUIP. HEIGHT (FT)	MAX. HEIGHT (FT)
1	STAGING AREA	038° 19' 07.75"	-088° 51' 43.91"	465	25	490
2	STAGING AREA	038° 19' 08.17"	-088° 51' 43.27"	465	25	490
3	CONST. LIMITS	038° 19' 04.76"	-088° 52' 04.25"	464	25	489
4	CONST. LIMITS	038° 19' 23.37"	-088° 51' 36.03"	467	25	492
5	CONST. LIMITS	038° 19' 25.94"	-088° 51' 32.13"	467	25	492
6	CONST. LIMITS	038° 19' 48.52"	-088° 50' 57.88"	463	25	488
7	CONST. LIMITS	038° 19' 00.97"	-088° 52' 00.22"	465	25	490
8	CONST. LIMITS	038° 19' 19.02"	-088° 51' 32.85"	467	25	492
9	CONST. LIMITS	038° 19' 21.82"	-088° 51' 28.61"	465	25	490
10	CONST. LIMITS	038° 19' 44.73"	-088° 50' 53.86"	464	25	489



Offices Nationwide
www.hanson-inc.com

Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62703
phone: 217-788-2450
fax: 217-788-2503

Illinois Licensed
Professional Service Corporation
#184-001084



100 AVIATION DRIVE
MT VERNON, IL 62864



DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBG-TBD
Contract No. MV068

NO. DATE DESCRIPTION
DES DWN REV
ISSUE: MARCH 3, 2023
PROJECT NO: 21A0096D
CAD FILE: G-004-SFTY.DWG
DESIGN BY: KCD 3/15/2022
DRAWN BY: KCD 3/15/2022
REVIEWED BY: BSS 3/24/2022

SHEET TITLE

CONSTRUCTION SAFETY AND PHASING PLAN - PHASE 1

FOR BID



REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

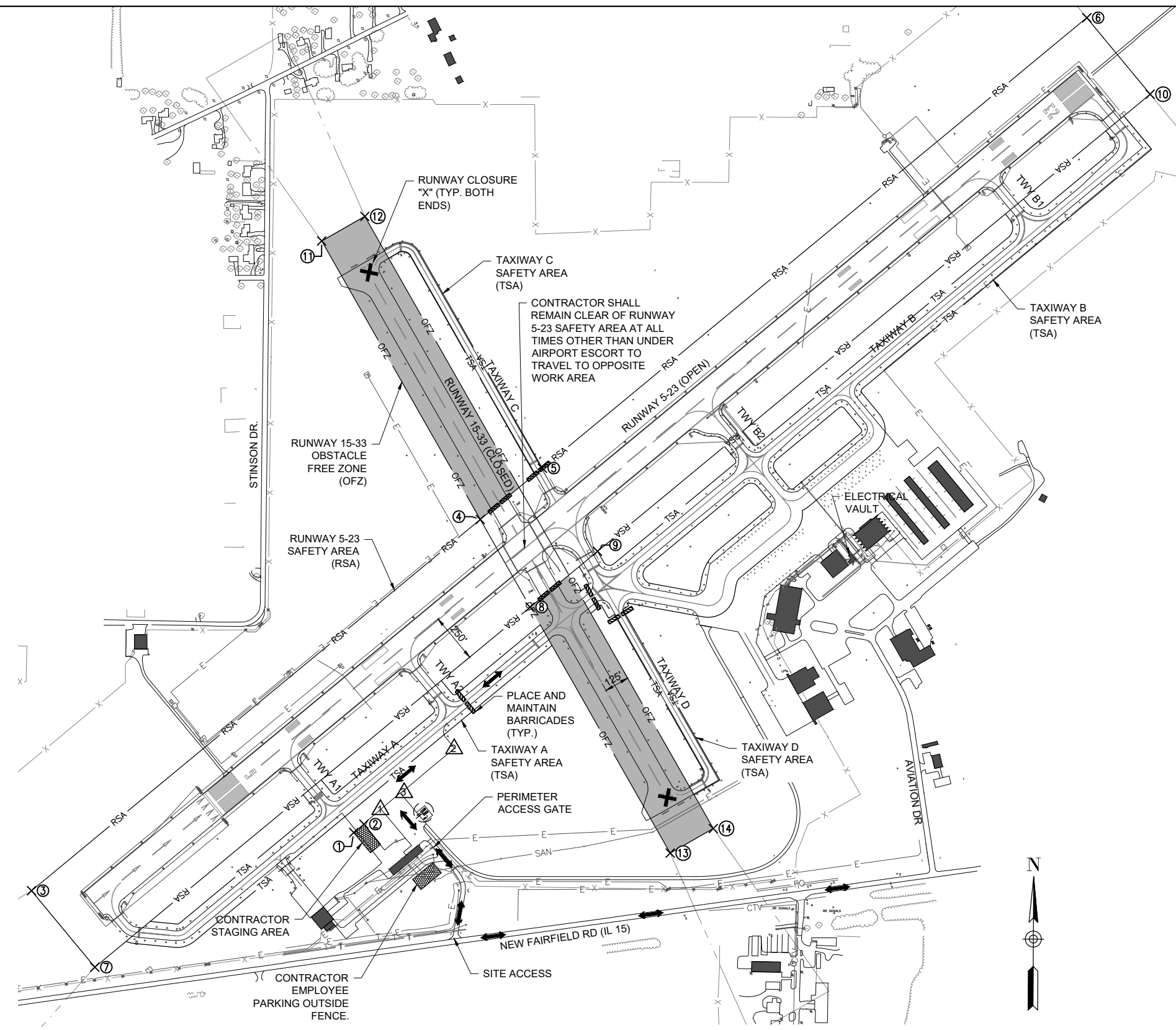
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REVIEWED BY: BSS 3/24/2022

SHEET TITLE

CONSTRUCTION SAFETY AND PHASING PLAN - PHASE 2

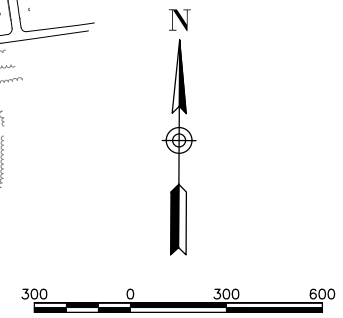
FOR BID



CRITICAL POINTS						
POINT #	DESCRIPTION	LATITUDE	LONGITUDE	GROUND ELEV. (FT)	EQUIP. HEIGHT (FT)	MAX. HEIGHT (FT)
4	CONST. LIMITS	038° 19' 23.37"	-088° 51' 36.03"	467	25	492
5	CONST. LIMITS	038° 19' 25.94"	-088° 51' 32.13"	467	25	492
8	CONST. LIMITS	038° 19' 19.02"	-088° 51' 32.85"	467	25	492
9	CONST. LIMITS	038° 19' 21.82"	-088° 51' 28.61"	465	25	490
11	CONST. LIMITS	038° 19' 37.19"	-088° 51' 46.15"	480	25	505
12	CONST. LIMITS	038° 19' 38.42"	-088° 51' 43.43"	478	25	503
13	CONST. LIMITS	038° 19' 06.81"	-088° 51' 23.91"	456	25	481
14	CONST. LIMITS	038° 19' 08.05"	-088° 51' 21.20"	455	25	480

PHASE 2 NOTES

- PHASE 2 INCLUDES REMOVING AND REPLACING MEDIUM INTENSITY RUNWAY EDGE LIGHTS (MIRL) ON THE NORTHWEST AND SOUTHEAST SECTIONS OF RUNWAY 15-33.
- RUNWAY 15-33 WILL BE CLOSED DURING THIS PHASE. RUNWAY 5-23 WILL REMAIN OPEN DURING THIS PHASE.
- THE WORK AREA SHALL BE ACCESSED FROM NEW FAIRFIELD RD (IL 15) INTO THE AIRPORT THROUGH THE DESIGNATED ACCESS ROAD AND ENTRANCE GATE AS SHOWN FOR EACH WORK AREA. CONTRACTOR SHALL PROTECT ALL EXISTING AIRPORT PAVEMENTS WHEN ENTERING AND EXITING THE SITE.
- CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
- ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 250' OF THE RUNWAY 5-23 CENTERLINE, EXTENDED.



LEGEND:

- EXISTING PAVEMENT
- PROPOSED IMPROVEMENTS
- EXISTING BUILDINGS

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REPLACE HIGH INTENSITY
RUNWAY LIGHTS (HIRL)
ON PRIMARY RUNWAY
AND REPLACE MEDIUM
INTENSITY RUNWAY
LIGHTS (MIRL) ON
CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
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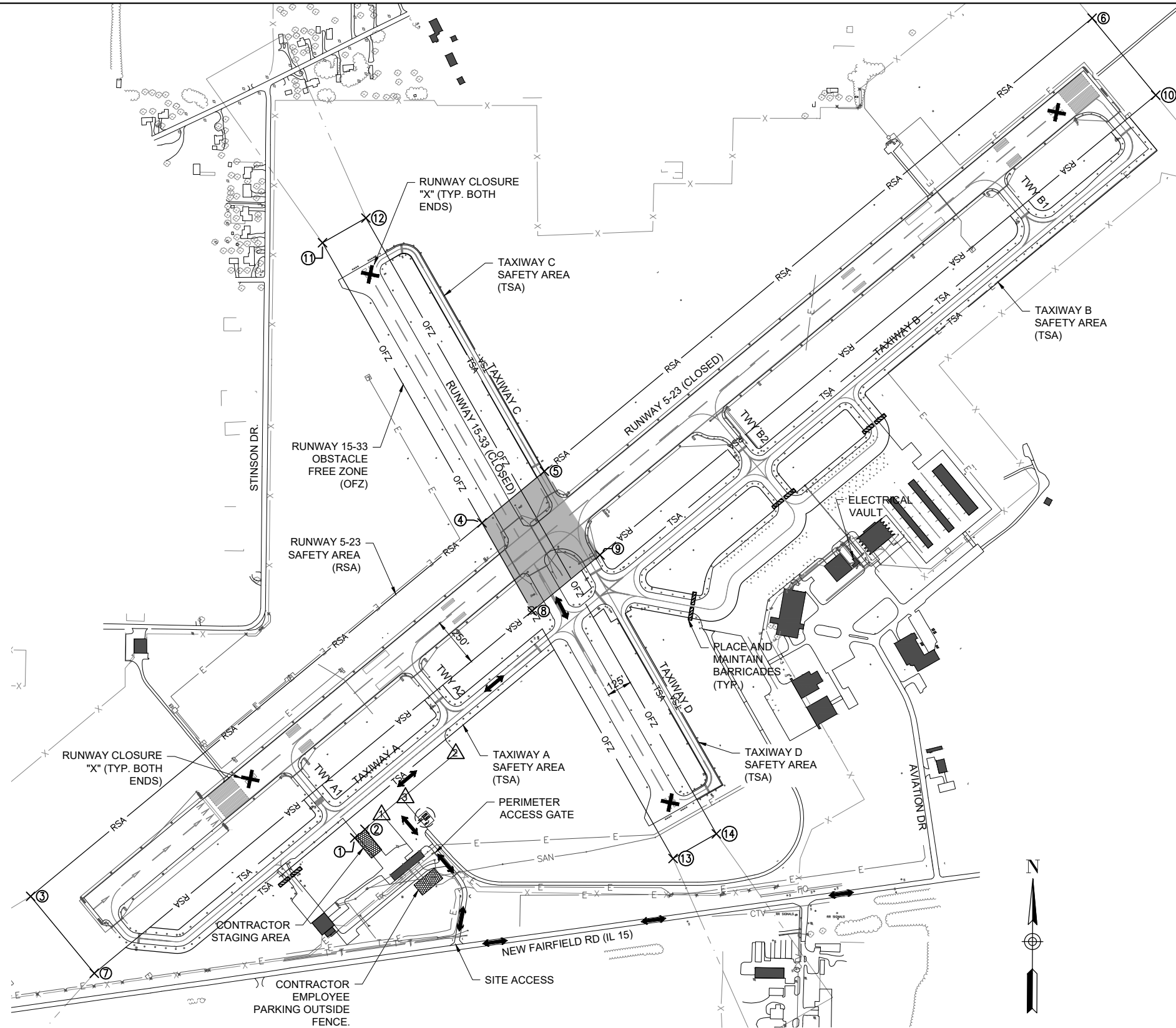
DRAWN BY: KCD 3/15/2022

REVIEWED BY: BSS 3/24/2022

SHEET TITLE

**CONSTRUCTION
SAFETY AND
PHASING PLAN -
PHASE 3**

FOR BID



LEGEND:

- EXISTING PAVEMENT
- PROPOSED IMPROVEMENTS
- EXISTING BUILDINGS

CRITICAL POINTS						
POINT #	DESCRIPTION	LATITUDE	LONGITUDE	GROUND ELEV. (FT)	EQUIP. HEIGHT (FT)	MAX. HEIGHT (FT)
4	CONST. LIMITS	038° 19' 23.37"	-088° 51' 36.03"	467	25	492
5	CONST. LIMITS	038° 19' 25.94"	-088° 51' 32.13"	467	25	492
8	CONST. LIMITS	038° 19' 19.02"	-088° 51' 32.85"	467	25	492
9	CONST. LIMITS	038° 19' 21.82"	-088° 51' 28.61"	465	25	490

PHASE 3 NOTES

- PHASE 3 INCLUDES REMOVING AND REPLACING HIGH AND MEDIUM INTENSITY RUNWAY EDGE LIGHTS (HIRL AND MIRL) AT THE INTERSECTION OF RUNWAY 5-23 AND RUNWAY 15-33.
- RUNWAY 5-23 AND RUNWAY 15-33 WILL BE CLOSED DURING THIS PHASE. HOWEVER, IF CRITICAL OPERATION MUST BE COMPLETED DURING THIS PHASE, COMMUNICATE WITH THE AIRPORT. THE CONTRACTOR SHALL HAVE A MAXIMUM OF XX CALENDAR DAYS TO COMPLETE THE WORK IN THIS PHASE.
- THE WORK AREA SHALL BE ACCESSED FROM NEW FAIRFIELD RD (IL 15) INTO THE AIRPORT THROUGH THE DESIGNATED ACCESS ROAD AND ENTRANCE GATE AS SHOWN FOR EACH WORK AREA. CONTRACTOR SHALL PROTECT ALL EXISTING AIRPORT PAVEMENTS WHEN ENTERING AND EXITING THE SITE.
- CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
- ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 250' OF EITHER RUNWAY CENTERLINE, EXTENDED.



REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBG-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
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ISSUE: MARCH 3, 2023
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SHEET TITLE

SAFETY NOTES & DETAILS

GENERAL SAFETY NOTES

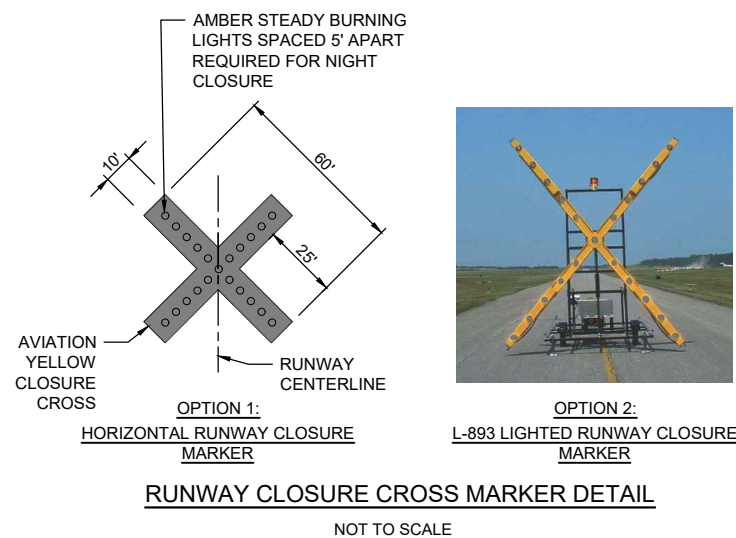
- THE FOLLOWING NOTES ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE CONSTRUCTION SAFETY AND PHASING PLAN SHEET AND THIS SHEET.
- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2G (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER/TECHNICIAN AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
- 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.
- 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.
- 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 PRE-CONSTRUCTION CONFERENCE.
- 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 150/5210-5D, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' OF ANY ACTIVE RUNWAY CENTERLINE, WITHIN 93' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA (EX. TAXIWAY), OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE RESIDENT ENGINEER/TECHNICIAN) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
- 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 150/5370-2G, "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 150/5370-2G, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
- NO OPEN TRENCHES WITHIN 250' OF AN ACTIVE RUNWAY CENTERLINE OR WITHIN 93' OF ANY TAXIWAY CENTERLINE WILL BE PERMITTED UNLESS APPROPRIATELY BACKFILLED OR COVERED. COVERING FOR OPEN TRENCHES MUST BE DESIGNED TO ALLOW SAFE OPERATIONS OF THE HEAVIEST AIRCRAFT OPERATING ON THE RUNWAY/TAXIWAY ACROSS THE TRENCH WITHOUT DAMAGING THE AIRCRAFT. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
- 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.
- NO CONSTRUCTION EQUIPMENT GREATER THAN 25' TALL WILL BE PERMITTED ON THE AIRPORT UNLESS PERMITTED WITH THE APPROVAL OF THE AIRPORT MANAGER AND AIRSPACE APPROVAL BY THE FAA.
- 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.
- SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRACKED 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.
- 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.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- 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.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
- 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.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN.
- 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.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
- NO CONSTRUCTION VEHICLES SHALL BE DRIVEN ACROSS ANY ACTIVE RUNWAY, INCLUDING TURF RUNWAYS. CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL NOT BE PERMITTED WITHIN 250' OF ANY ACTIVE RUNWAY CENTERLINE OR WITHIN 93' OF ANY OTHER ACTIVE AIRPORT TAXIWAY OR APRON. HOWEVER, CONSTRUCTION MAY BE PERMITTED IN THESE AREAS IF THE CONTRACTOR HAS GAINED APPROVAL FROM THE AIRPORT MANAGER AT LEAST 7 DAYS IN ADVANCE OF THE SCHEDULED CONSTRUCTION PERIOD AND THE OPERATIONAL AREA IS CLOSED TO TRAFFIC AND PROPER NOTAMS ARE ISSUED BY THE AIRPORT MANAGER TO THE APPROPRIATE FLIGHT SERVICE STATION.
- UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.

CLOSURE CROSS NOTES

- RUNWAY CLOSURE CROSS MARKINGS SHALL BE LIGHTED DURING DARKNESS AND PERIODS OF REDUCED VISIBILITY. THE LIGHTED MARKERS SHALL BE PLACED OVER THE RUNWAY NUMERALS OR IMMEDIATELY OFF THE END OF THE RUNWAY ON THE EXTENDED CENTERLINE, AS DIRECTED BY THE RESIDENT ENGINEER/TECHNICIAN.
- THE CONTRACTOR SHALL PROVIDE THE RUNWAY CLOSURE CROSSES BY ONE OF TWO OPTIONS:

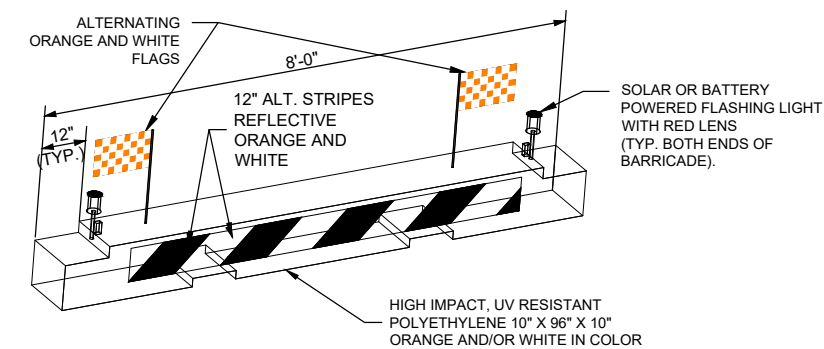
OPTION 1: TEMPORARY CLOSURE CROSS MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.

OPTION 2: THE CONTRACTOR SHALL PROVIDE TWO (2) L-893 LIGHTED RUNWAY CLOSURE MARKERS, MEETING THE REQUIREMENTS IN FAA ADVISORY CIRCULAR 150/5345-55 AND SHALL BE IN PLACE AND OPERATING WHENEVER THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED.
- THE CONTRACTOR SHALL MAKE FREQUENT INSPECTION OF THE LIGHTED CROSSES AND MAKE PROMPT REPAIRS AS NECESSARY.
- THE CONTRACTOR SHALL BE ON-CALL FOR 24-HOUR EMERGENCY MAINTENANCE WHEN LIGHTED CROSSES ARE BEING USED.
- LIGHTED MARKERS SHALL BE SECURED FROM WIND EFFECTS BY THE CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER.
- COST FOR PROVIDING, PLACING, OPERATING, MAINTAINING, RELOCATING AND REMOVING CLOSURE CROSSES SHALL BE INCLUDED IN THE COST OF THE TRAFFIC MAINTENANCE.



BARRICADE NOTES

- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- BARRICADES SHALL BE "LOW-PROFILE" WITH A MAXIMUM HEIGHT OF 18" ABOVE GROUND, EXCLUSIVE OF ASSOCIATED WARNING LIGHTS AND FLAGS.
- BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT, WITH GAPS BETWEEN BARRICADES NOT TO EXCEED 4' WIDE. BARRICADES ARE TO BE SET BACK 250' FROM THE ACTIVE RUNWAY CENTERLINE OR 93' FROM THE ACTIVE TAXIWAY CENTERLINE OR AS SHOWN ON THE PLANS.
- CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR BEFORE SUNSET AND 1/2 HOUR AFTER SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
- THE ONLY COLOR COMBINATION ON BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- COST FOR PROVIDING, PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE INCLUDED IN THE COST OF THE TRAFFIC MAINTENANCE.

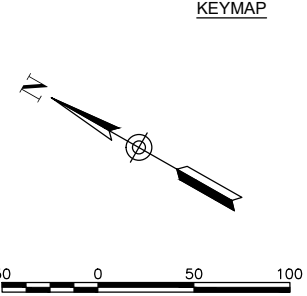
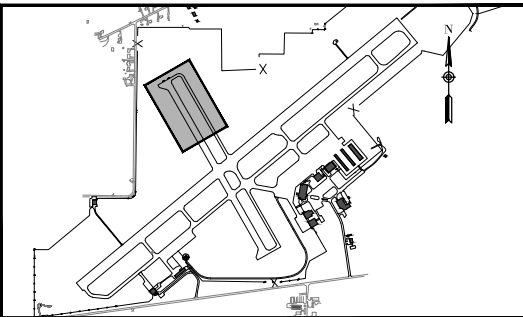
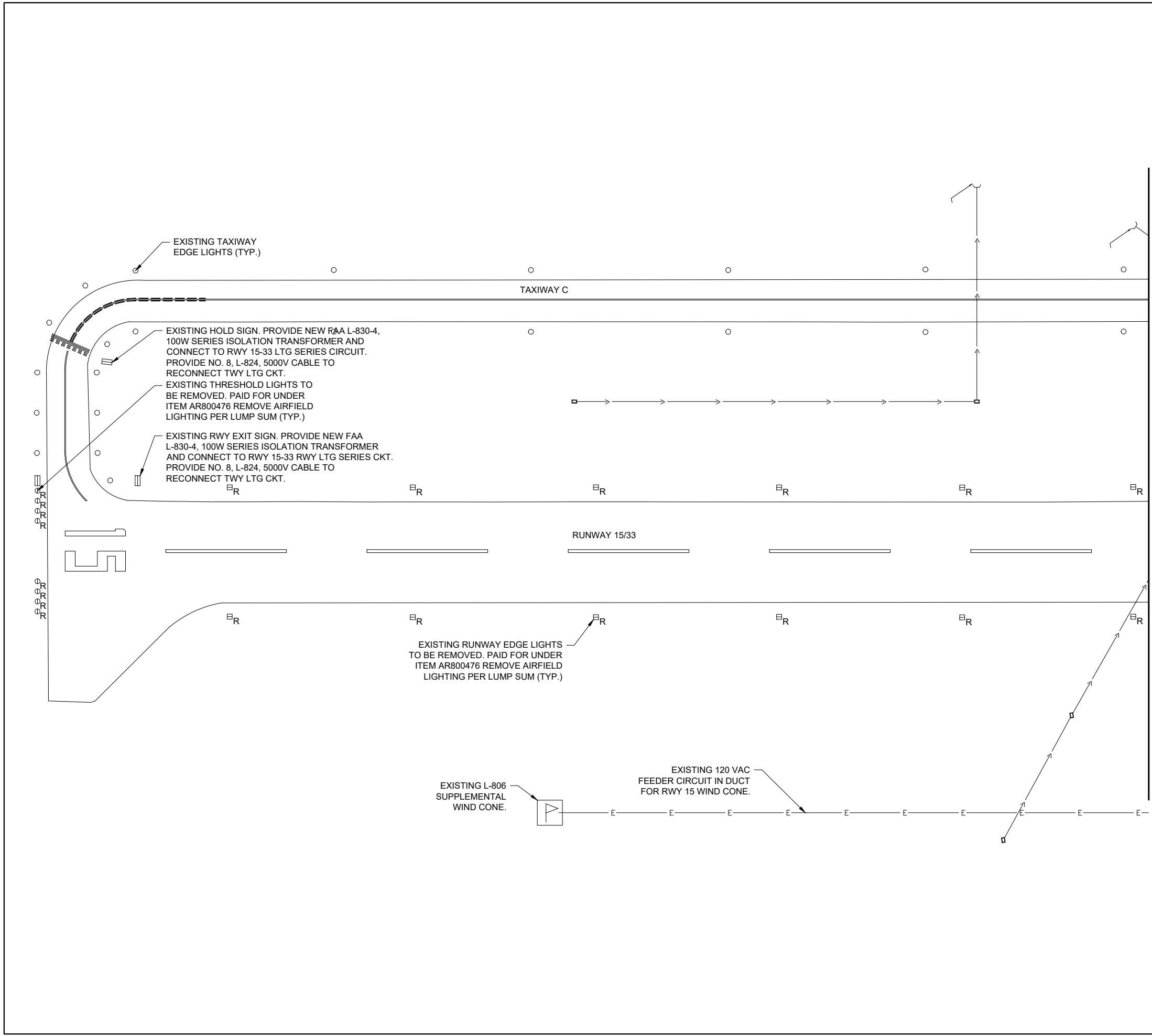


LOW-PROFILE BARRICADE DETAIL
NOT TO SCALE

DETAIL ABOVE REPRESENTS ONE OPTION FOR LOW-PROFILE BARRICADES. OTHER OPTIONS MAY BE UTILIZED AS LONG AS THEY MEET THE REQUIREMENTS OF THE PROJECT, INCLUDING BARRICADE NOTE 1.

FOR BID

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- LEGEND**
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 - [Hatched Area] EXISTING BUILDING
 - [Dashed Line] EXISTING MARKING
 - [Double Line] EXISTING ELECTRICAL DUCT
 - [Dotted Line] EXISTING ELECTRICAL CABLES
 - [Line with 'E'] EXISTING ELECTRICAL CABLES
 - [Line with 'S'] EXISTING ELECTRICAL CABLES
 - [Line with 'U'] EXISTING STORM SEWER/UNDERDRAIN
 - [Line with 'UG'] EXISTING ELECTRIC UTILITY UG PRIMARY
 - [Line with 'T'] EXISTING TELEPHONE
 - [Line with 'G'] EXISTING GAS
 - [Line with 'X'] EXISTING FENCE
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 - [Square with 'O'] EXISTING BASE MOUNTED TAXIWAY LIGHT
 - [Square with 'OR'] EXISTING TAXI/RUNWAY SIGN
 - [Square with 'R'] EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
 - [Square with 'R'] EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
 - [Circle with 'R'] EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
 - [Square with 'R'] EXISTING AIRFIELD SIGN TO BE REMOVED
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 - [Square with 'SC'] EXISTING SPLICE CAN
 - [Square with 'MH'] EXISTING ELECTRICAL MANHOLE
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 - [Square with 'P'] EXISTING WIND CONE

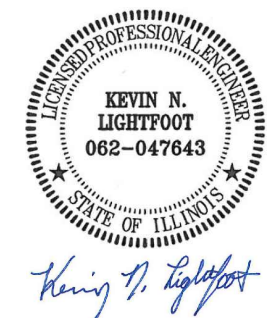
MATCH LINE - SEE NEXT SHEET

NOTE:
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DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023
REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY
 IDA No: MVN-4951
 SBG No. 3-17-SBG-1BD
 Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023
 PROJECT NO: 21A0096D
 CAD FILE: E-101-PLN.DWG
 DESIGN BY: KNL 3/12/2022
 DRAWN BY: CWS 3/15/2022
 REVIEWED BY: KNL 3/24/2022
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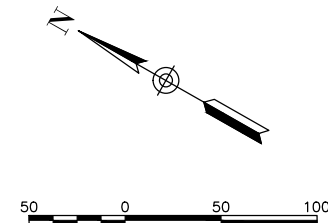
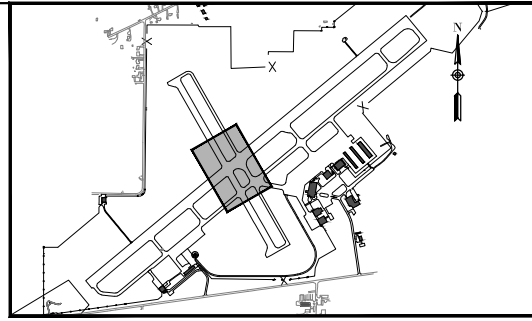
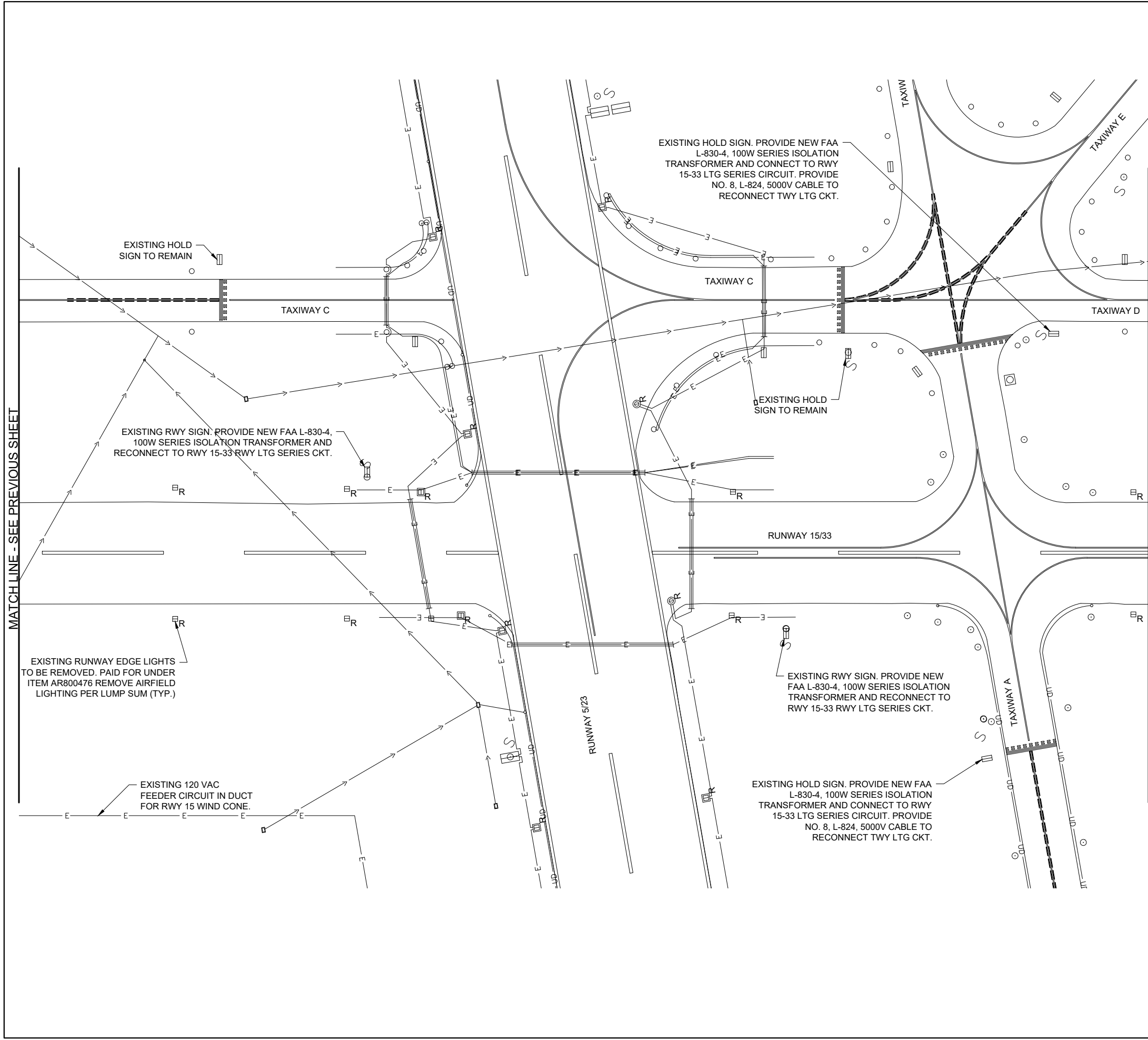
EXISTING ELECTRICAL PLAN - RUNWAY 15-33 SHEET 1

FOR BID

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MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
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- EXISTING TELEPHONE
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- EXISTING STAKE MOUNTED TAXIWAY LIGHT
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- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
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- EXISTING ELECTRICAL HANDHOLE
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- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
- EXISTING WIND CONE

NOTE:
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Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
 SBG No. 3-17-SBGP-TBD
 Contract No. MV068

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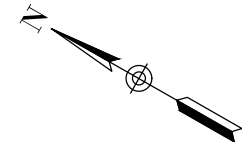
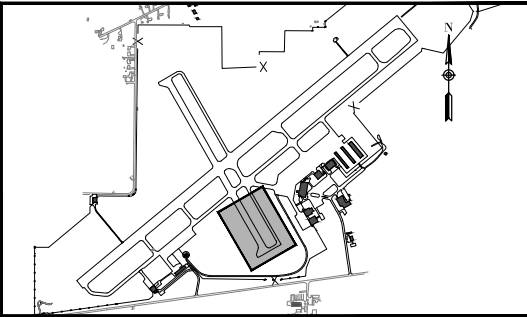
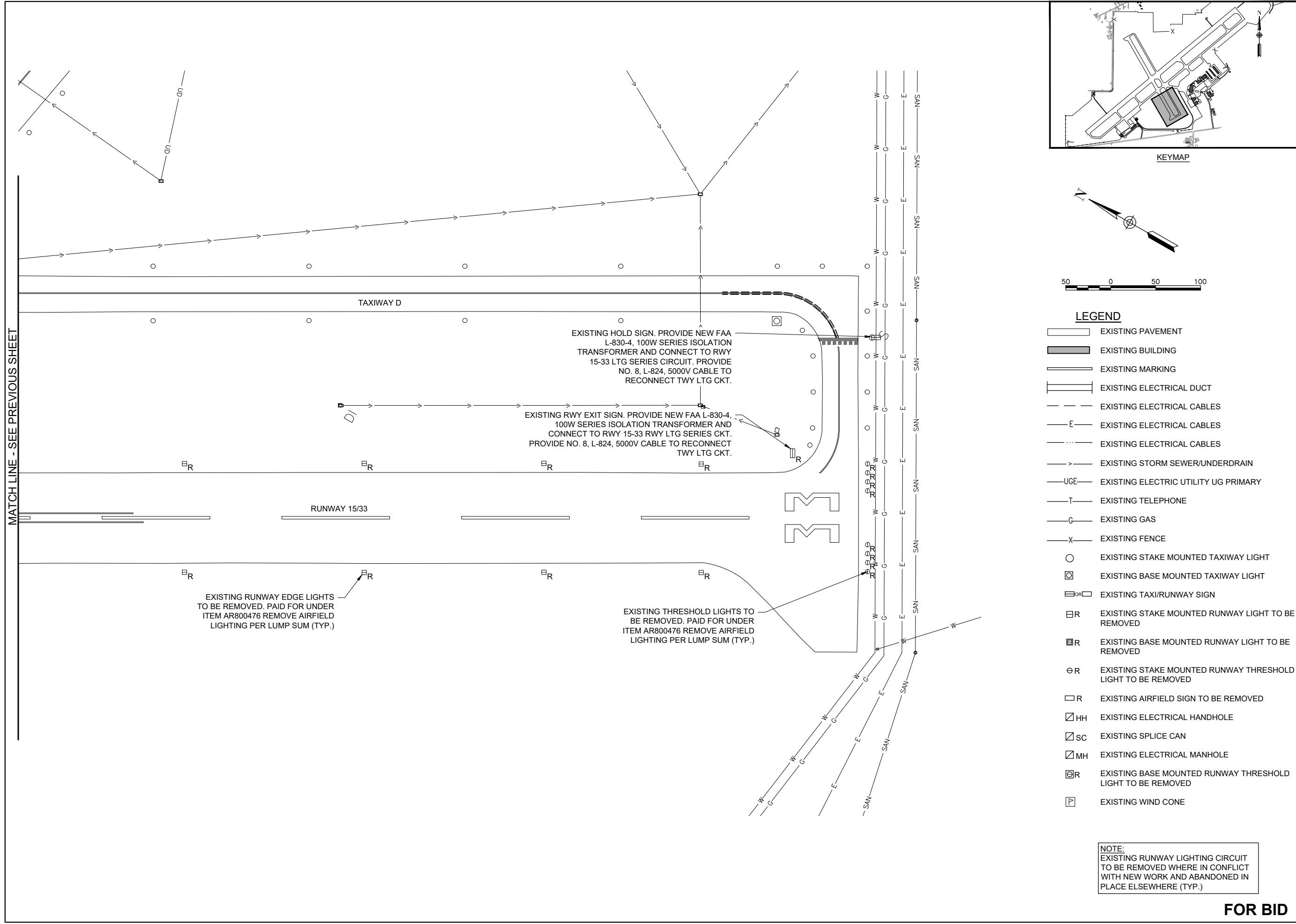
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SHEET TITLE

EXISTING ELECTRICAL PLAN -
 RUNWAY 15-33
 SHEET 2

FOR BID

MATCH LINE - SEE PREVIOUS SHEET



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING TAXI/RUNWAY SIGN
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
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- EXISTING AIRFIELD SIGN TO BE REMOVED
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN
- EXISTING ELECTRICAL MANHOLE
- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
- EXISTING WIND CONE

NOTE:
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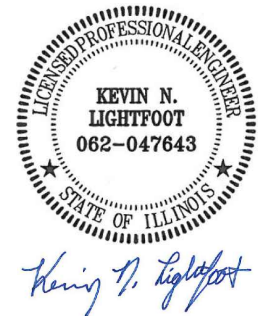
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REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
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SHEET TITLE

EXISTING ELECTRICAL PLAN -
 RUNWAY 15-33
 SHEET 3

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

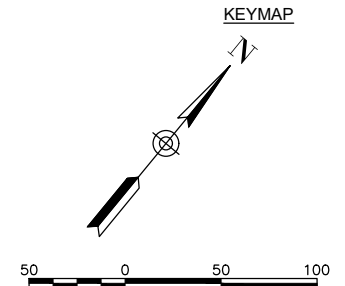
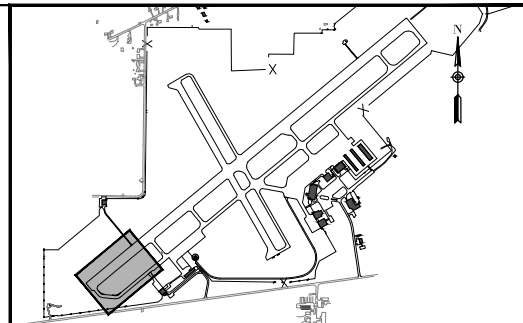
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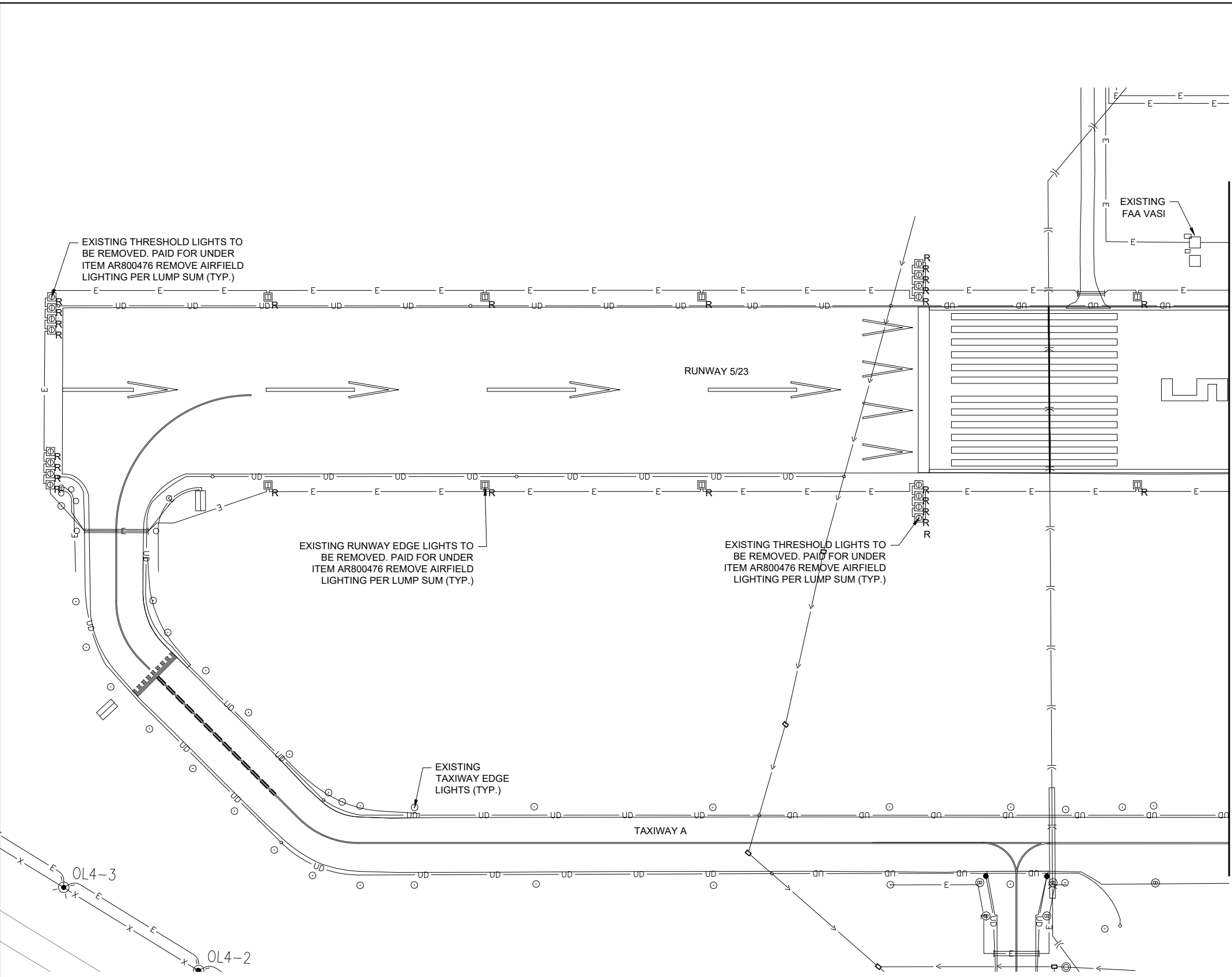
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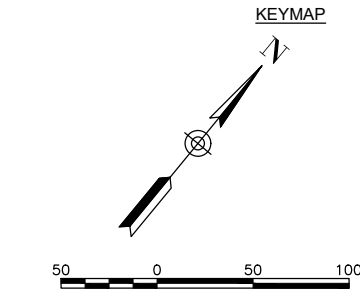
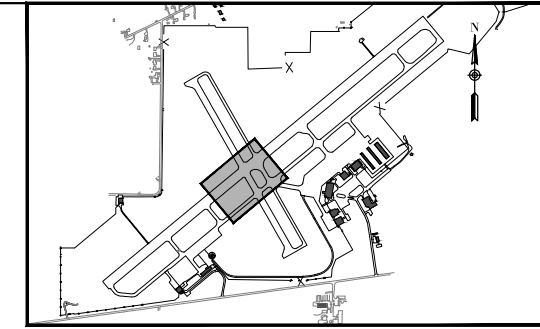
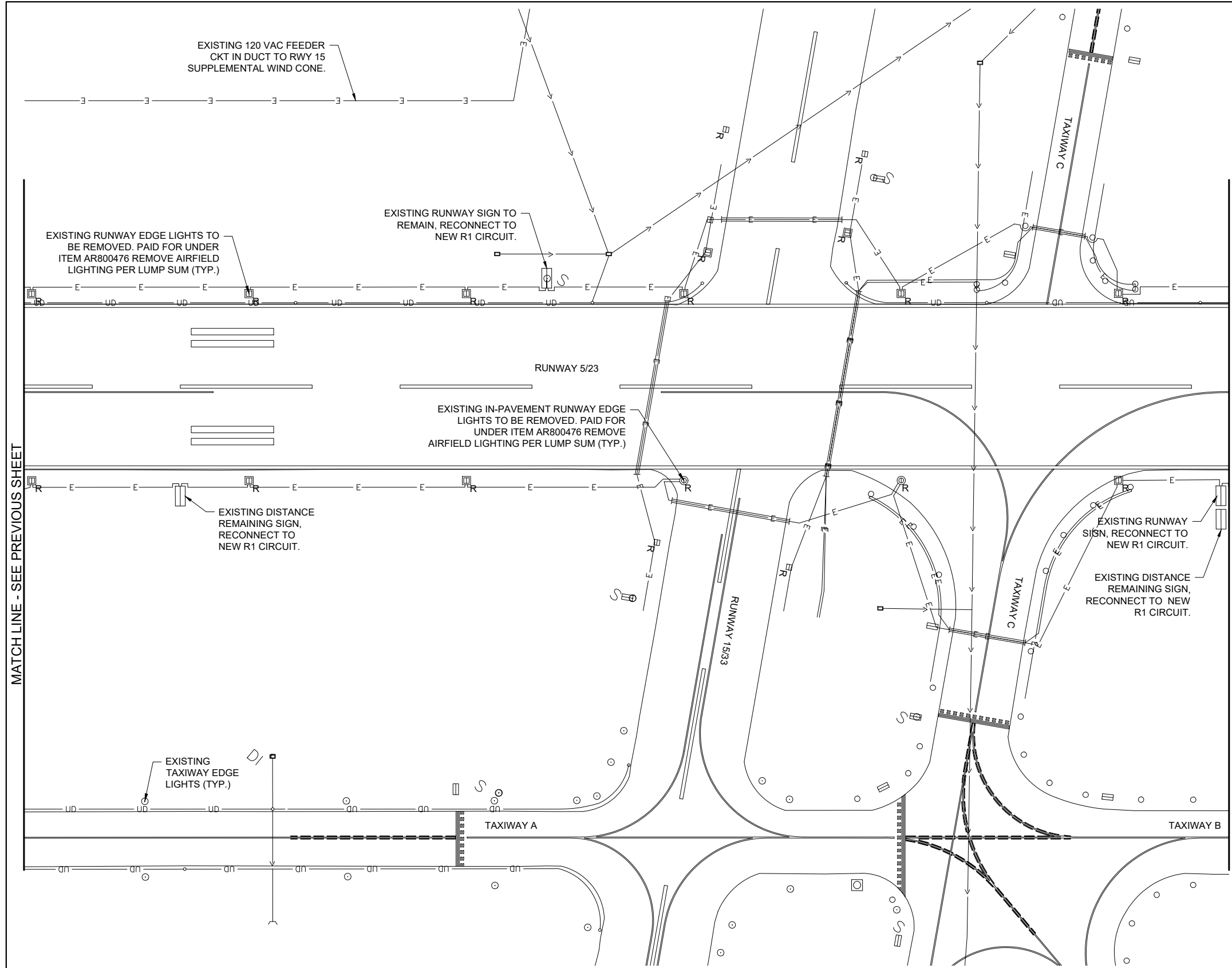
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- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
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- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
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- EXISTING AIRFIELD SIGN TO BE REMOVED
- EXISTING ELECTRICAL HANDHOLE
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- EXISTING ELECTRICAL MANHOLE
- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
- EXISTING WIND CONE

NOTE:
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MATCH LINE - SEE NEXT SHEET

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- LEGEND**
- [Solid Line] EXISTING PAVEMENT
 - [Hatched Area] EXISTING BUILDING
 - [Dashed Line] EXISTING MARKING
 - [Double Line] EXISTING ELECTRICAL DUCT
 - [Dashed Line] EXISTING ELECTRICAL CABLES
 - [Line with 'E'] EXISTING ELECTRICAL CABLES
 - [Dotted Line] EXISTING ELECTRICAL CABLES
 - [Line with '>'] EXISTING STORM SEWER/UNDERDRAIN
 - [Line with 'UG'] EXISTING ELECTRIC UTILITY UG PRIMARY
 - [Line with 'T'] EXISTING TELEPHONE
 - [Line with 'G'] EXISTING GAS
 - [Line with 'X'] EXISTING FENCE
 - [Circle with 'O'] EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - [Square with 'O'] EXISTING BASE MOUNTED TAXIWAY LIGHT
 - [Square with 'R'] EXISTING TAXI/RUNWAY SIGN
 - [Square with 'R'] EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
 - [Square with 'R'] EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
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 - [Square with 'R'] EXISTING AIRFIELD SIGN TO BE REMOVED
 - [Square with 'H'] EXISTING ELECTRICAL HANDHOLE
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023
 PROJECT NO: 21A0096D
 CAD FILE: E-101-PLN.DWG
 DESIGN BY: KNL 3/12/2022
 DRAWN BY: CWS 3/15/2022
 REVIEWED BY: KNL 3/24/2022

SHEET TITLE

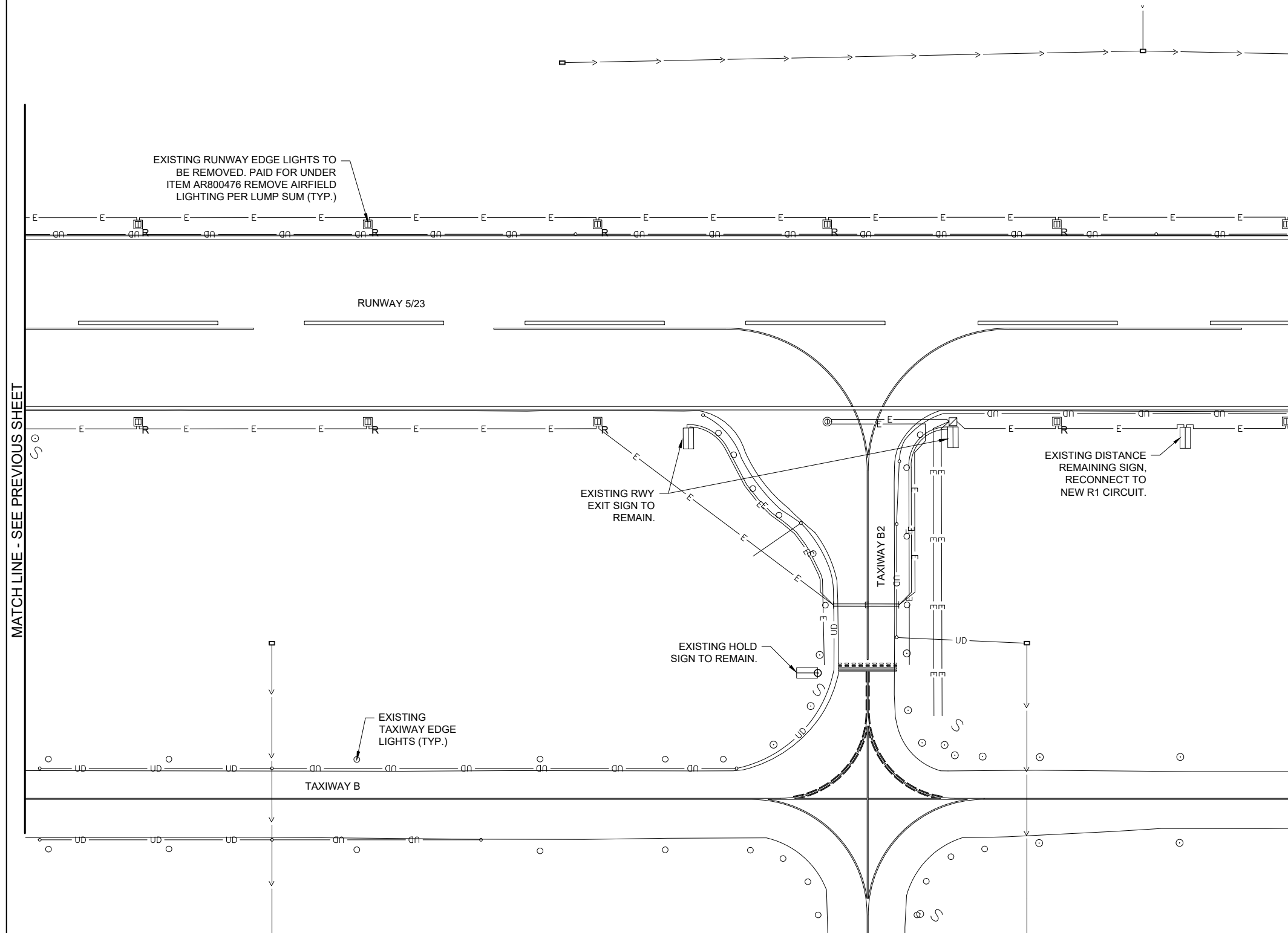
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FOR BID

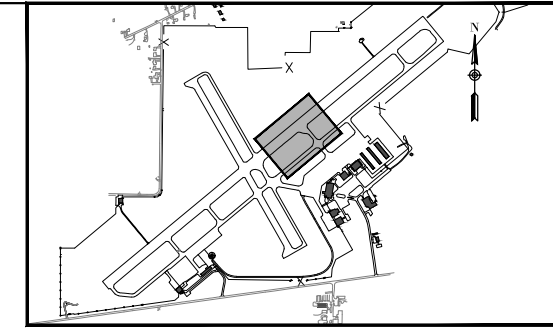
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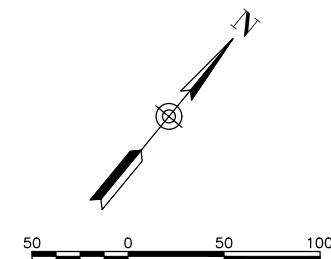
MATCH LINE - SEE NEXT SHEET



MATCH LINE - SEE SHEET 17



KEYMAP



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING TAXI/RUNWAY SIGN
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
- EXISTING AIRFIELD SIGN TO BE REMOVED
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN
- EXISTING ELECTRICAL MANHOLE
- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
- EXISTING WIND CONE

NOTE:
 EXISTING RUNWAY LIGHTING CIRCUIT TO BE REMOVED WHERE IN CONFLICT WITH NEW WORK AND ABANDONED IN PLACE ELSEWHERE (TYP.)



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100 AVIATION DRIVE
 MT VERNON, IL 62864



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
 SBG No. 3-17-SBGP-TBD
 Contract No. MV068

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SHEET TITLE

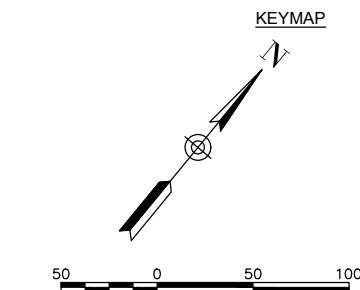
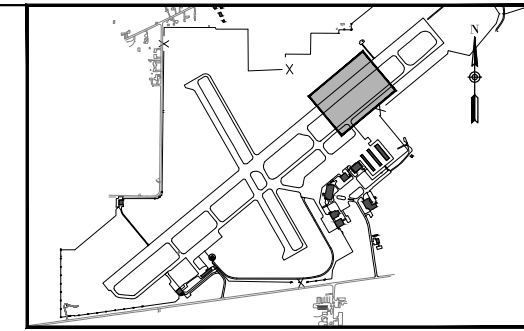
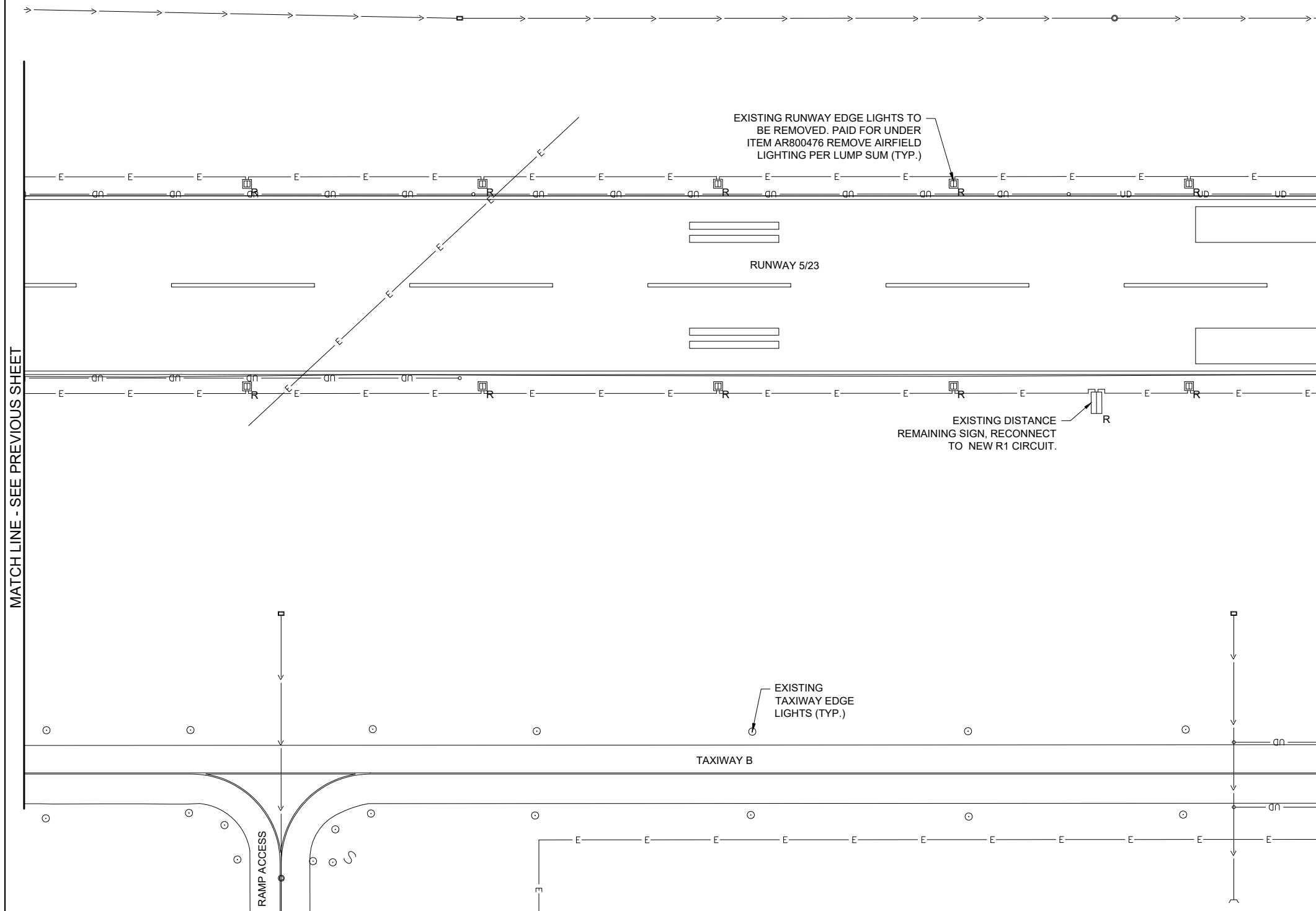
EXISTING ELECTRICAL PLAN - RUNWAY 5-23 SHEET 4

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MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



LEGEND

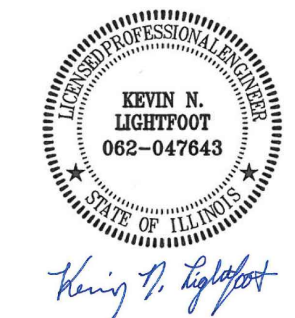
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- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING TAXI/RUNWAY SIGN
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
- EXISTING AIRFIELD SIGN TO BE REMOVED
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN
- EXISTING ELECTRICAL MANHOLE
- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
- EXISTING WIND CONE

NOTE:
 EXISTING RUNWAY LIGHTING CIRCUIT TO BE REMOVED WHERE IN CONFLICT WITH NEW WORK AND ABANDONED IN PLACE ELSEWHERE (TYP.)

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DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023
 REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY
 IDA No: MVN-4951
 SBG No. 3-17-SBGP-TBD
 Contract No. MV068

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 SHEET TITLE

EXISTING ELECTRICAL PLAN - RUNWAY 5-23 SHEET 5

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY
RUNWAY LIGHTS (HIRL)
ON PRIMARY RUNWAY
AND REPLACE MEDIUM
INTENSITY RUNWAY
LIGHTS (MIRL) ON
CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBG-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023

PROJECT NO: 21A0096D

CAD FILE: E-101-PLN.DWG

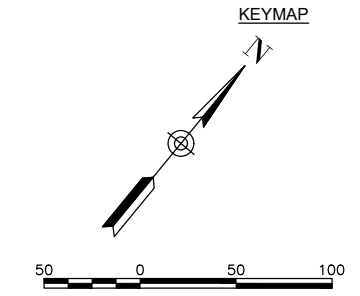
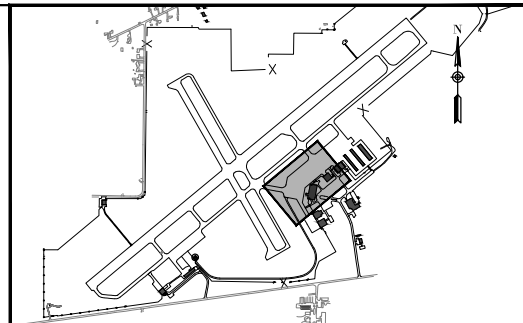
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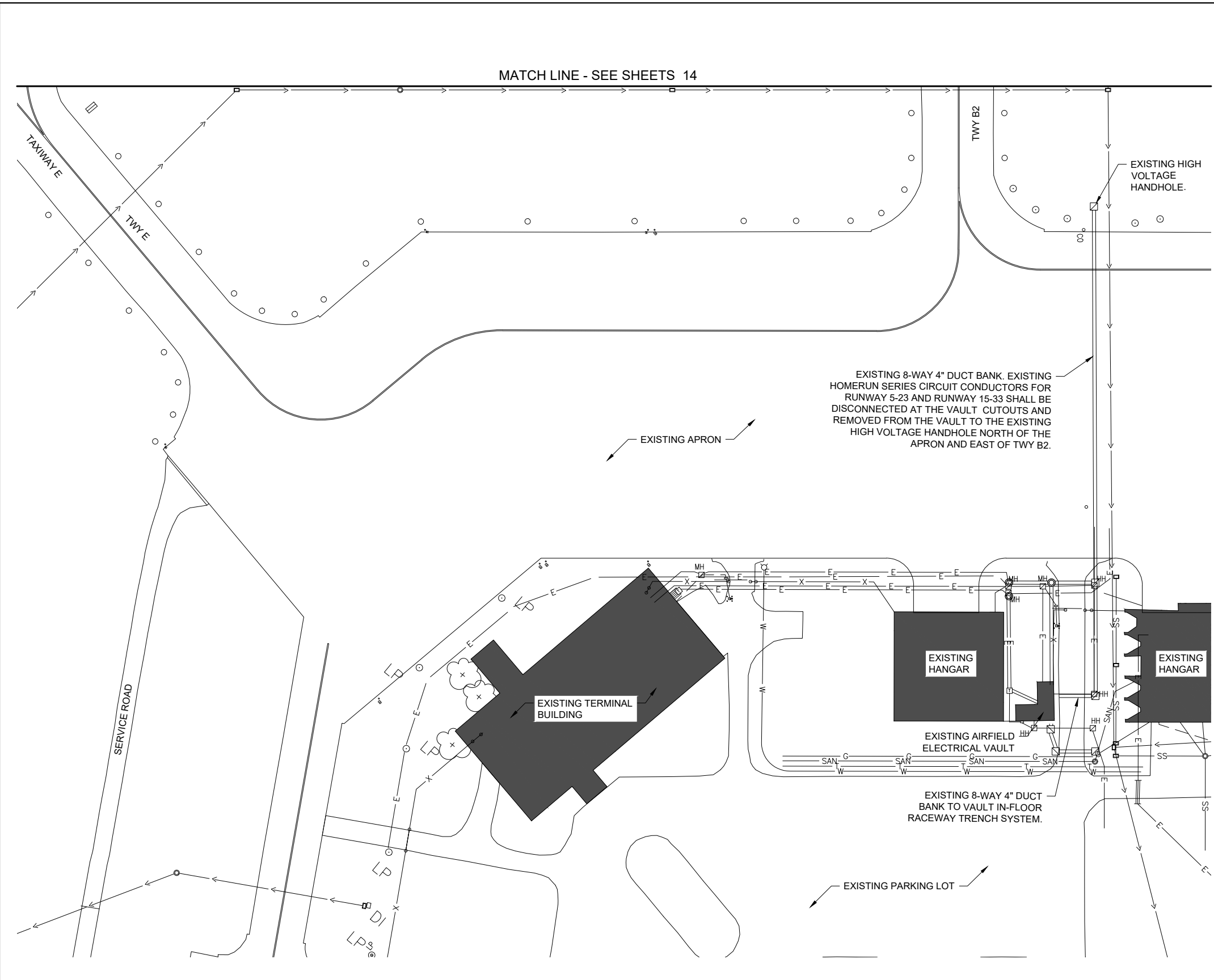
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SHEET TITLE

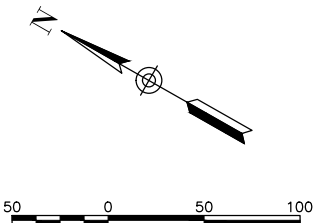
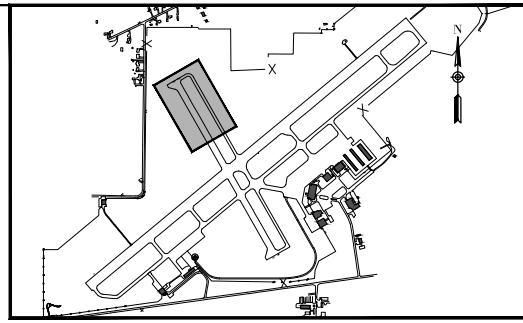
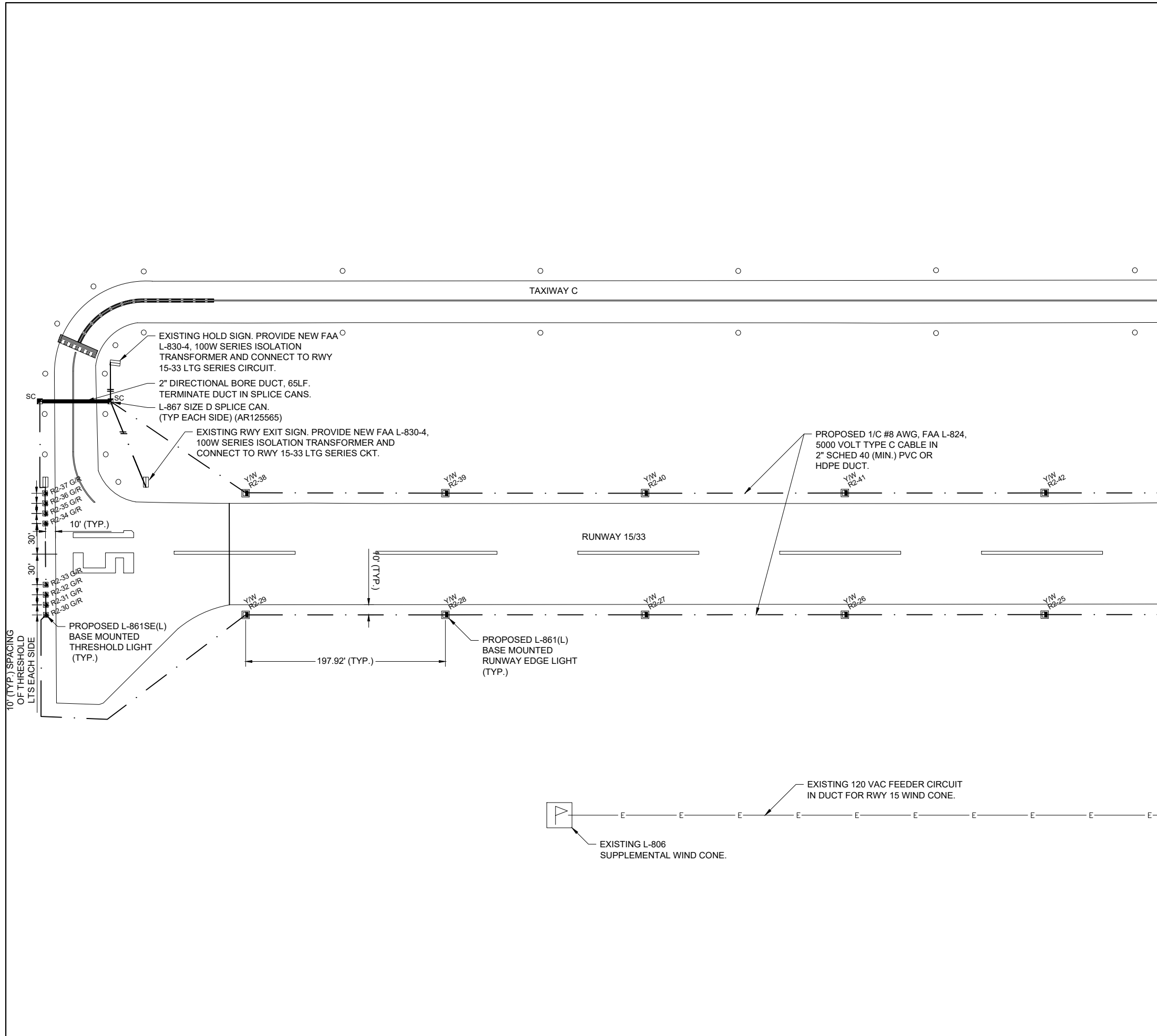
EXISTING
ELECTRICAL PLAN -
HOMERUN PLAN



- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - EXISTING ELECTRICAL CABLES
 - EXISTING ELECTRICAL CABLES
 - EXISTING ELECTRICAL CABLES
 - EXISTING STORM SEWER/UNDERDRAIN
 - EXISTING ELECTRIC UTILITY UG PRIMARY
 - EXISTING TELEPHONE
 - EXISTING GAS
 - EXISTING FENCE
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - EXISTING TAXI/RUNWAY SIGN
 - EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
 - EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
 - EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
 - EXISTING AIRFIELD SIGN TO BE REMOVED
 - EXISTING ELECTRICAL HANDHOLE
 - EXISTING SPLICE CAN
 - EXISTING ELECTRICAL MANHOLE
 - EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT TO BE REMOVED
 - EXISTING WIND CONE



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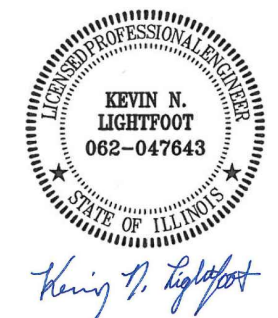
- LEGEND**
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 - [Symbol] EXISTING BUILDING
 - [Symbol] EXISTING MARKING
 - [Symbol] EXISTING ELECTRICAL DUCT
 - [Symbol] PROPOSED ELECTRICAL DUCT
 - [Symbol] EXISTING ELECTRICAL CIRCUIT
 - [Symbol] EXISTING ELECTRICAL CABLES
 - [Symbol] EXISTING STORM SEWER/UNDERDRAIN
 - [Symbol] EXISTING ELECTRIC UTILITY UG PRIMARY
 - [Symbol] EXISTING TELEPHONE
 - [Symbol] EXISTING GAS
 - [Symbol] EXISTING FENCE
 - [Symbol] PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - [Symbol] OR [Symbol] PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT
 - [Symbol] PROPOSED BASE MOUNTED RUNWAY LIGHT
 - [Symbol] PROPOSED IN PAVEMENT RUNWAY LIGHT
 - [Symbol] PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
 - [Symbol] EXISTING RUNWAY/TAXI GUIDANCE SIGN
 - [Symbol] EXISTING ELECTRICAL HANDHOLE
 - [Symbol] EXISTING ELECTRICAL MANHOLE
 - [Symbol] EXISTING SPLICE CAN
 - [Symbol] PROPOSED ELECTRICAL HANDHOLE
 - [Symbol] PROPOSED SPLICE CAN
 - [Symbol] EXISTING WIND CONE

MATCH LINE - SEE NEXT SHEET

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DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023
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IDA No: MVN-4951
 SBG No. 3-17-SBGP-TBD
 Contract No. MV068

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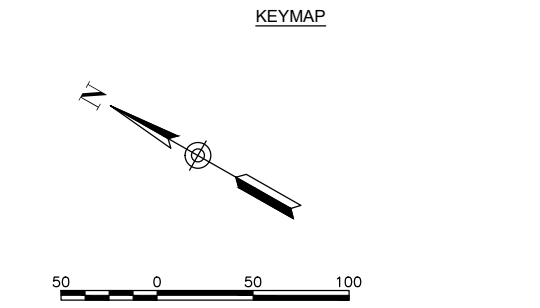
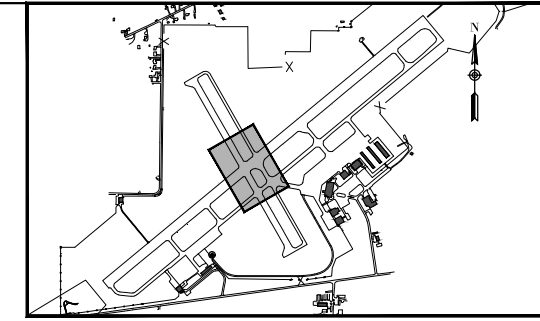
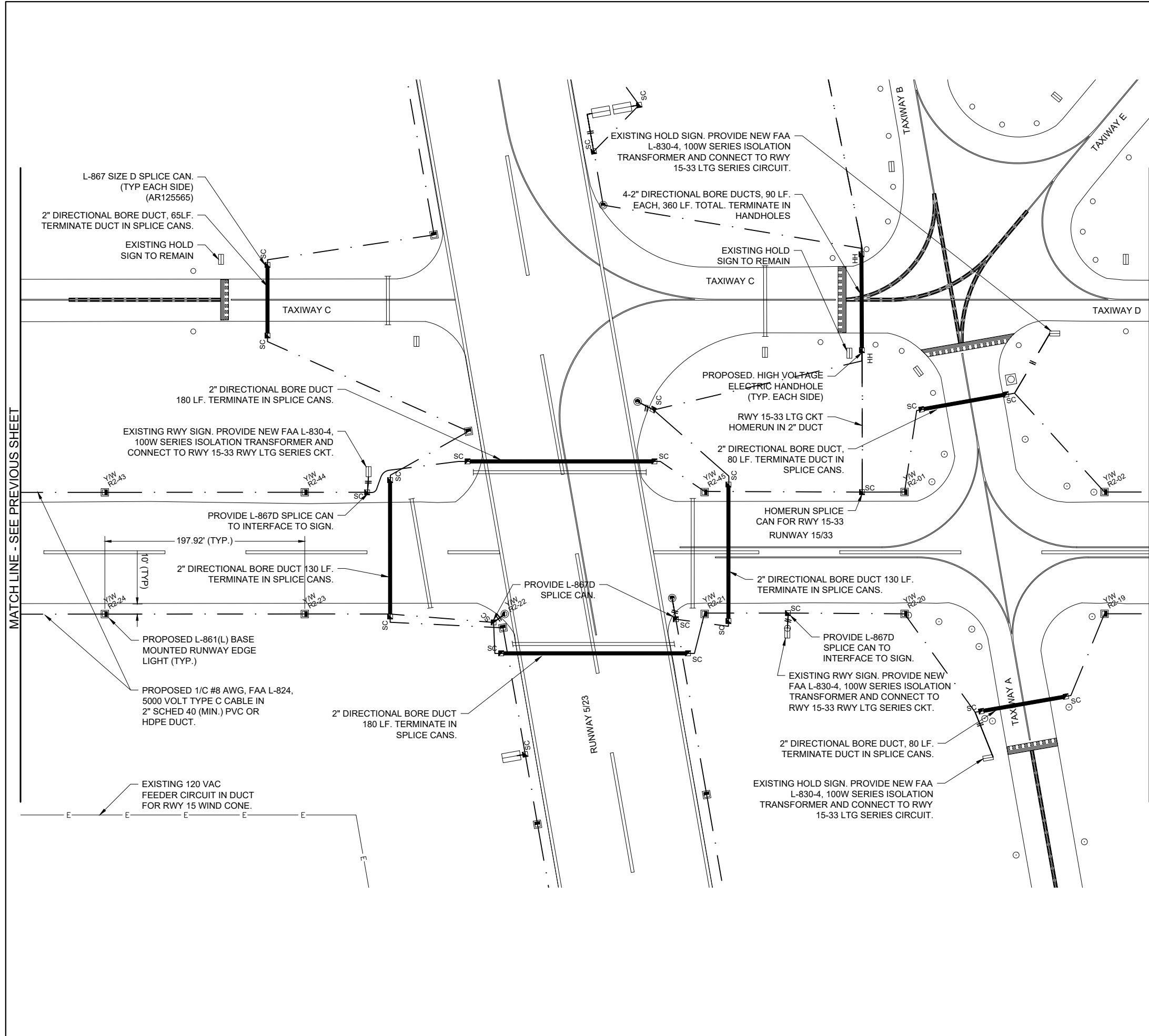
ISSUE: MARCH 3, 2023
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SHEET TITLE

PROPOSED ELECTRICAL PLAN - RUNWAY 15-33 SHEET 1

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- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
 - EXISTING ELECTRICAL CABLES
 - EXISTING STORM SEWER/UNDERDRAIN
 - EXISTING ELECTRIC UTILITY UG PRIMARY
 - EXISTING TELEPHONE
 - EXISTING GAS
 - EXISTING FENCE
 - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED IN PAVEMENT RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
 - EXISTING RUNWAY/TAXI GUIDANCE SIGN
 - EXISTING ELECTRICAL HANDHOLE
 - EXISTING ELECTRICAL MANHOLE
 - EXISTING SPLICE CAN
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - EXISTING WIND CONE

MATCH LINE - SEE PREVIOUS SHEET

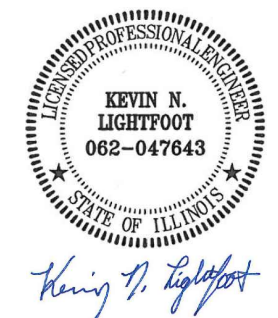
MATCH LINE - SEE NEXT SHEET

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IDA No: MVN-4951
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 Contract No. MV068

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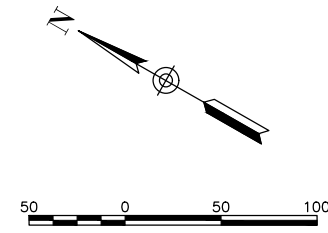
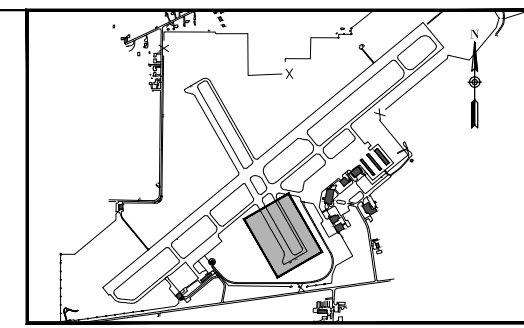
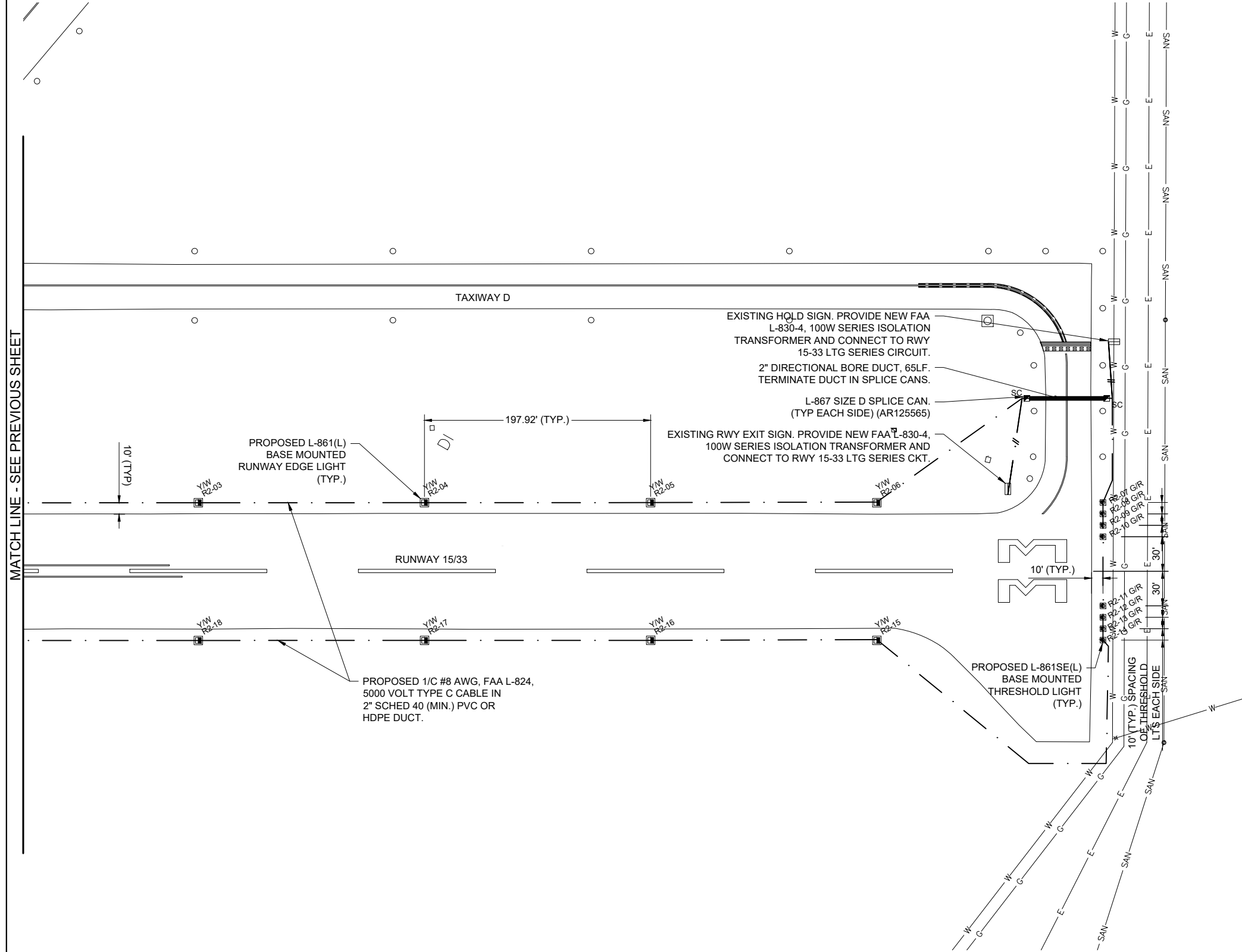
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SHEET TITLE
PROPOSED ELECTRICAL PLAN - RUNWAY 15-33 SHEET 2

FOR BID

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MATCH LINE - SEE PREVIOUS SHEET



- LEGEND**
- [White Box] EXISTING PAVEMENT
 - [Grey Box] EXISTING BUILDING
 - [Dashed Line] EXISTING MARKING
 - [Double Line] EXISTING ELECTRICAL DUCT
 - [Thick Solid Line] PROPOSED ELECTRICAL DUCT
 - [Thin Solid Line] EXISTING ELECTRICAL CIRCUIT
 - [Line with 'E'] EXISTING ELECTRICAL CABLES
 - [Line with '>'] EXISTING STORM SEWER/UNDERDRAIN
 - [Line with 'UG'] EXISTING ELECTRIC UTILITY UG PRIMARY
 - [Line with 'T'] EXISTING TELEPHONE
 - [Line with 'G'] EXISTING GAS
 - [Line with 'X'] EXISTING FENCE
 - [Line with '---'] PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - [Line with '--- OR ---'] PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - [Circle with 'O'] EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - [Circle with 'X'] EXISTING BASE MOUNTED TAXIWAY LIGHT
 - [Square with 'L'] PROPOSED BASE MOUNTED RUNWAY LIGHT
 - [Circle with 'I'] PROPOSED IN PAVEMENT RUNWAY LIGHT
 - [Square with 'L'] PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
 - [Square with 'E'] EXISTING RUNWAY/TAXI GUIDANCE SIGN
 - [Square with 'HH'] EXISTING ELECTRICAL HANDHOLE
 - [Square with 'MH'] EXISTING ELECTRICAL MANHOLE
 - [Square with 'SC'] EXISTING SPLICE CAN
 - [Square with 'HH'] PROPOSED ELECTRICAL HANDHOLE
 - [Square with 'SC'] PROPOSED SPLICE CAN
 - [Circle with 'W'] EXISTING WIND CONE



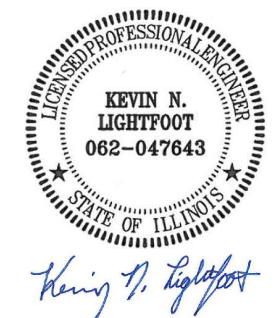
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 MT VERNON, IL 62864



DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
 SBG No. 3-17-SBGP-TBD
 Contract No. MV068

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SHEET TITLE

PROPOSED ELECTRICAL PLAN - RUNWAY 15-33 SHEET 3

FOR BID



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MT VERNON, IL 62864



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

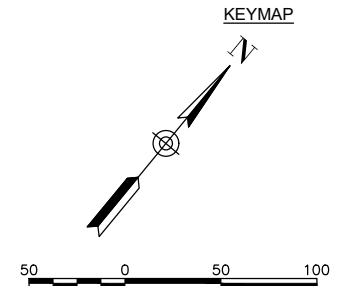
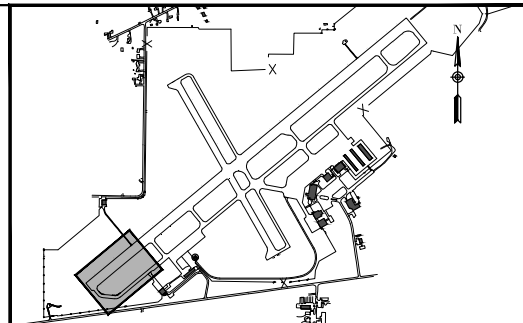
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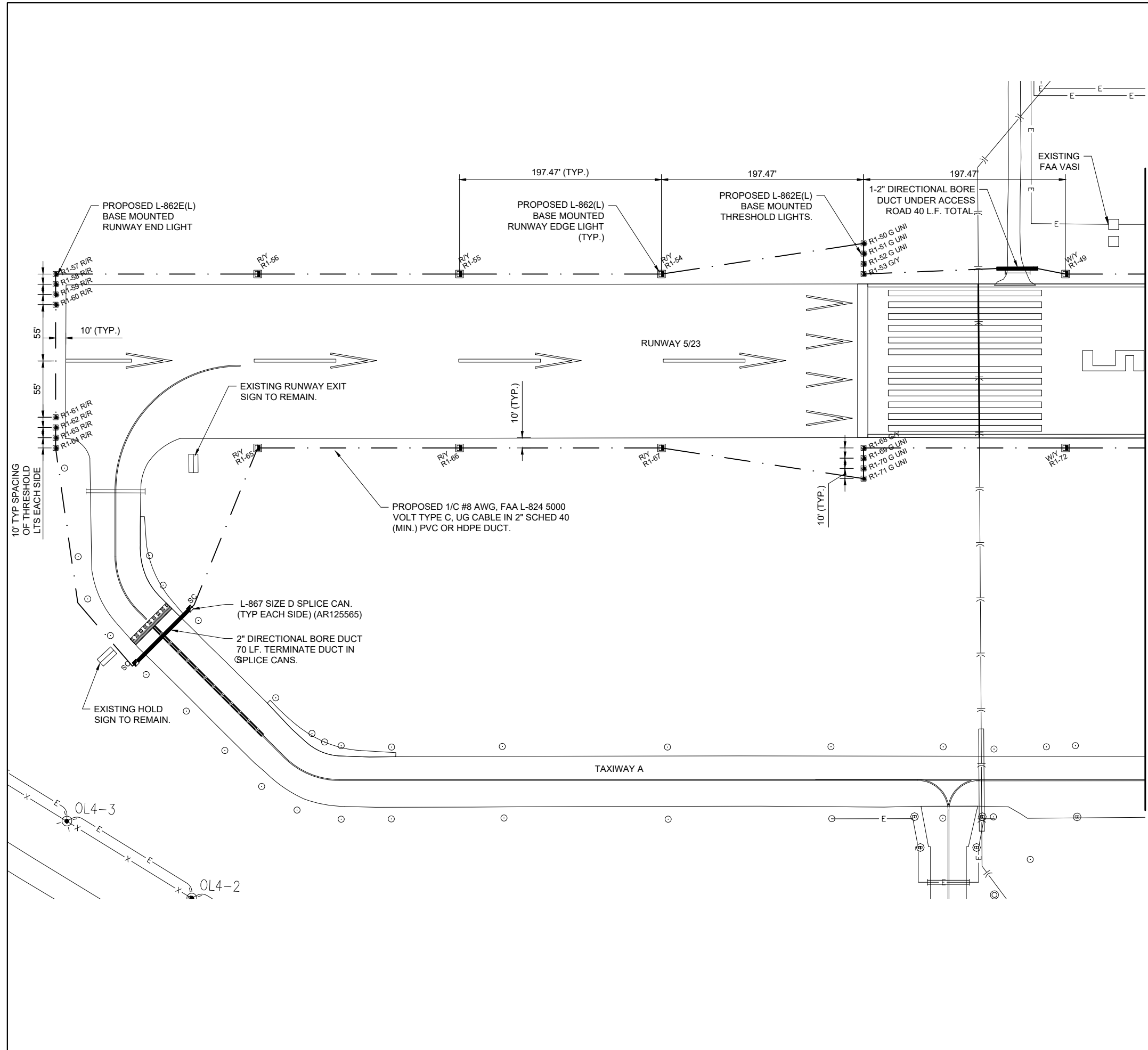
SHEET TITLE

PROPOSED ELECTRICAL PLAN - RUNWAY 5-23 SHEET 1



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
- PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED IN PAVEMENT RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED SPLICE CAN
- EXISTING WIND CONE



MATCH LINE - SEE NEXT SHEET

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

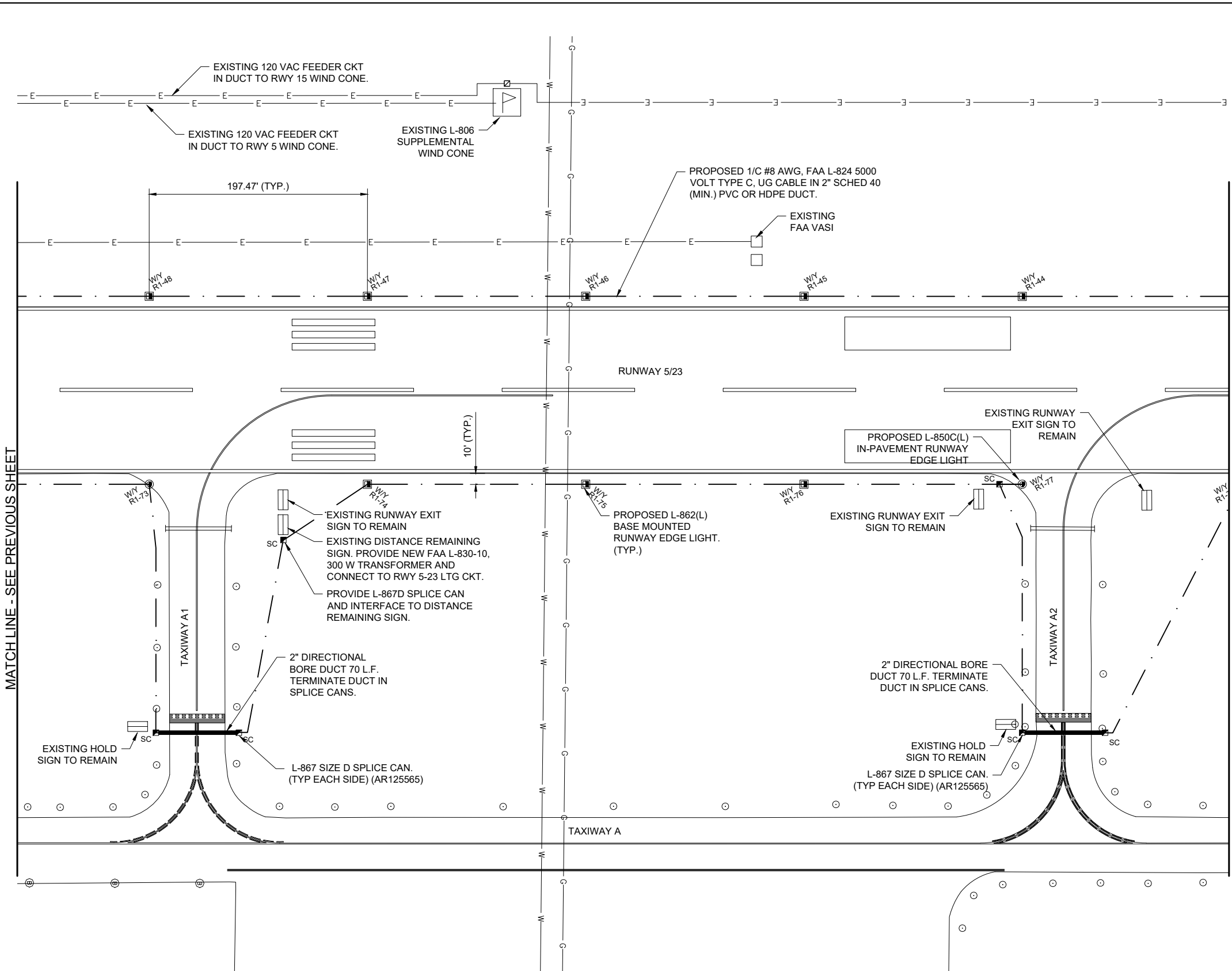
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SHEET TITLE

PROPOSED ELECTRICAL PLAN - RUNWAY 5-23 SHEET 2



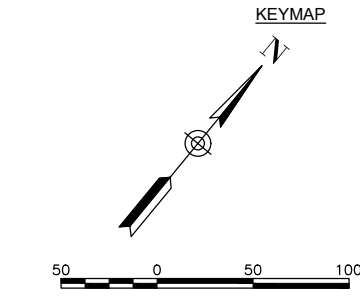
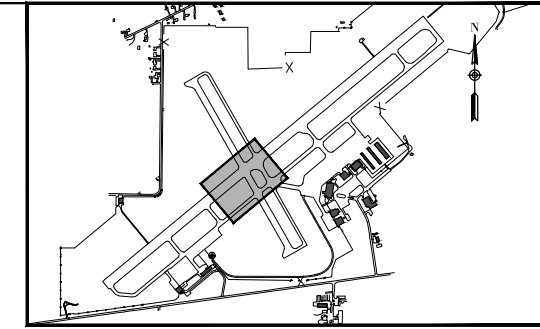
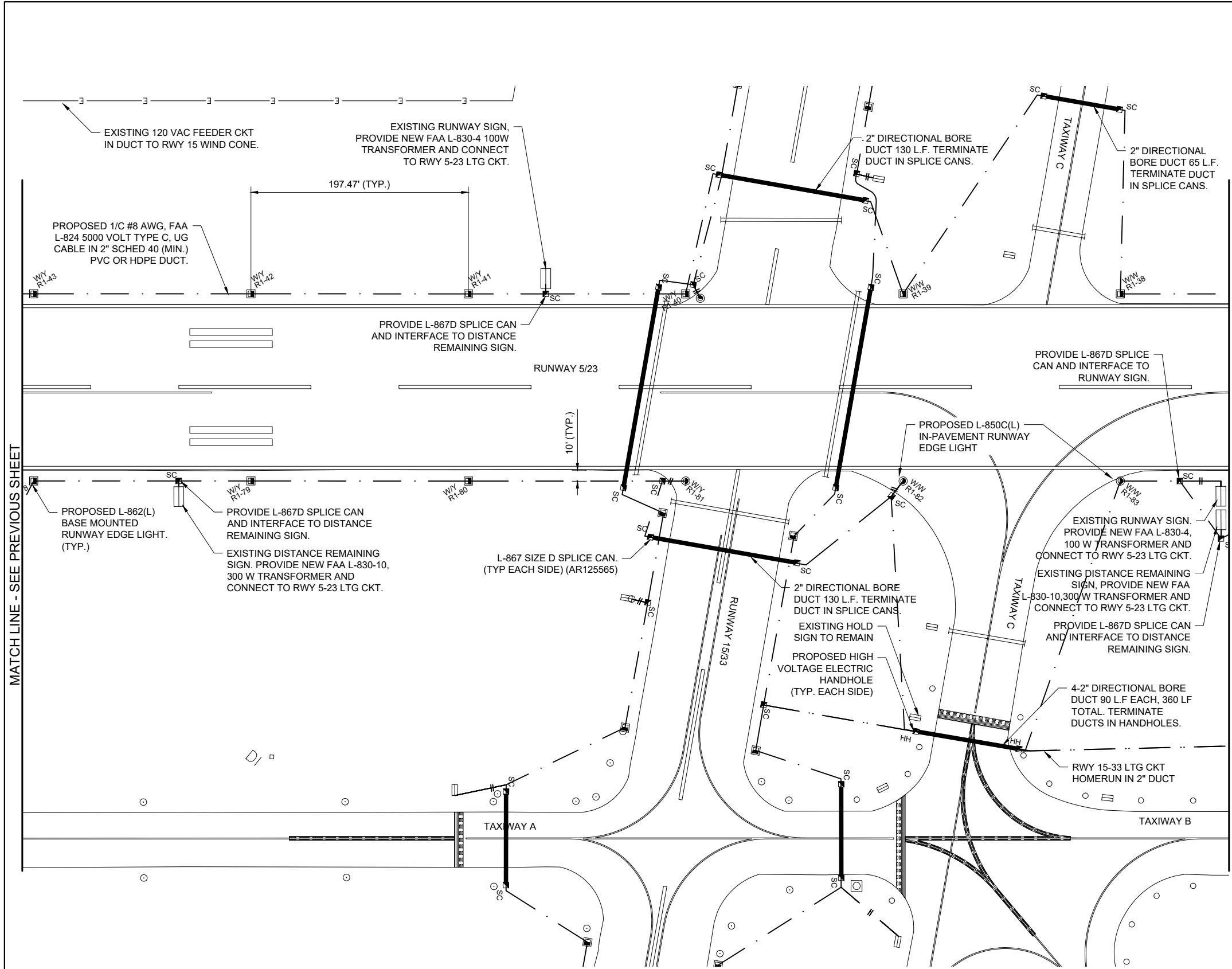
- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
 - EXISTING ELECTRICAL CABLES
 - EXISTING STORM SEWER/UNDERDRAIN
 - EXISTING ELECTRIC UTILITY UG PRIMARY
 - EXISTING TELEPHONE
 - EXISTING GAS
 - EXISTING FENCE
 - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED IN PAVEMENT RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
 - EXISTING RUNWAY/TAXI GUIDANCE SIGN
 - EXISTING ELECTRICAL HANDHOLE
 - EXISTING ELECTRICAL MANHOLE
 - EXISTING SPLICE CAN
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - EXISTING WIND CONE

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET

FOR BID

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- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
 - EXISTING ELECTRICAL CABLES
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 - PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
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 - EXISTING ELECTRICAL HANDHOLE
 - EXISTING ELECTRICAL MANHOLE
 - EXISTING SPLICE CAN
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - EXISTING WIND CONE

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



Offices Nationwide
 www.hanson-inc.com

Hanson Professional Services Inc.
 1525 S. 6th Street
 Springfield, IL 62703
 phone: 217-788-2450
 fax: 217-788-2503

Illinois Licensed
 Professional Service Corporation
 #184-001084



100 AVIATION DRIVE
 MT VERNON, IL 62864



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
 SBG No. 3-17-SBGP-TBD
 Contract No. MV068

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		DES	DWN	REV

ISSUE: MARCH 3, 2023
 PROJECT NO: 21A0096D
 CAD FILE: E-102-PLN.DWG
 DESIGN BY: KNL 3/12/2022
 DRAWN BY: CWS 3/15/2022
 REVIEWED BY: KNL 3/24/2022

SHEET TITLE

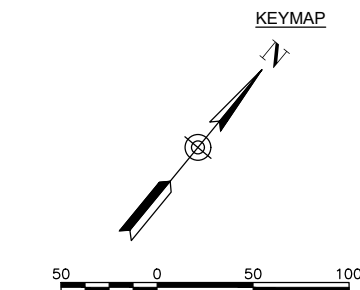
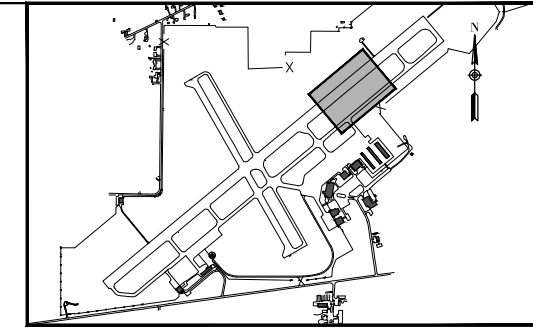
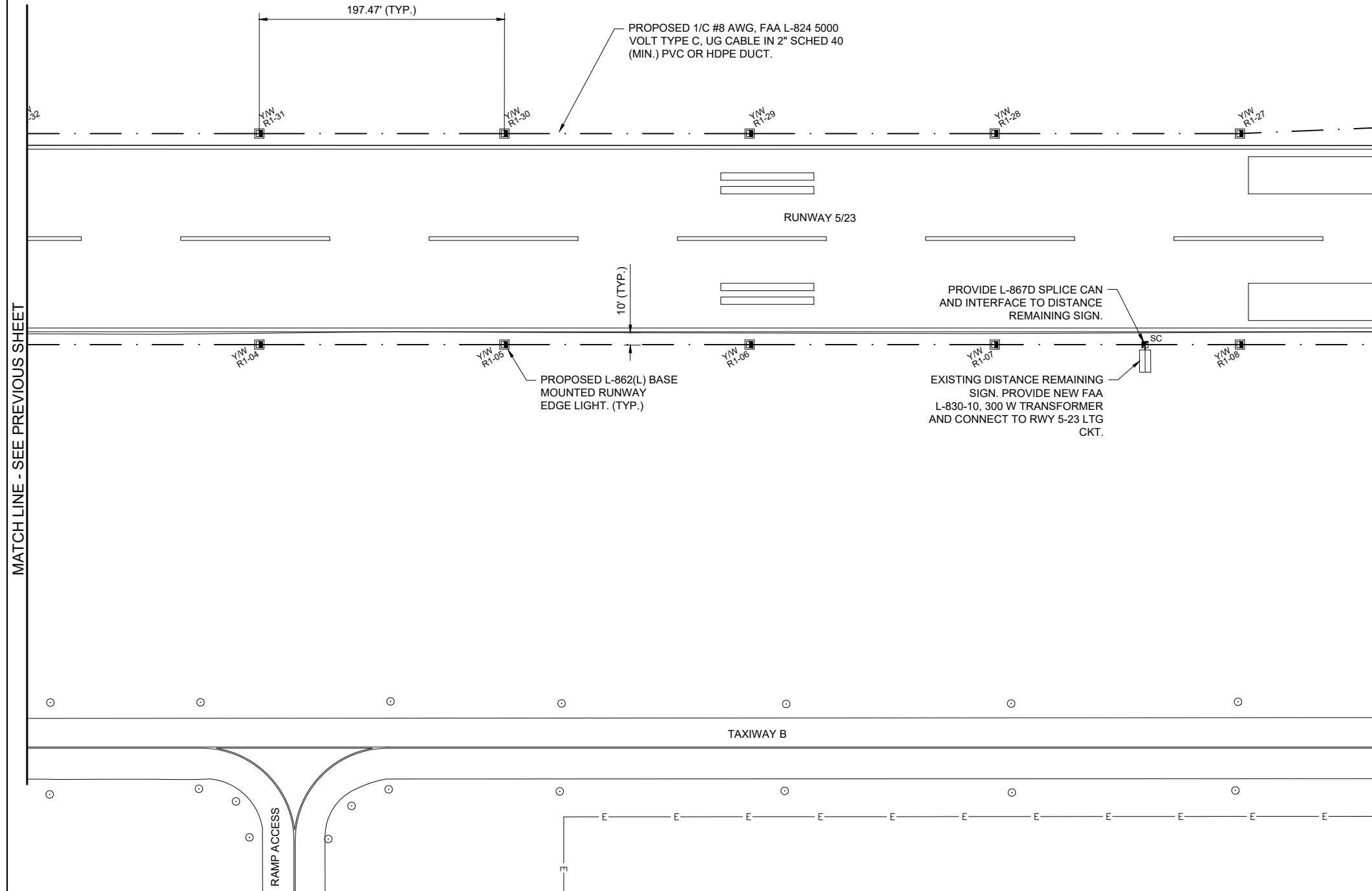
PROPOSED ELECTRICAL PLAN - RUNWAY 5-23 SHEET 3

FOR BID

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MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER/UNDERDRAIN
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- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED IN PAVEMENT RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED SPLICE CAN
- EXISTING WIND CONE

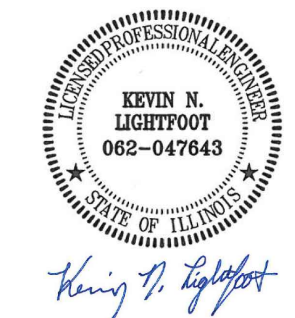


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IDA No: MVN-4951
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 DRAWN BY: CWS 3/15/2022

REVIEWED BY: KNL 3/24/2022

SHEET TITLE

PROPOSED ELECTRICAL PLAN - RUNWAY 5-23 SHEET 5

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

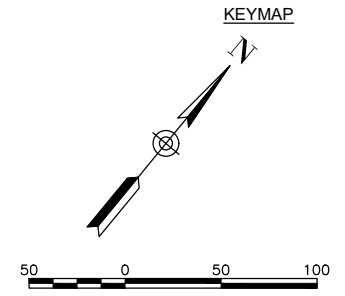
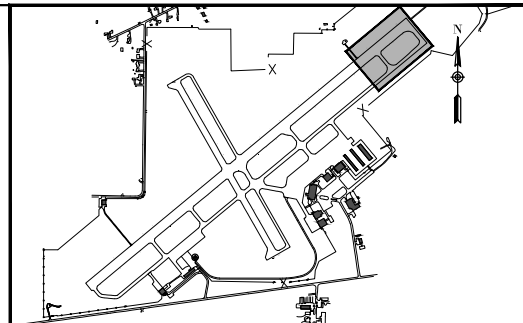
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REVIEWED BY: KNL 3/24/2022

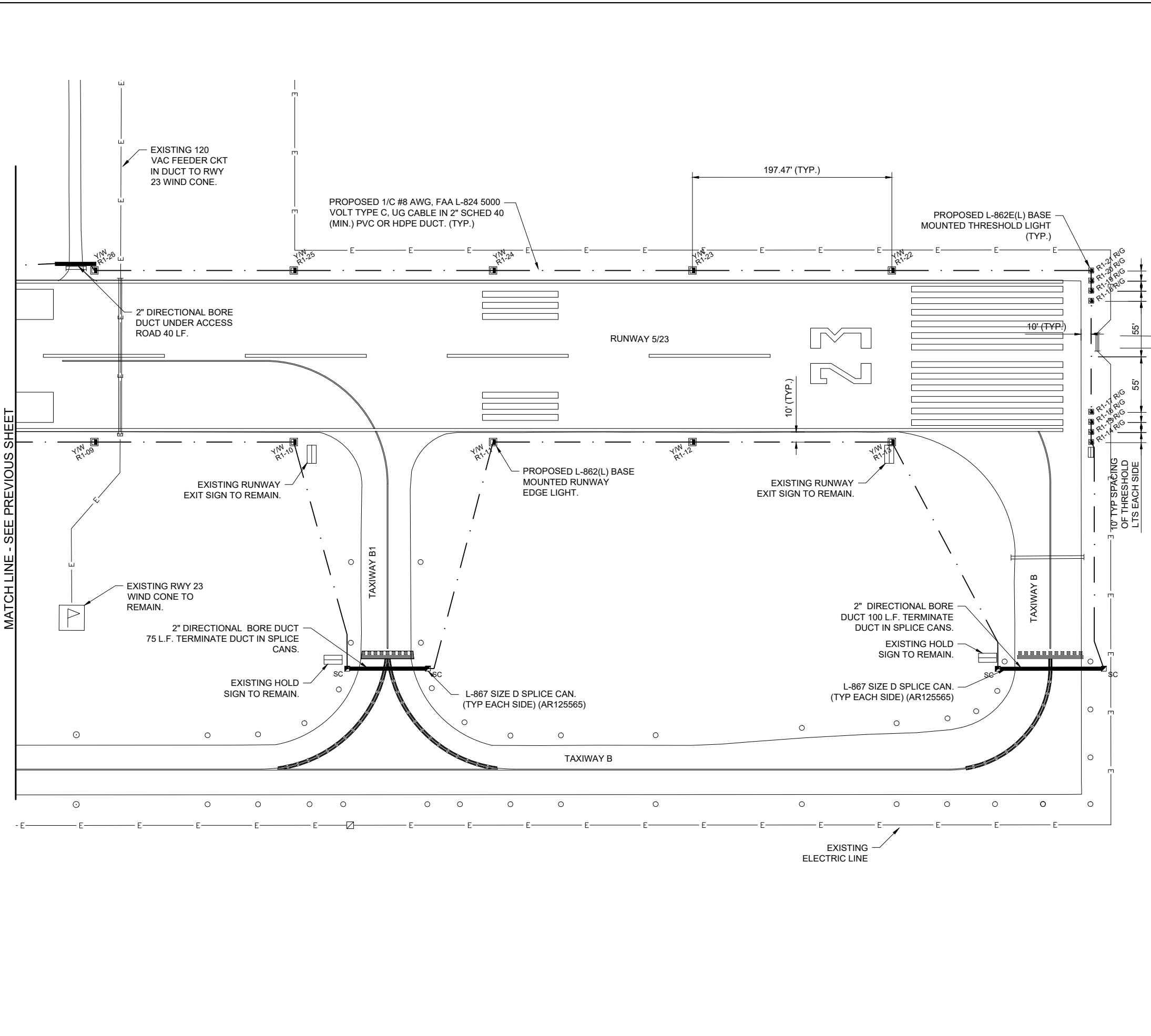
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PROPOSED ELECTRICAL PLAN - RUNWAY 5-23 SHEET 6



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- EXISTING ELECTRICAL CABLES
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- EXISTING ELECTRICAL MANHOLE
- EXISTING SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED SPLICE CAN
- EXISTING WIND CONE



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Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

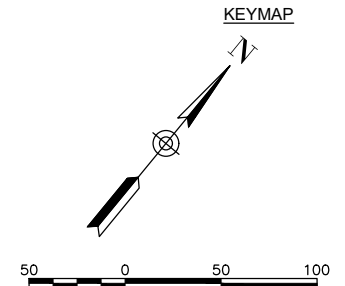
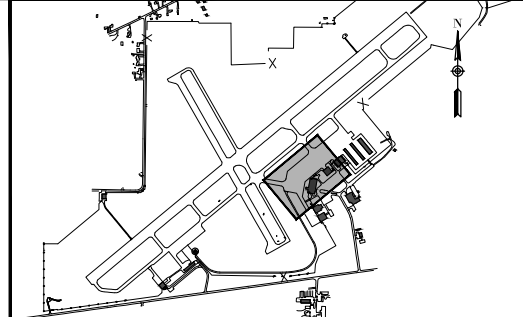
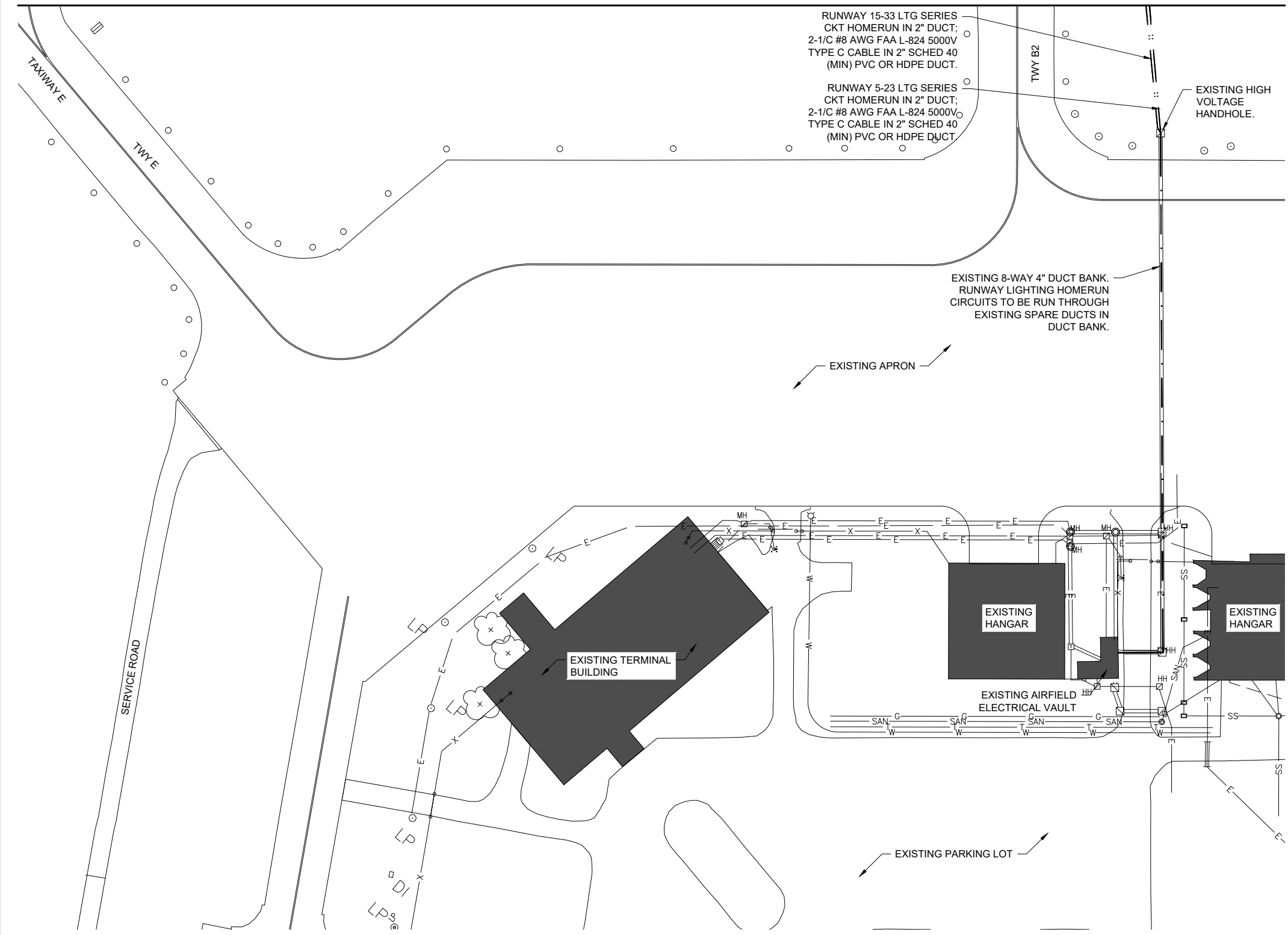
NO.	DATE	DESCRIPTION		
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PROJECT NO: 21A0096D
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SHEET TITLE

PROPOSED ELECTRICAL PLAN - HOMERUN PLAN

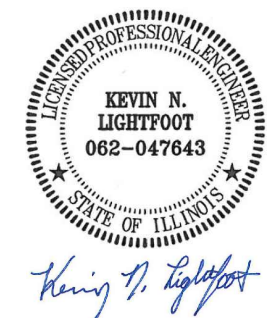
MATCH LINE - SEE SHEET 24



- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
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 - PROPOSED IN PAVEMENT RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
 - EXISTING RUNWAY/TAXI GUIDANCE SIGN
 - EXISTING ELECTRICAL HANDHOLE
 - EXISTING ELECTRICAL MANHOLE
 - EXISTING SPLICE CAN
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - EXISTING WIND CONE

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DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

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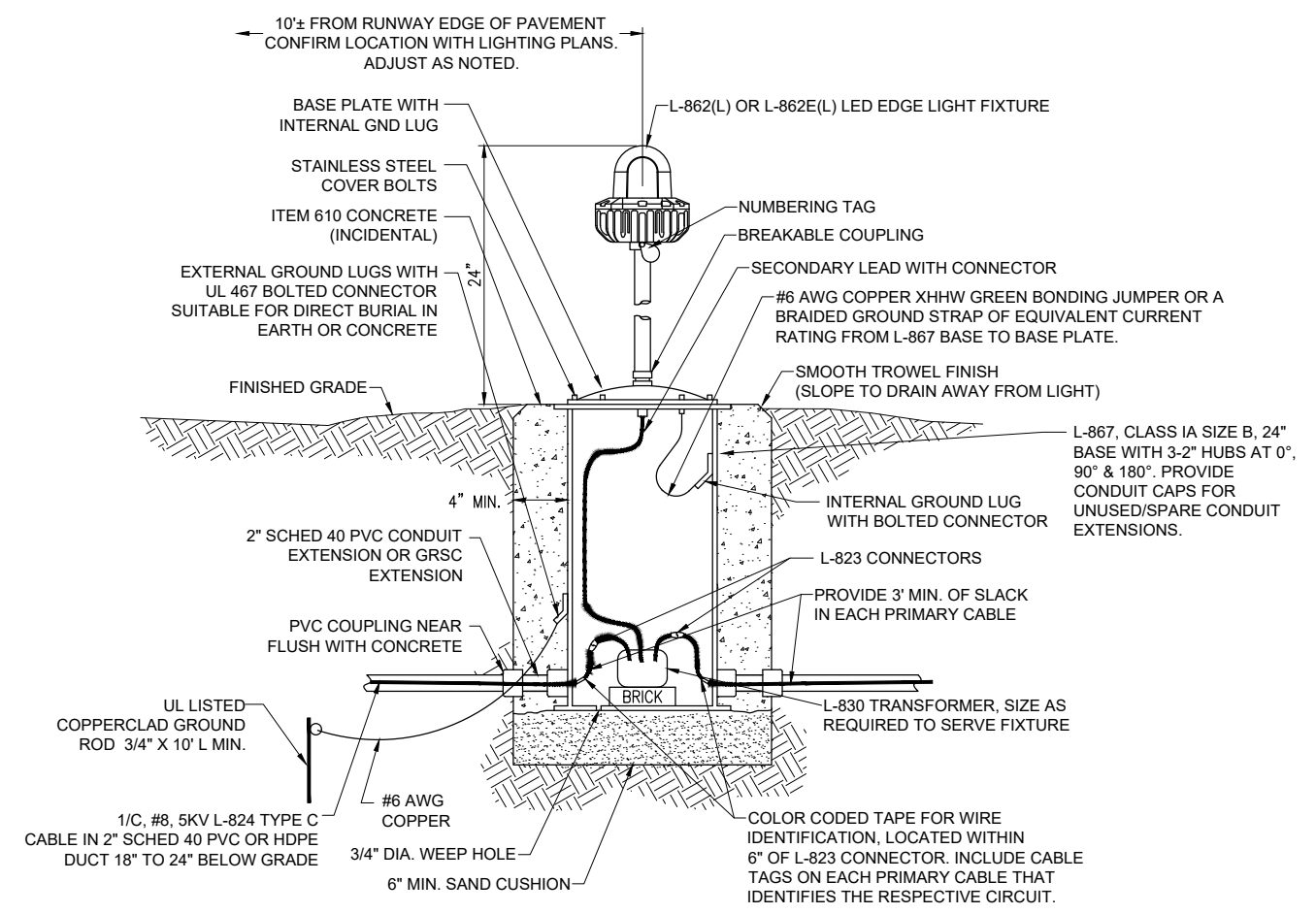
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PROJECT NO: 21A0096D
CAD FILE: E-501-DETL.DWG
DESIGN BY: KNL 3/12/2022
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REVIEWED BY: KNL 3/24/2022

SHEET TITLE

HIGH INTENSITY ELEVATED RUNWAY LIGHT DETAILS

NOTES FOR AIRFIELD LIGHT FIXTURE DETAILS

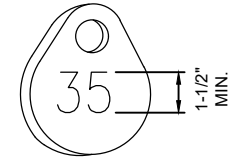
- SEE ELECTRICAL NOTES SHEETS.
- THE PROPOSED RUNWAY EDGE LIGHT FIXTURES AND THRESHOLD LIGHT FIXTURES SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-46 (CURRENT ISSUE IN EFFECT) AND BE FAA APPROVED, FOR TYPE L-862(L) AND TYPE L-862E(L) RESPECTIVELY. RUNWAY AND THRESHOLD LIGHT FIXTURES SHALL HAVE LED (LIGHT EMITTING DIODE) ILLUMINATION AND SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF FAA ENGINEERING BRIEF NO. 67D LIGHT SOURCES OTHER THAN INCANDESCENT AND XENON FOR AIRPORT AND OBSTRUCTION LIGHTING FIXTURES.
- LIGHT CANS FOR THE AIRFIELD LIGHT FIXTURES AND BASE CANS SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42 (CURRENT ISSUE IN EFFECT), FOR TYPE L-867, CLASS IA, SIZE B (12 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH LIGHT BASE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. LIGHT BASE PLATES SHALL BE SIZED AND COMPATIBLE WITH THE RESPECTIVE LIGHT BASES AND LIGHT FIXTURES WITH STAINLESS STEEL BOLTS.
- PRIOR TO INSTALLING THE AIRFIELD LIGHT FIXTURES, APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, BREAKABLE COUPLING, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- SERIES CIRCUIT ISOLATION TRANSFORMERS FOR THE AIRFIELD LIGHTING SHALL BE MANUFACTURED TO FAA SPECIFICATION AC 150/5345-47, (CURRENT EDITION IN EFFECT), AND SHALL BE FAA-APPROVED (ETL/INTERTEK TESTING SERVICES-CERTIFIED). SERIES CIRCUIT TRANSFORMER SHALL BE PROPERLY SIZED FOR THE RESPECTIVE AIRFIELD LIGHTING DEVICE, AND SHALL BE AS RECOMMENDED BY THE RESPECTIVE EQUIPMENT MANUFACTURER. CONFIRM PROPER TRANSFORMER SELECTION AND SIZING WITH THE RESPECTIVE EQUIPMENT MANUFACTURER.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING AND SPLICE CANS SHALL BE IN ACCORDANCE WITH ITEM 610.
- IDENTIFICATION TAGS SHALL BE ATTACHED TO EACH AIRFIELD LIGHT FIXTURE.
- PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, RUBBER AND PLASTIC ELECTRICAL TAPES SHALL BE SCOTCH ELECTRICAL TAPE NUMBERS 130C LINERLESS RUBBER SPLICING TAPE (2" WIDE) AND 88 (1.5" WIDE) RESPECTIVELY, AS MANUFACTURED THE MINNESOTA MINING AND MANUFACTURING COMPANY, OR EQUIVALENT.
- WHERE BED ROCK IS ENCOUNTERED GROUND RODS MAY BE DRIVEN AT A 45 DEGREE ANGLE TO HELP AVOID BED ROCK OR MAY BE INSTALLED HORIZONTAL IN A TRENCH 30 INCHES MINIMUM IN DEPTH.
- VERIFY TOE-IN INSTALLATION WITH LIGHT FIXTURE MANUFACTURER INSTRUCTIONS, FOR COMPLIANCE WITH FAA REQUIREMENTS.



HIGH INTENSITY ELEVATED RUNWAY LIGHT - BASE MOUNTED

"NOT TO SCALE"

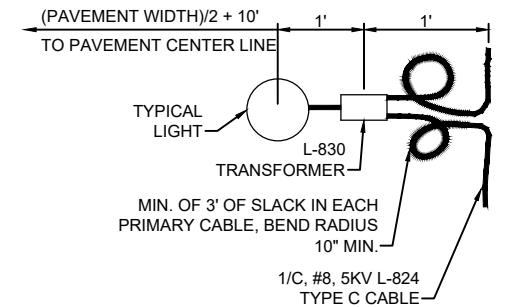
A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, RUNWAY DISTANCE REMAINING SIGNS, AND LIGHTED RUNWAY/TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FEET LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.



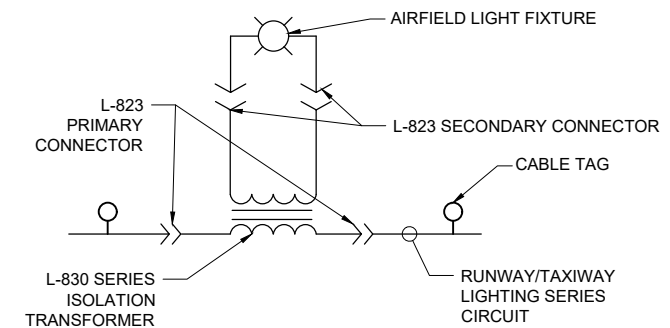
NOTE:
AFFIX NON-CORROSIVE, NON-BREAKABLE, TAG TO FIXTURE FACING RUNWAY/TAXIWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY. STAINLESS STEEL OR BRASS TAGS WITH 1/2" HIGH STAMPED LETTERING WILL ALSO BE ACCEPTABLE.

NUMBERING TAG DETAIL

"NOT TO SCALE"



PLAN VIEW



LIGHTING CONNECTION SCHEMATIC

NOT TO SCALE

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
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NO.	DATE	DESCRIPTION		
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REVIEWED BY: KNL 3/24/2022

SHEET TITLE

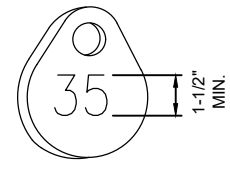
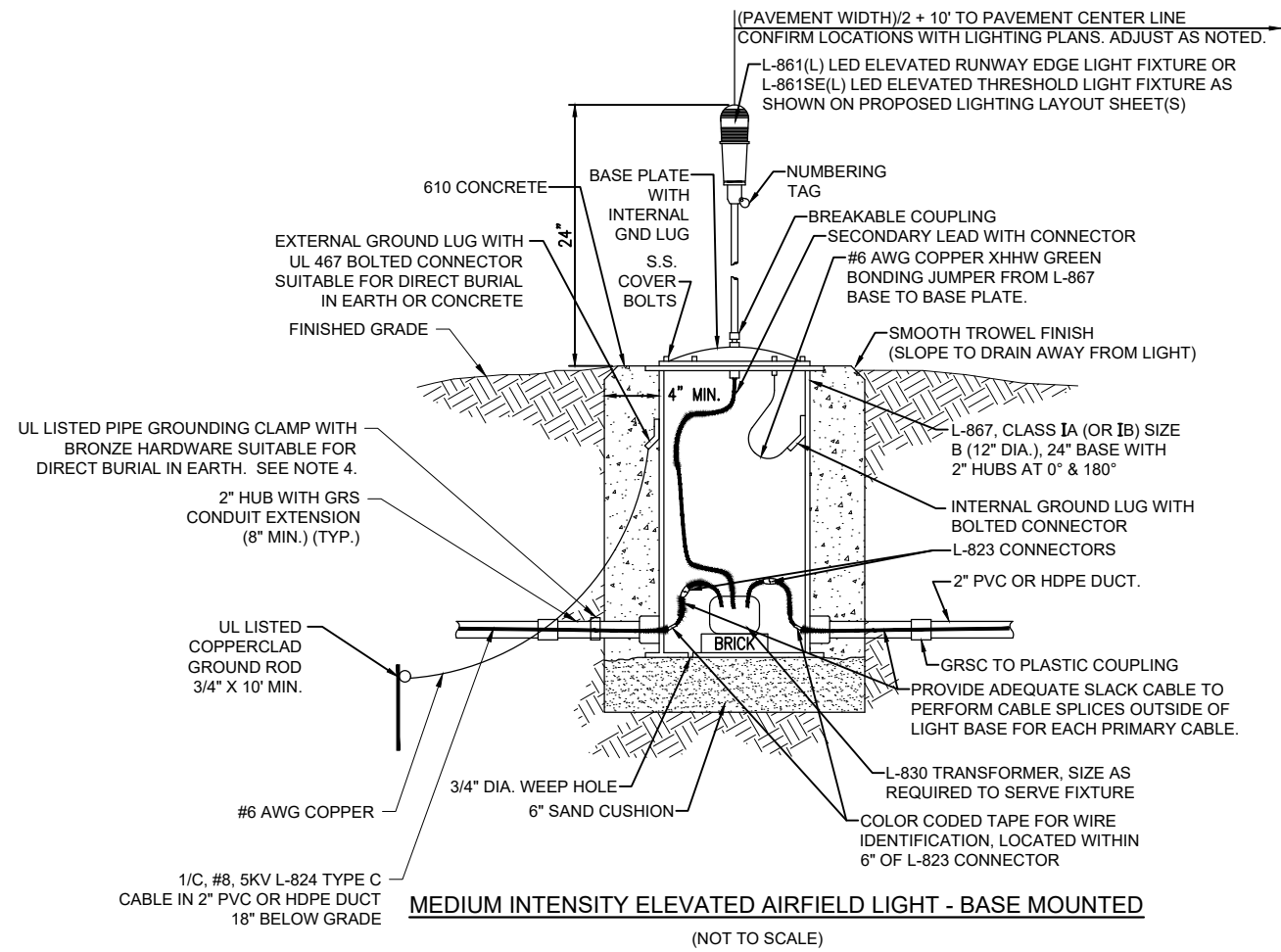
MEDIUM INTENSITY ELEVATED RUNWAY LIGHT DETAILS

FOR BID

NOTES:

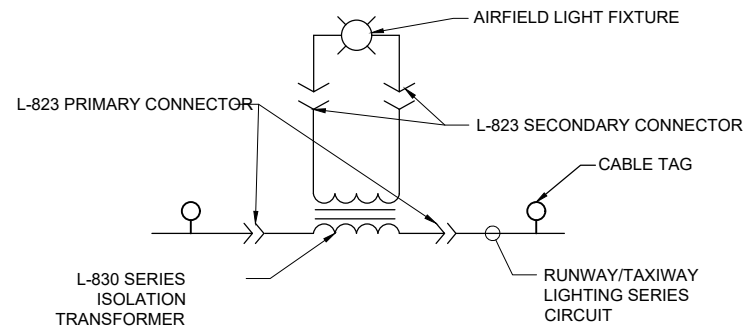
- SEE ELECTRICAL NOTES SHEETS.
- SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING.
- SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
- WHERE GROUND LUGS ARE NOT ACCESSIBLE ON BASE CANS, PROVIDE A UL LISTED PIPE GROUND CLAMP RATED FOR DIRECT BURIAL IN EARTH AND BOND TO THE METAL CONDUIT EXTENSION TO PROVIDE GROUND PATH TO LIGHT BASE.
- THE PROPOSED AIRFIELD LIGHT FIXTURES SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-46 (CURRENT ISSUE(S) IN EFFECT) AND BE FAA APPROVED FOR TYPE L-861(L) FOR RUNWAY EDGE LIGHTS AND L-861SE(L) FOR THRESHOLD LIGHTS. AIRFIELD LIGHT FIXTURES SHALL HAVE LED (LIGHT EMITTING DIODE) ILLUMINATION AND SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF FAA ENGINEERING BRIEF NO. 67D LIGHT SOURCES OTHER THAN INCANDESCENT AND XENON FOR AIRPORT AND OBSTRUCTION LIGHTING FIXTURES.
- LIGHT BASE CANS FOR THE AIRFIELD LIGHT FIXTURES SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42 (CURRENT ISSUE IN EFFECT), FOR TYPE L-867, CLASS IA, SIZE B (12 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH LIGHT BASE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. LIGHT BASE PLATES SHALL BE SIZED AND COMPATIBLE WITH THE RESPECTIVE LIGHT BASES AND LIGHT FIXTURES WITH STAINLESS STEEL BOLTS.
- PRIOR TO INSTALLING THE AIRFIELD LIGHT FIXTURES, APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, BREAKABLE COUPLING, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- SERIES CIRCUIT ISOLATION TRANSFORMERS FOR THE AIRFIELD LIGHTING SHALL BE MANUFACTURED TO FAA SPECIFICATION AC 150/5345-47, (CURRENT EDITION IN EFFECT), AND SHALL BE FAA-APPROVED (ETL/INTERTEK TESTING SERVICES-CERTIFIED). SERIES CIRCUIT TRANSFORMER SHALL BE PROPERLY SIZED FOR THE RESPECTIVE AIRFIELD LIGHTING DEVICE, AND SHALL BE AS RECOMMENDED BY THE RESPECTIVE EQUIPMENT MANUFACTURER. CONFIRM PROPER TRANSFORMER SELECTION AND SIZING WITH THE RESPECTIVE EQUIPMENT MANUFACTURER.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING AND SPlice CANS SHALL BE IN ACCORDANCE WITH ITEM 610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
- IDENTIFICATION TAGS SHALL BE ATTACHED TO EACH AIRFIELD LIGHT FIXTURE.
- PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, RUBBER AND PLASTIC ELECTRICAL TAPES SHALL BE SCOTCH ELECTRICAL TAPE NUMBERS 130C LINERLESS RUBBER SPLICING TAPE (2" WIDE) AND 88 (1.5" WIDE) RESPECTIVELY, AS MANUFACTURED THE MINNESOTA MINING AND MANUFACTURING COMPANY, OR EQUIVALENT.

A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, RUNWAY DISTANCE REMAINING SIGNS, AND LIGHTED RUNWAY/TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FEET LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.



NOTE:
AFFIX NON-CORROSIVE, NON-BREAKABLE, TAG TO FIXTURE FACING RUNWAY/TAXIWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY. STAINLESS STEEL OR BRASS TAGS WITH 1/2" HIGH STAMPED LETTERING WILL ALSO BE ACCEPTABLE.

NUMBERING TAG DETAIL
(NOT TO SCALE)



LIGHTING CONNECTION SCHEMATIC
NOT TO SCALE



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBG-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023

PROJECT NO: 21A0096D

CAD FILE: E-505-DETL.DWG

DESIGN BY: KNL 3/12/2022

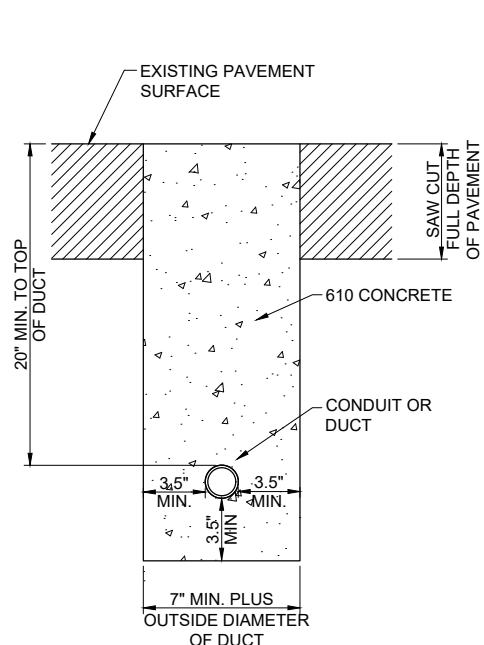
DRAWN BY: CWS 3/15/2022

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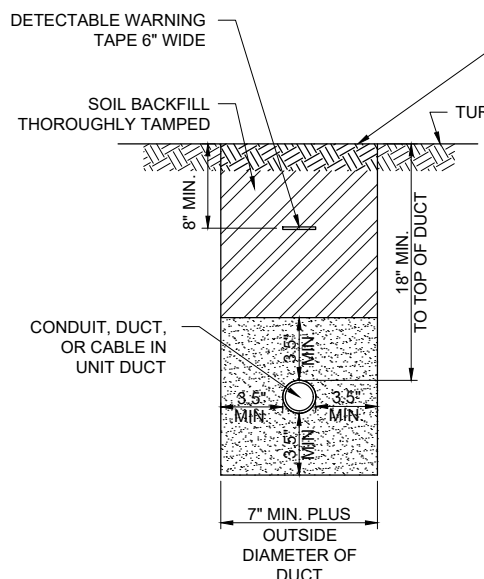
SHEET TITLE

CONDUIT TRENCH
DETAILS

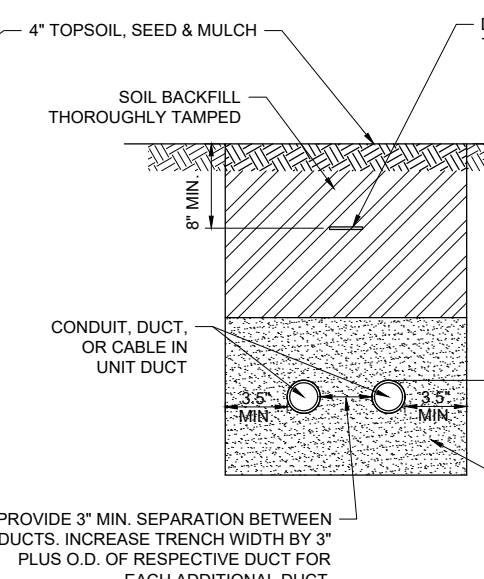
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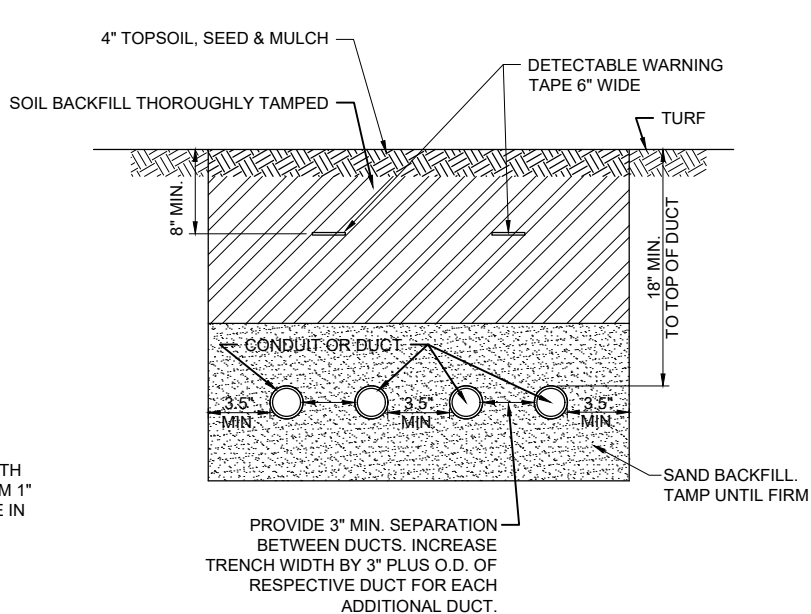
CONDUIT IN TRENCH - PAVED AREAS
"NOT TO SCALE"



CONDUIT IN TRENCH - NON-PAVEMENT AREAS
"NOT TO SCALE"



CONDUIT IN TRENCH - NON-PAVEMENT AREAS
"NOT TO SCALE"



NOTES:

- DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- 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.
- 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.
- 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.
- SERVICE CONDUCTORS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH FEEDER CIRCUITS, BRANCH CIRCUITS OR CONTROL CIRCUITS.
- COMMUNICATION CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH POWER CIRCUITS.
- HOME RUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- 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.
- ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.
- 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.

- 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).
- 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 UTILITIES, 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.
- 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.
- 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.

- 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.
- 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
- 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.
- 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.
- 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.
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- 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.



Kevin N. Lightfoot

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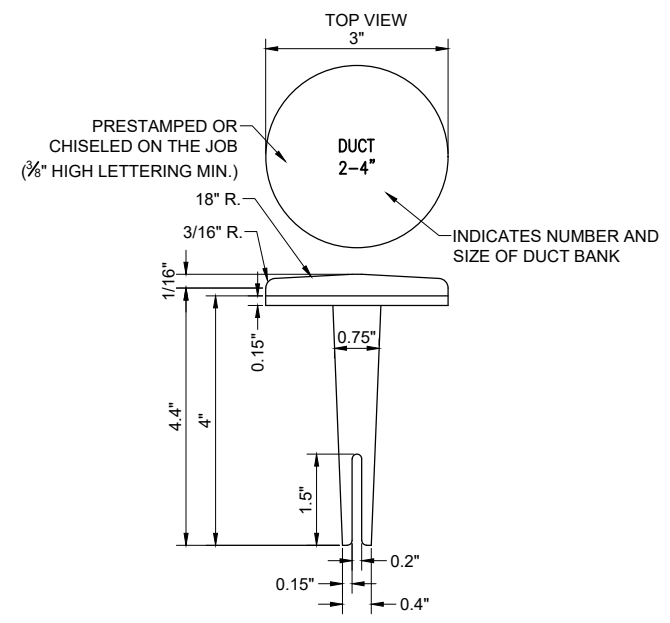
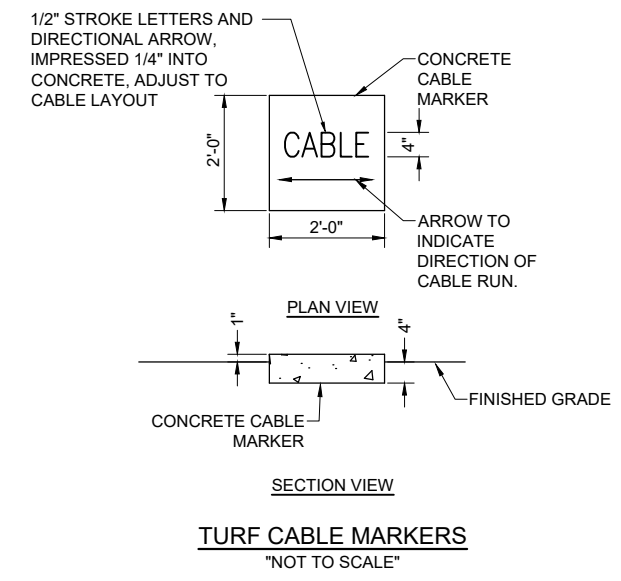
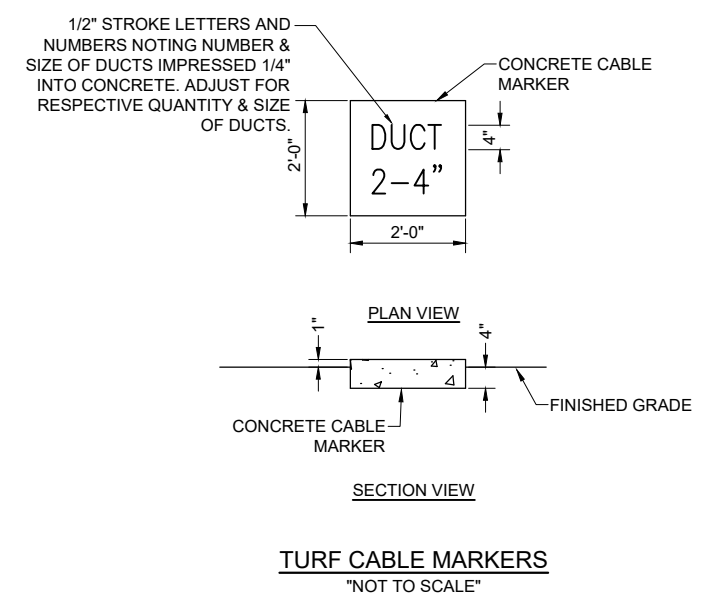
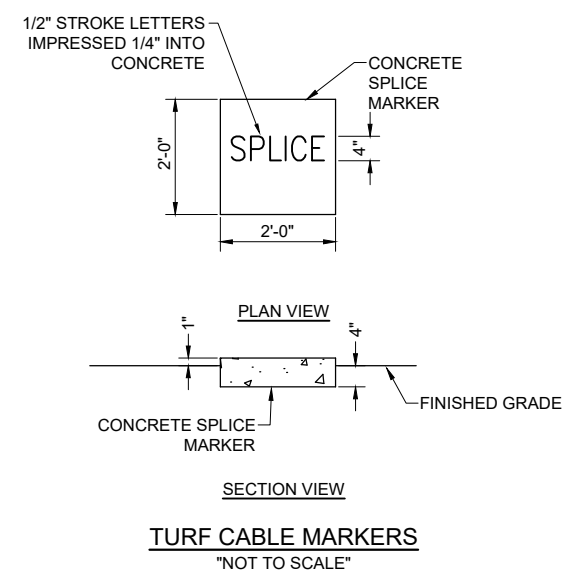
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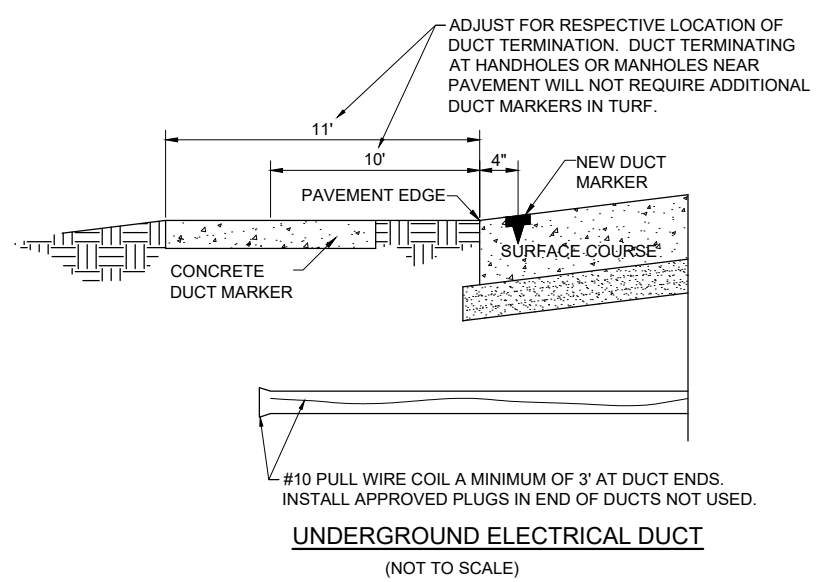
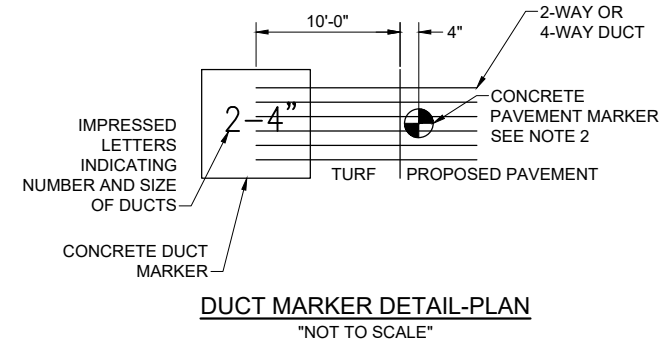
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DESIGN BY: KNL 3/12/2022
DRAWN BY: CWS 3/15/2022
REVIEWED BY: KNL 3/24/2022

SHEET TITLE

CABLE AND DUCT MARKER DETAILS



- NOTE:**
- TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE
 - BRASS DUCT MARKERS ARE AVAILABLE FROM BERNTSEN INTERNATIONAL INC., P.O. BOX 8670, MADISON, WI. 53708-8670, PHONE: 1-877-959-8556, SURV-KAP, 3225 E. 47TH ST., TUCSON, AZ 85713, PHONE: (502)-622-6011, OR OTHER EQUIVALENT MANUFACTURERS.



- CABLE & DUCT MARKER NOTES:**
- 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.
 - 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.
 - 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.
 - 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.
 - EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED:
 - REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - INCREASE THE MARKER SIZE TO 30" X 30".
 - PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE
 - TURF DUCT MARKERS ARE NOT REQUIRED AT PAVEMENT CROSSINGS WHERE DUCTS TERMINATE IN HANDHOLES, OR JUNCTION STRUCTURES.
 - 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.
 - THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: RWY 4-22, PAPI-4, PAPI-22.
 - LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.



Kevin N. Lightfoot

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REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

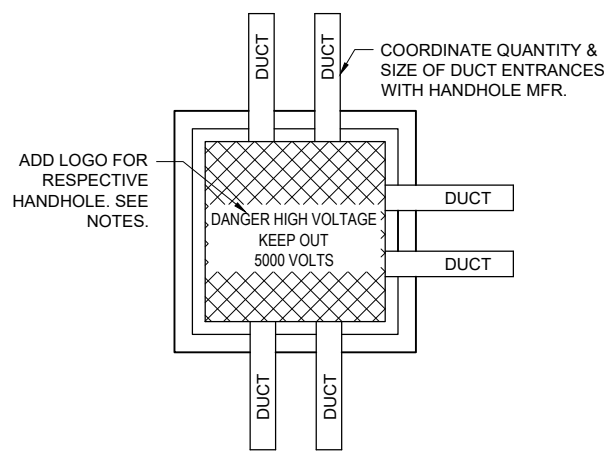
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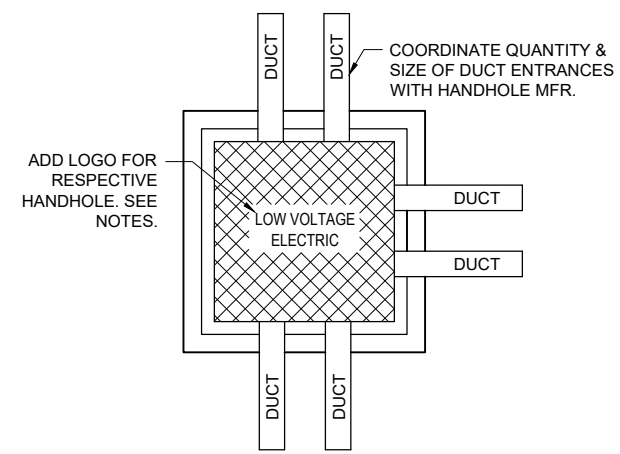
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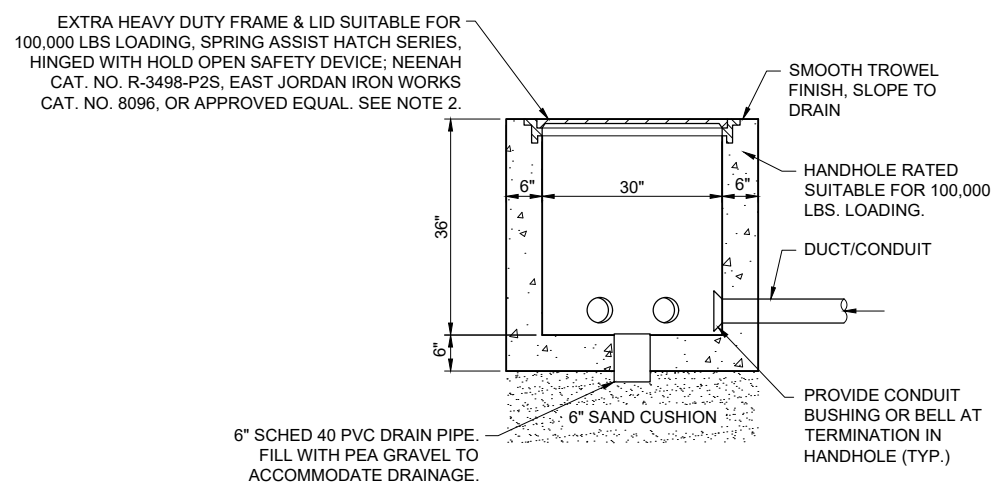
HANDHOLE AND SPLICE CAN DETAILS



HIGH VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"



LOW VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"

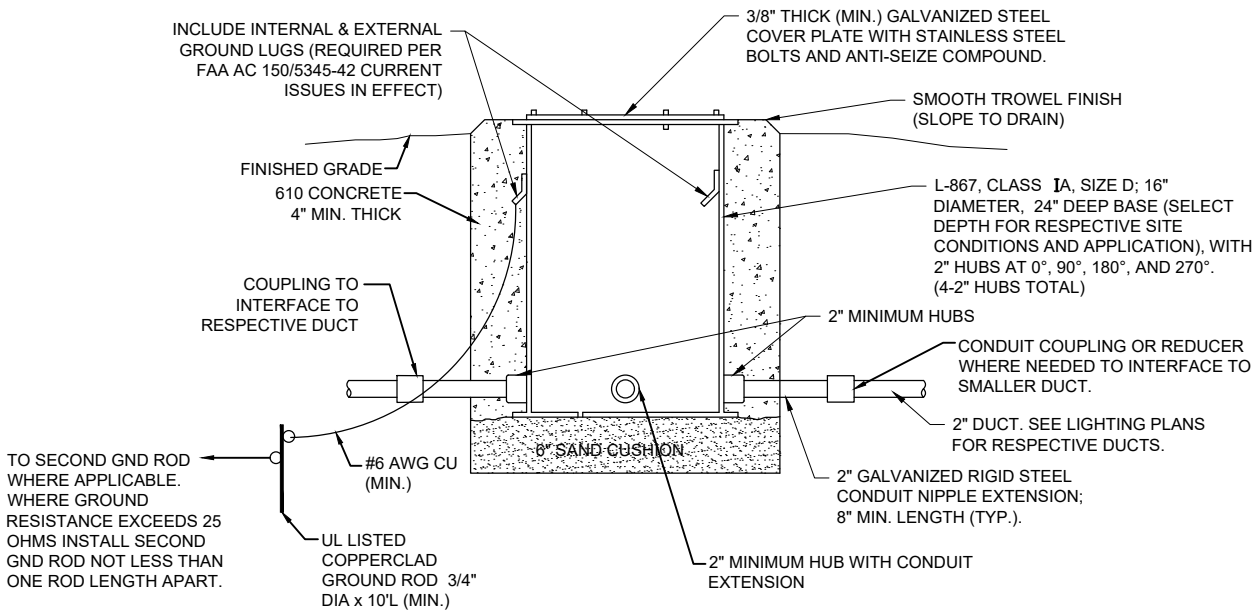


ELEVATION
"NOT TO SCALE"

HANDHOLE NOTES:

- LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V - 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.
- ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY CIRCULAR AC 150/5320-6G. AIRPORT HANDHOLE HOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-3498-P2S, EAST JORDAN IRON WORKS CAT. NO. 8096, OR APPROVED EQUAL.
- REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
- CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
- HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURER MUST BE ON THE IDOT (ILLINOIS DEPARTMENT OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
- FRAMES AND LIDS (CASTINGS) SHALL BE MADE IN THE USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENTS.
- COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
- ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HANDHOLES WITH SIMILAR DIMENSIONS MEETING STRENGTH AND LOADING REQUIREMENTS WILL BE CONSIDERED.

ELECTRICAL HANDHOLE
"NOT TO SCALE"



SPLICE CAN/JUNCTION CAN DETAIL
"NOT TO SCALE"

NOTES FOR SPLICE CAN/JUNCTION CAN DETAIL:

- 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.
- 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).
- APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- 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.
- 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.
- LIDS FOR THE SPLICE CANS CONTAINING LOW VOLTAGE CABLES (RATED 600 VOLTS AND BELOW) WILL BE ACCEPTABLE TO USE BLANK COVERS.

FOR BID



Kevin N. Lightfoot

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REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

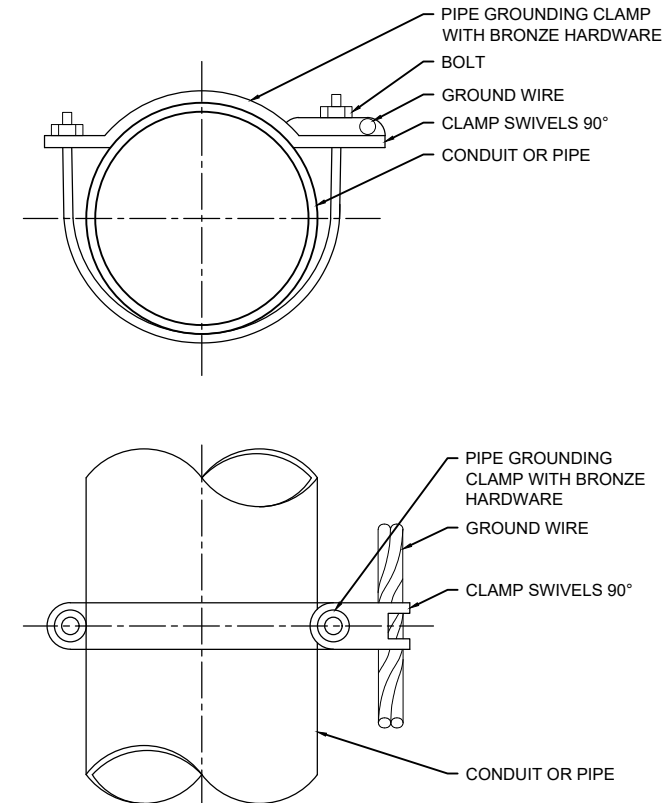
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SHEET TITLE

GROUNDING DETAILS

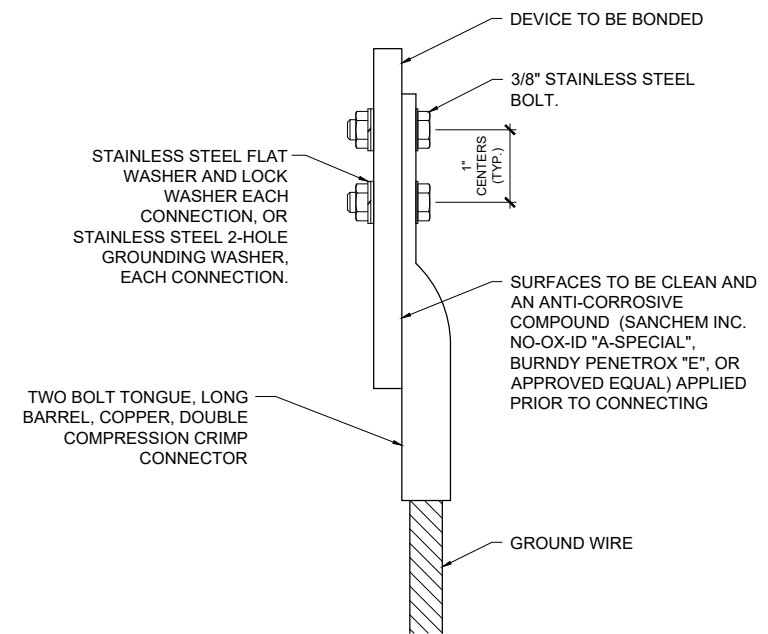


PIPE GROUNDING CLAMP TABLE (OR APPROVED EQUAL)

BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PIPE SIZE
GAR3902-BU	3902BU	1/2" - 1"
GAR3903-BU	3903BU	1 1/4" - 2"
GAR3904-BU	3904BU	2 1/2" - 3 1/2"
GAR3905-BU	3905BU	4" - 5"
GAR3906-BU	3906BU	6"

- NOTES**
- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL 467 LISTED.

PIPE/CONDUIT GROUNDING CLAMP DETAIL



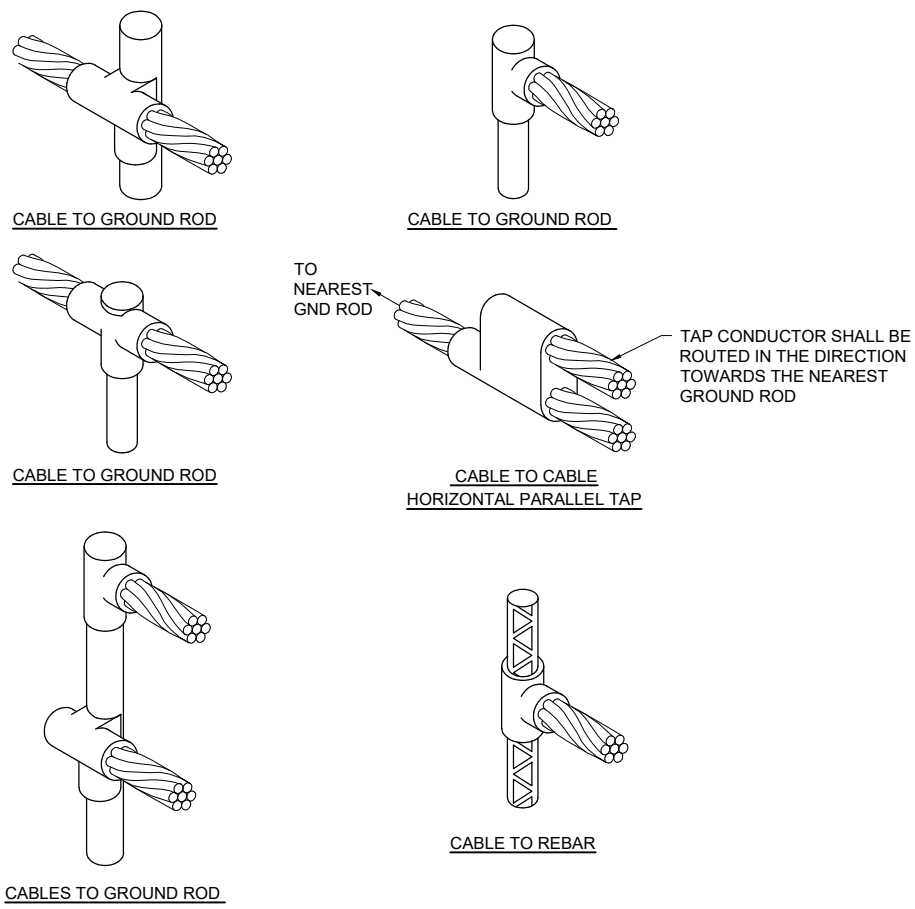
2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)

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

NOTES

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

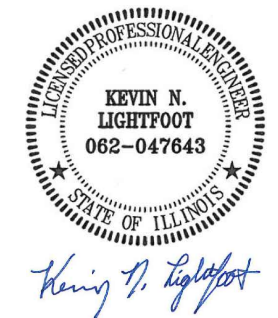
GROUNDING LUG CONNECTION DETAIL



DETAIL NOTES

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY PENTAIR ERICO PRODUCTS, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 80 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

EXOTHERMIC WELD DETAILS



DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY
RUNWAY LIGHTS (HIRL)
ON PRIMARY RUNWAY
AND REPLACE MEDIUM
INTENSITY RUNWAY
LIGHTS (MIRL) ON
CROSSWIND RUNWAY

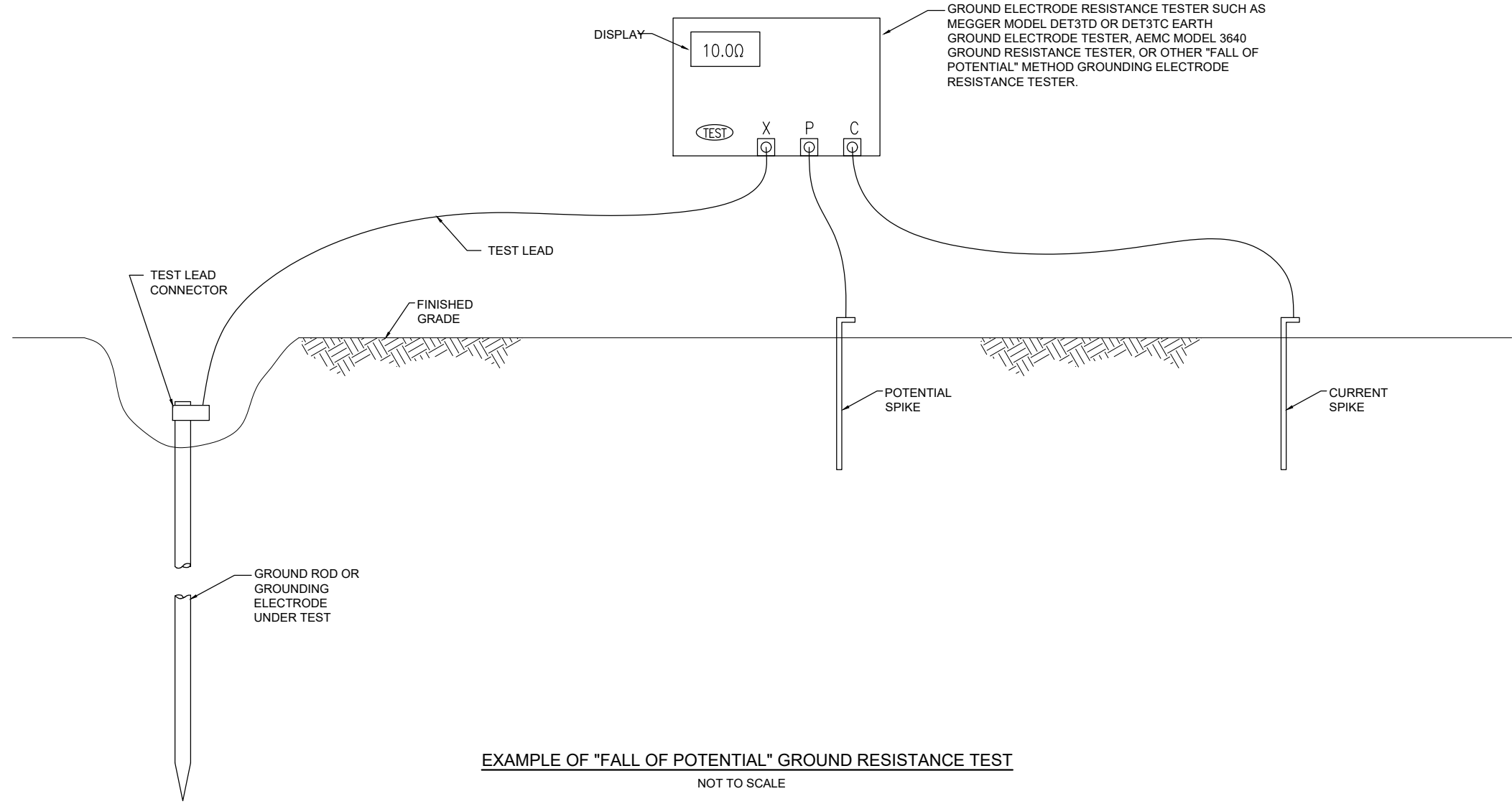
IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023
PROJECT NO: 21A0096D
CAD FILE: E-508-DETL.DWG
DESIGN BY: KNL 3/12/2022
DRAWN BY: CWS 3/15/2022
REVIEWED BY: KNL 3/24/2022

SHEET TITLE

GROUND
RESISTANCE
TESTING DETAILS



EXAMPLE OF "FALL OF POTENTIAL" GROUND RESISTANCE TEST
NOT TO SCALE

NOTES

- 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 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER.
- 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, AND NAVAIDS INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. ALSO REFER TO EOR-47643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS WHERE APPLICABLE. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER / RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER.
- GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
- RECORD SITE CONDITIONS DURING TESTS.
- "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

MAR 08, 2023 10:06 AM SCHUB01446
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FOR BID



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBG-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 21A0096D
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SHEET TITLE

ELECTRICAL LEGEND AND ABBREVIATIONS

NOTES:

- 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.
- KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING/CONSTRUCTION FOR USE AS A REFERENCE.
- VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER AND MAINTENANCE SUPERVISOR. 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).
- IN THE EVENT A CONFLICT IS DETERMINED WITH RESPECT TO MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- 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:

208/120 VAC, 3 PHASE, 4 WIRE
PHASE A BLACK
PHASE B RED
PHASE C BLUE
NEUTRAL WHITE
GROUND GREEN
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, ADJUSTING, CONNECTING, OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICE.
- 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.

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

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

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
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KNL	KEVIN NEIL LIGHTFOOT
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND 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 LEGEND - SCHEMATIC	
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

ELECTRICAL 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



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023

PROJECT NO: 21A0096D

CAD FILE: E-104-VLT.DWG

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DRAWN BY: CWS 3/15/2022

REVIEWED BY: KNL 3/24/2022

SHEET TITLE

PROPOSED FLOOR PLAN FOR ELECTRICAL VAULT

GENERAL NOTES:

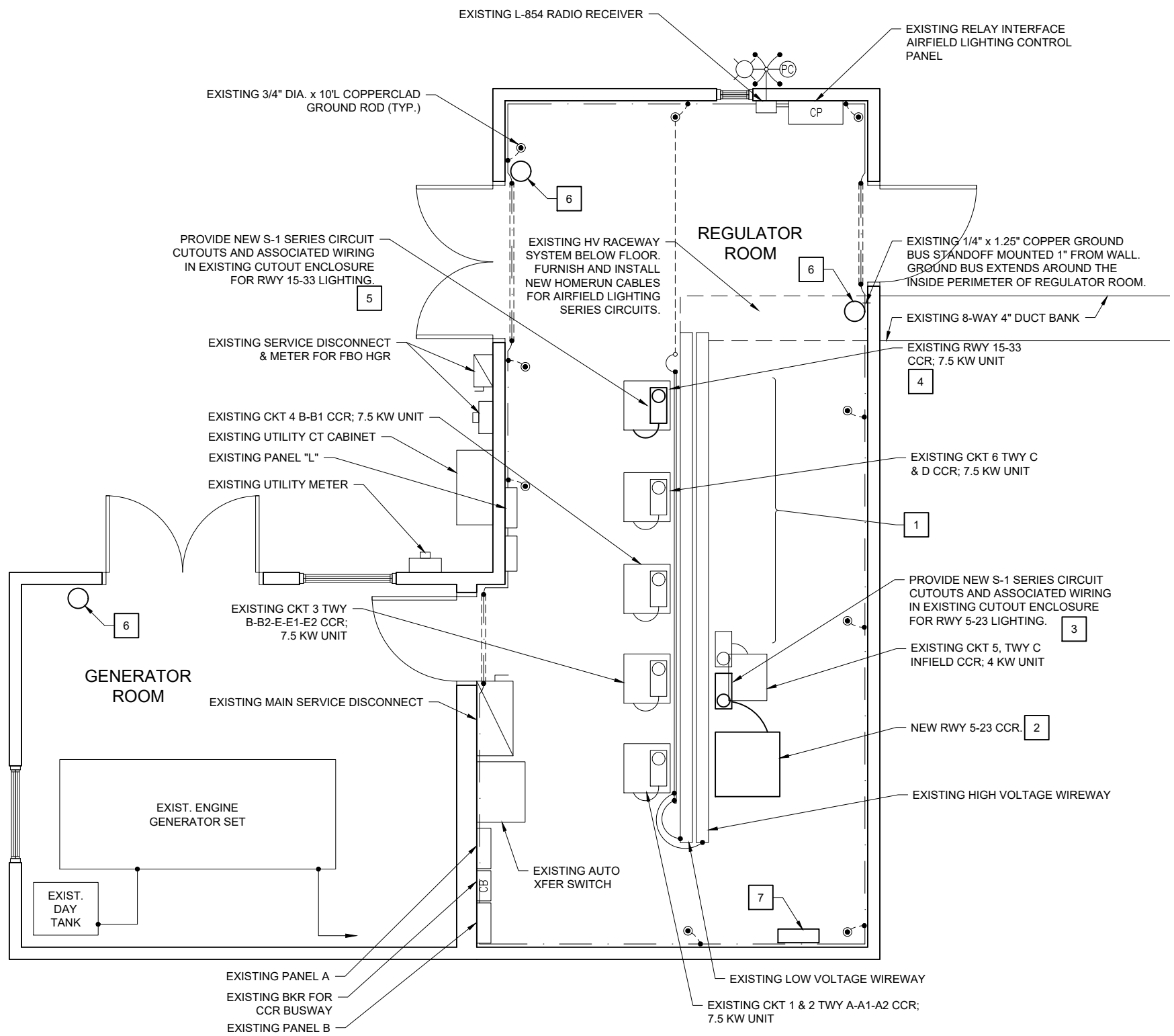
1. CONTRACTOR SHALL COORDINATE WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS WITH THE AIRPORT MANAGER AND THE RESIDENT PROJECT REPRESENTATIVE. ANY SHUTDOWN OF EXISTING SYSTEMS SHALL BE SCHEDULED WITH AND APPROVED BY THE AIRPORT MANAGER PRIOR TO SHUTDOWN. ONCE SHUT DOWN, THE CIRCUITS SHALL 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).
2. SEE PROPOSED ELECTRICAL ONE-LINE DIAGRAMS FOR INPUT POWER WIRING REQUIREMENTS, TO EACH CCR. SEE PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR CCR AND CUTOUT OUTPUT WIRING REQUIREMENTS. RECORD AND DOCUMENT EXISTING CONTROL WIRING TO EACH REPLACEMENT CCR AND RECONNECT AND/OR REPLACE TO EACH NEW CCR.
3. CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION AND AIRFIELD LIGHTING CIRCUIT.
4. FURNISH AND INSTALL CIRCUIT BREAKERS, CONDUIT, FITTINGS, RACEWAYS, WIRING, ADJUSTMENTS, RELOCATIONS, SUPPORT HARDWARE, AND ACCESSORIES TO ACCOMMODATE THE RESPECTIVE WORK.
5. FINAL CONNECTIONS OF 208V INPUT POWER WIRING, CONTROL WIRING, AND OUTPUT SERIES CIRCUIT WIRING TO EACH NEW/REPLACEMENT CCR SHALL HAVE UL LISTED LIQUID-TIGHT FLEXIBLE METAL CONDUIT AT THE CCR. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION. UL LISTED LTFMC IS REQUIRED BY NATIONAL ELECTRIC CODE.

KEYED NOTES:

1. EXISTING OLD SPARE CCR'S SHALL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE. CONFIRM DESIGNATED CCR'S FOR REMOVAL WITH THE AIRPORT MANAGER. REMOVAL OF EXISTING CCR'S WILL BE CONSIDERED INCIDENTAL TO THE "REMOVE AIRFIELD LIGHTING" PAY ITEM PER LUMP SUM.
2. EXISTING RUNWAY 5-23 CCR SHALL BE REMOVED AND REPLACED WITH A NEW FERRORESONANT FAA L-828, CLASS 1; 6.6 AMP OUTPUT CURRENT, STYLE 2; FIVE BRIGHTNESS STEPS, 15 KW, 208 VAC INPUT VOLTAGE CONSTANT CURRENT REGULATOR. EXISTING CCR SHALL BE RELOCATED IN THE VAULT FOR STORAGE.
3. EXISTING S-1 CUTOUTS FOR RWY 5-23 LIGHTING CIRCUIT SHALL BE REMOVED AND REPLACED WITH NEW TYPE S-1 CUTOUTS WITH ASSOCIATED FAA L-824, NO. 8 AWG, 5000 V WIRING. PROVIDE FIRE STOP MATERIAL AT EACH CONDUIT ENTRY/EXIT TO/FROM CUTOUT ENCLOSURE.
4. EXISTING RUNWAY 15-33 CCR TO REMAIN.
5. EXISTING S-1 CUTOUTS FOR RWY 15-33 LIGHTING CIRCUIT SHALL BE REMOVED AND REPLACED WITH NEW TYPE S-1 CUTOUTS WITH ASSOCIATED FAA L-824, NO. 8 AWG, 5000 V WIRING. PROVIDE FIRE STOP MATERIAL AT EACH CONDUIT ENTRY/EXIT TO/FROM CUTOUT ENCLOSURE.
6. NEW UL RATED 10LB CARBON DIOXIDE FIRE EXTINGUISHER WITH MOUNTING BRACKET. PROVIDE 3 NEW FIRE EXTINGUISHERS; AMEREX MODEL 330, BUCKEYE MODEL 10CD, OR APPROVED EQUAL.
7. NEW LOCKOUT/TAGOUT KIT CONFORMING TO OSHA STANDARD 1920.147, SUITABLE FOR WALL MOUNTING WITH 10 LOCKOUT PAD LOCKS EACH WITH A DIFFERENT KEY, 5 LOCKOUT HASPS TO ACCOMMODATE MULTIPLE PAD LOCKS, AND 100 LOCKOUT TAGS.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. 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 ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

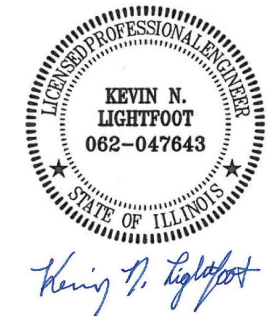
CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.



PROPOSED FLOOR PLAN FOR ELECTRICAL VAULT
SCALE: 3/8" = 1'-0"

MAR 08, 2023 10:07 AM SCHUB01446
1:21:00S121A0096D\CAD\AIRPORT\SHEETE-104-VLT.DWG

FOR BID



DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

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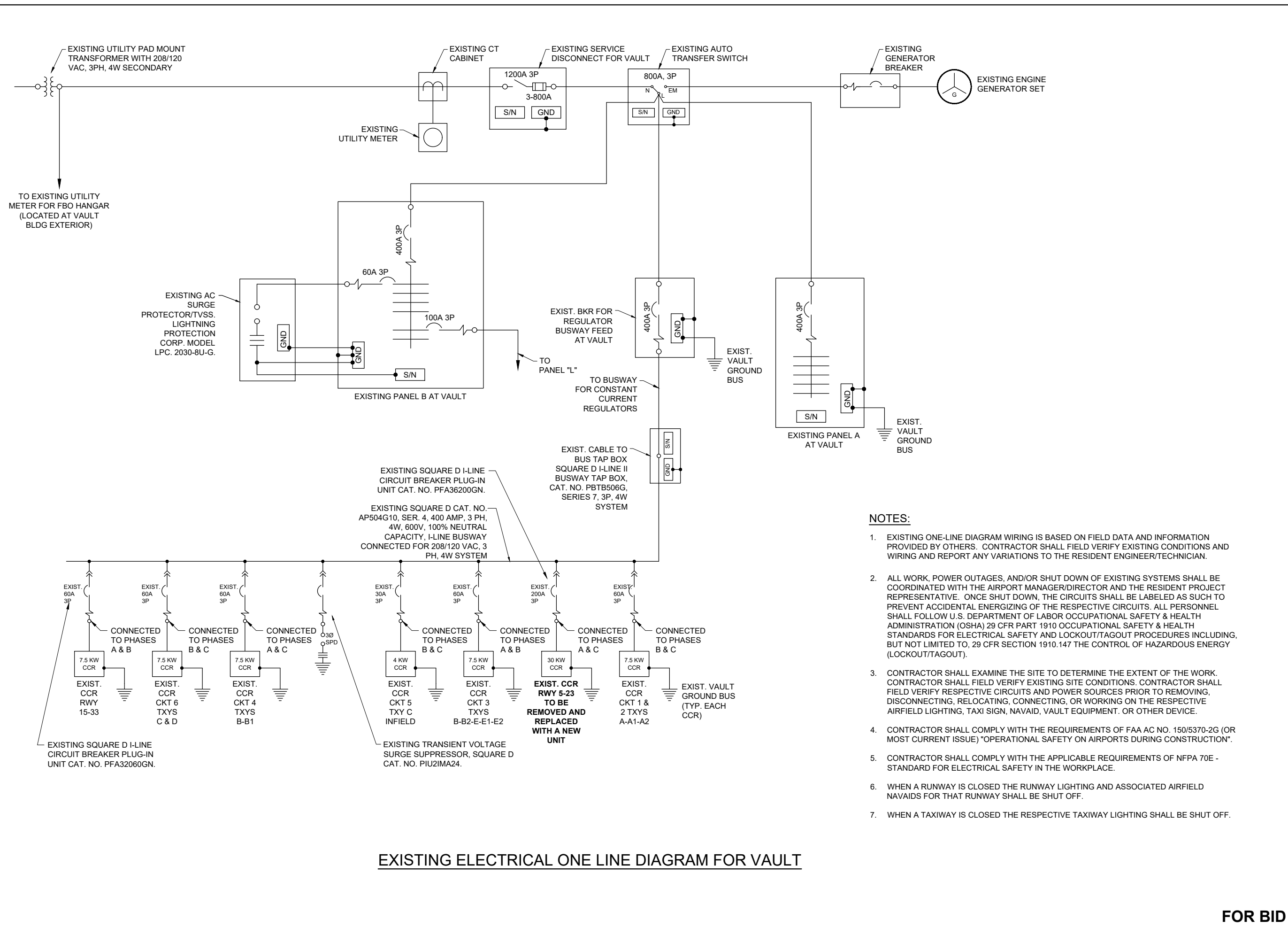
DESIGN BY: KNL 3/12/2022

DRAWN BY: CWS 3/15/2022

REVIEWED BY: KNL 3/24/2022

SHEET TITLE

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT



- NOTES:**
- EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/TECHNICIAN.
 - ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND THE RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
 - CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, CONNECTING, OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT. OR OTHER DEVICE.
 - CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
 - CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
 - WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
 - WHEN A TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING SHALL BE SHUT OFF.

EXISTING ELECTRICAL ONE LINE DIAGRAM FOR VAULT

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

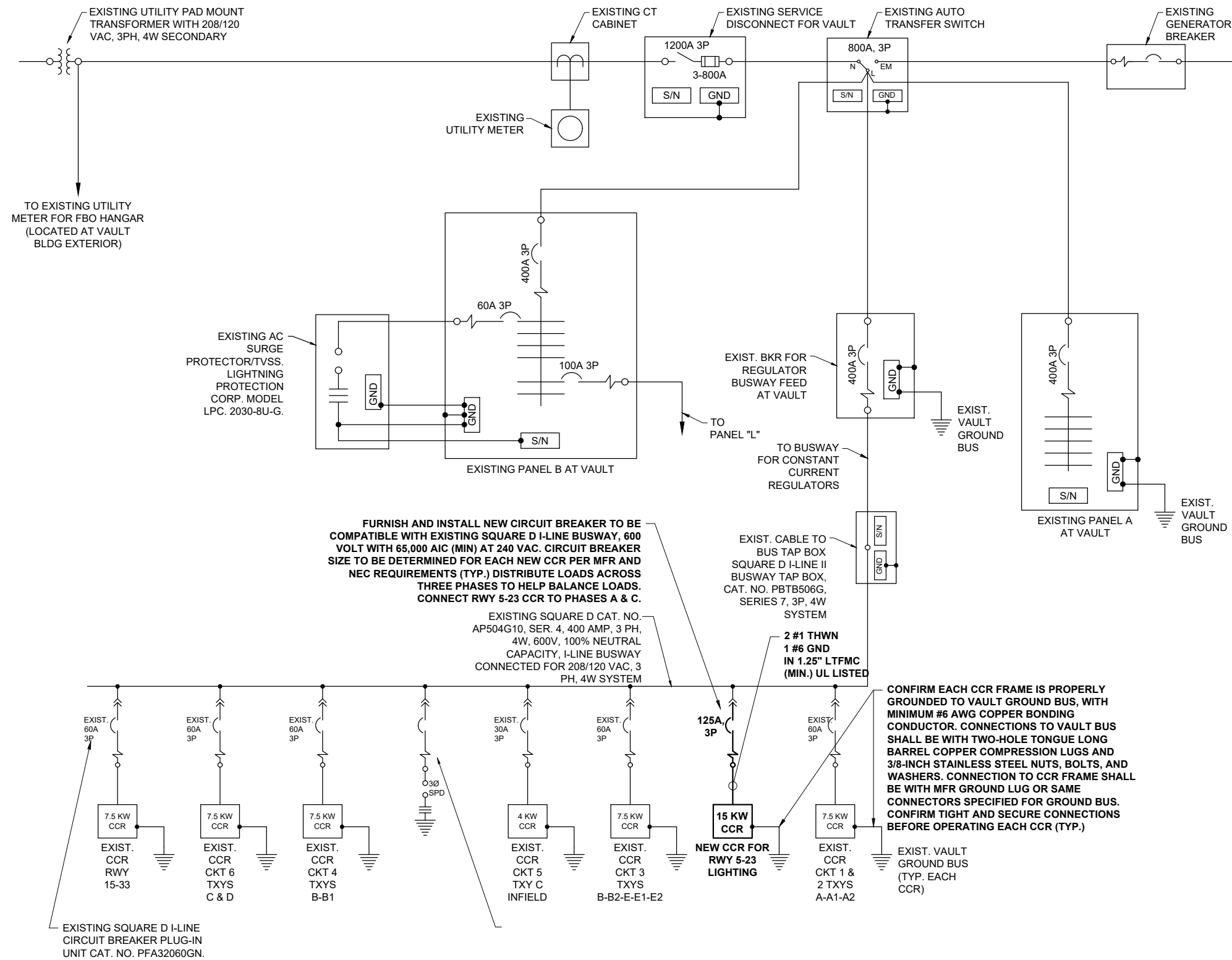
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 21A0096D
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DESIGN BY: KNL 3/12/2022
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REVIEWED BY: KNL 3/24/2022

SHEET TITLE

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR RUNWAY 5-23

FOR BID



NOTES

- 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).
- 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.
- ALL CONDUCTORS/WIRING SHALL BE COPPER.
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 4 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 3 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:

208/120 VAC, 3 PHASE, 4 WIRE	
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUND	GREEN
- 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.
- 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.
- 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.
- EQUIPMENT AND MATERIALS NOT LABELED AS "EXISTING" ARE NEW.
- CONTRACTOR IS REQUIRED TO HAVE AN APPLICABLE ELECTRICAL CONTRACTOR LICENSE AND OBTAIN REQUIRED PERMITS FROM THE RESPECTIVE AUTHORITY OF JURISDICTION.
- CONNECT EXISTING CONTROL WIRING TO EACH REPLACEMENT CCR. DOCUMENT AND LABEL EXISTING CONTROL WIRING FOR EACH CCR TO BE REPLACED PRIOR TO REMOVAL OF RESPECTIVE EXISTING CCR.
- PROVIDE LOCKOUT STATION WITH 10 LOCKOUT PADLOCKS, EACH WITH A DIFFERENT KEY, 5 LOCKOUT HASPS TO ACCOMMODATE MULTIPLE PADLOCKS, AND 100 LOCKOUT TAGS IN COMPLIANCE WITH OSHA STANDARD 1910.147.

FURNISH AND INSTALL NEW CIRCUIT BREAKER TO BE COMPATIBLE WITH EXISTING SQUARE D I-LINE BUSWAY, 600 VOLT WITH 65,000 AIC (MIN) AT 240 VAC. CIRCUIT BREAKER SIZE TO BE DETERMINED FOR EACH NEW CCR PER MFR AND NEC REQUIREMENTS (TYP.) DISTRIBUTE LOADS ACROSS THREE PHASES TO HELP BALANCE LOADS. CONNECT RWY 5-23 CCR TO PHASES A & C.

EXISTING SQUARE D CAT. NO. AP504G10, SER. 4, 400 AMP, 3 PH, 4W, 600V, 100% NEUTRAL CAPACITY, I-LINE BUSWAY CONNECTED FOR 208/120 VAC, 3 PH, 4W SYSTEM

EXIST. CABLE TO BUS TAP BOX SQUARE D I-LINE II BUSWAY TAP BOX, CAT. NO. PBTB506G, SERIES 7, 3P, 4W SYSTEM

2 #1 THWN
1 #6 GND
IN 1.25" LTFMC (MIN.) UL LISTED

CONFIRM EACH CCR FRAME IS PROPERLY GROUNDED TO VAULT GROUND BUS, WITH MINIMUM #6 AWG COPPER BONDING CONDUCTOR. CONNECTIONS TO VAULT BUS SHALL BE WITH TWO-HOLE TONGUE LONG BARREL COPPER COMPRESSION LUGS AND 3/8-INCH STAINLESS STEEL NUTS, BOLTS, AND WASHERS. CONNECTION TO CCR FRAME SHALL BE WITH MFR GROUND LUG OR SAME CONNECTORS SPECIFIED FOR GROUND BUS. CONFIRM TIGHT AND SECURE CONNECTIONS BEFORE OPERATING EACH CCR (TYP.)

PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR RUNWAY 5-23



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY
RUNWAY LIGHTS (HIRL)
ON PRIMARY RUNWAY
AND REPLACE MEDIUM
INTENSITY RUNWAY
LIGHTS (MIRL) ON
CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023
PROJECT NO: 21A0096D
CAD FILE: E-602-SCHM.DWG
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SHEET TITLE

RUNWAY AND
TAXIWAY LIGHTING
CONTROL
SCHEMATIC WIRING
DIAGRAM

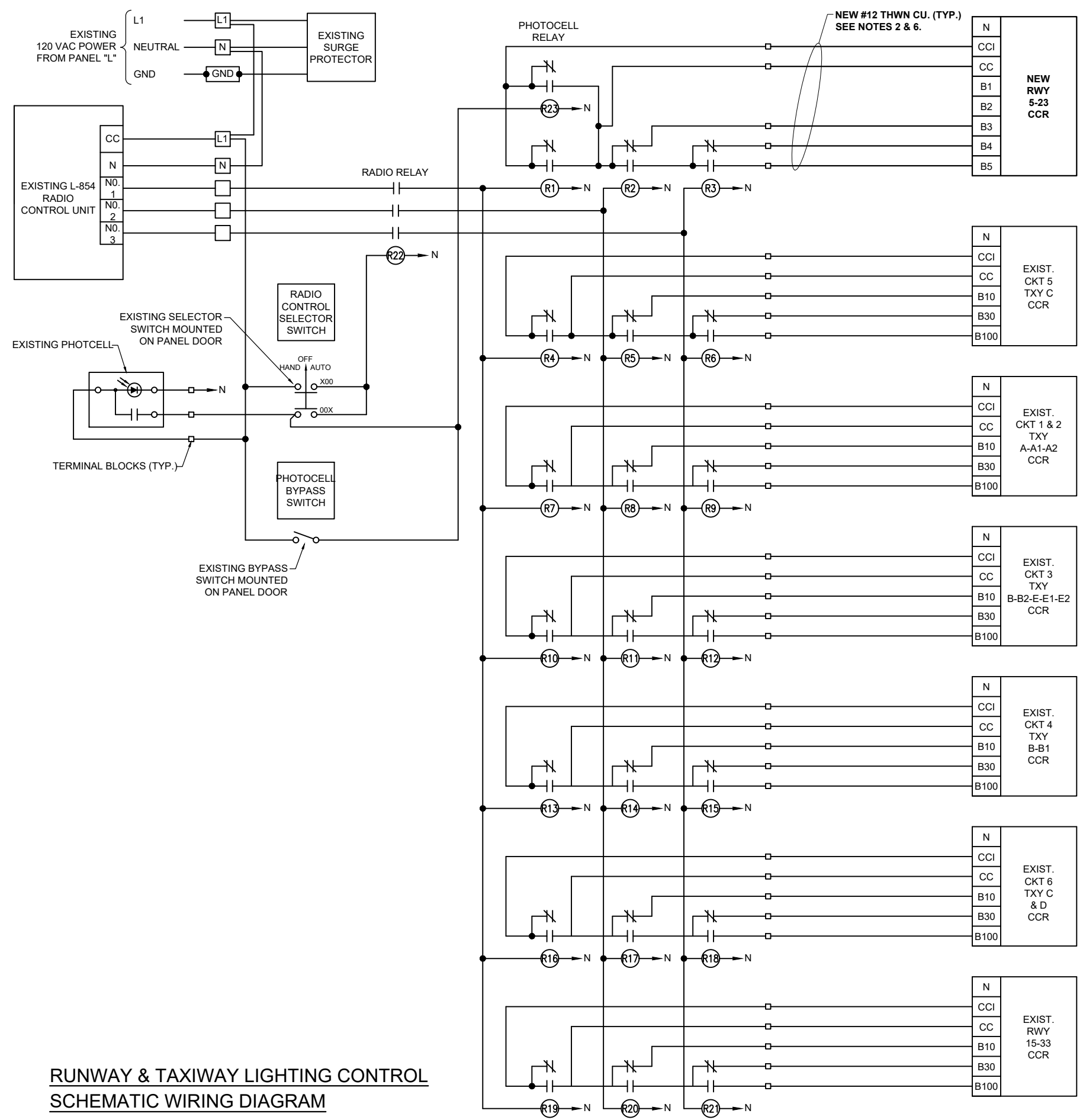
NOTES:

- RELAY INTERFACE CONTROL PANEL IS EXISTING, MANUFACTURED BY UNIVERSE, INC., NORMAL, IL..
- EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE. ALL PANEL INTERIOR CONTROL CABLE SHALL BE MINIMUM 16 AWG, COPPER, 600 VOLT CABLE.
- IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 5-23 CIRCUIT WILL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:
PHOTOCELL -B3-5% BRIGHTNESS & ACTIVATE RADIO CONTROL
3 CLICKS -B3-5% BRIGHTNESS
5 CLICKS -B4-25% BRIGHTNESS
7 CLICKS -B5-100% BRIGHTNESS
- IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 15-33 & TAXIWAY CIRCUITS WILL 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
- EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
- COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE AS FOLLOWS.

3 STEP CCR
CCI -BLACK
CC -RED
10% -ORANGE
30% -YELLOW
100% -BLUE
NEUTRAL -WHITE
EQUIPT. GND -GREEN

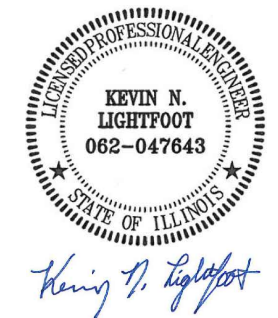
5 STEP CCR
CCI -BLACK
CC -RED
B3 -ORANGE
B4 -YELLOW
B5 -BLUE
NEUTRAL -WHITE
EQUIPT. GND -GREEN

ALSO TAG THE CONTROL WIRES WITH THE RESPECTIVE DESIGNATION (CCI, CC, 10%, 30%, 100%)



**RUNWAY & TAXIWAY LIGHTING CONTROL
SCHEMATIC WIRING DIAGRAM**

FOR BID



REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBG-TBD
Contract No. MV068

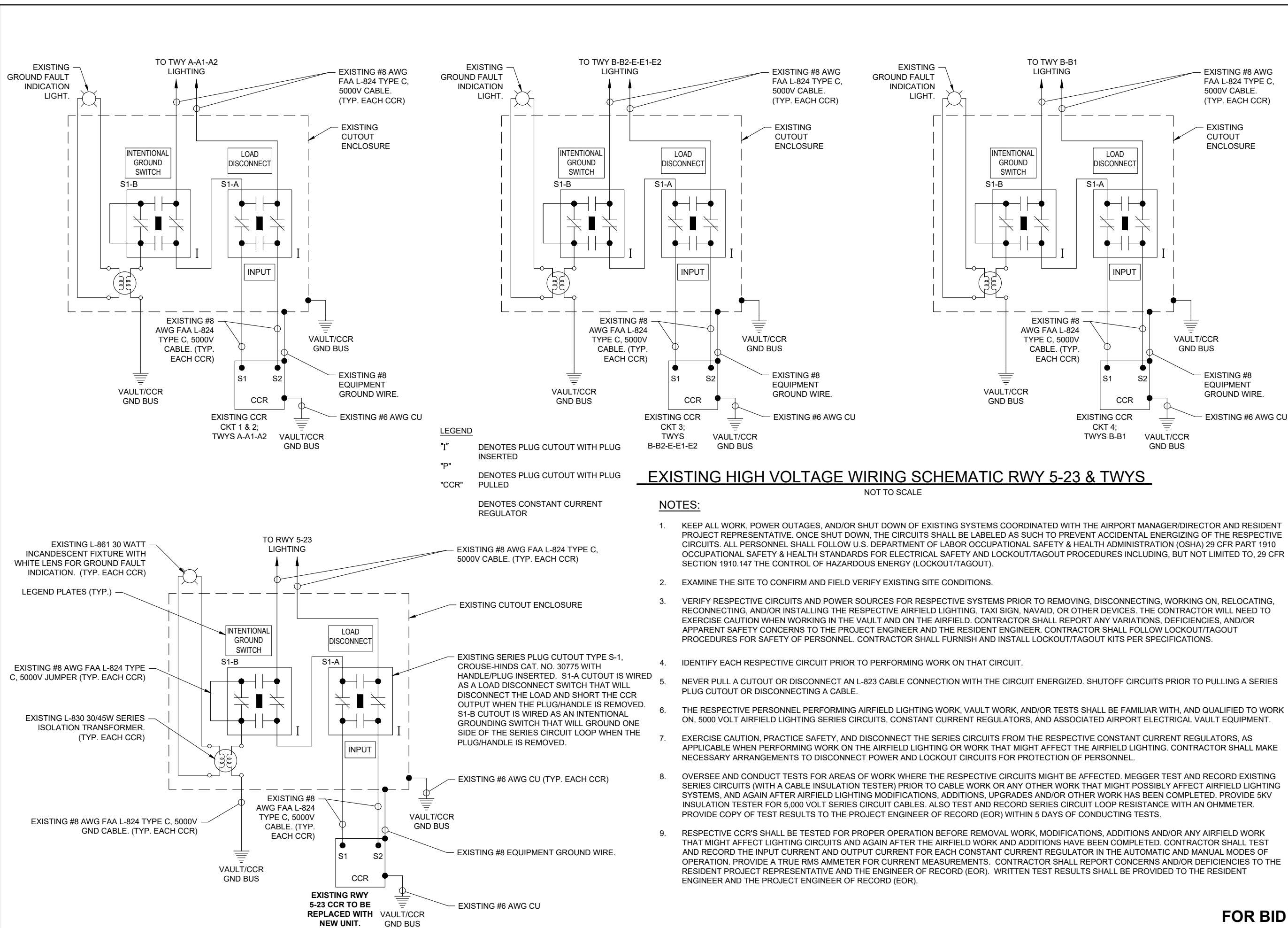
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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REVIEWED BY: KNL 3/24/2022

SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATICS RWY 5-23 & TWYS

FOR BID



LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

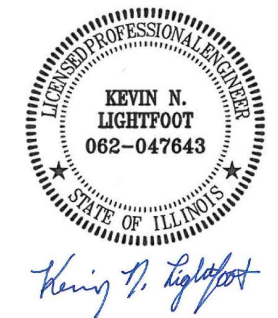
EXISTING HIGH VOLTAGE WIRING SCHEMATIC RWY 5-23 & TWYS

NOT TO SCALE

NOTES:

- KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER AND THE RESIDENT ENGINEER. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES FOR SAFETY OF PERSONNEL. CONTRACTOR SHALL FURNISH AND INSTALL LOCKOUT/TAGOUT KITS PER SPECIFICATIONS.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NEVER PULL A CUTOUT OR DISCONNECT AN L-823 CABLE CONNECTION WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING A SERIES PLUG CUTOUT OR DISCONNECTING A CABLE.
- THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH, AND QUALIFIED TO WORK ON, 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
- EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
- OVERSEE AND CONDUCT TESTS FOR AREAS OF WORK WHERE THE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS (WITH A CABLE INSULATION TESTER) PRIOR TO AIRFIELD WORK OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES AND/OR OTHER WORK HAS BEEN COMPLETED. PROVIDE 5KV INSULATION TESTER FOR 5,000 VOLT SERIES CIRCUIT CABLES. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE WITH AN OHMMETER. PROVIDE COPY OF TEST RESULTS TO THE PROJECT ENGINEER OF RECORD (EOR) WITHIN 5 DAYS OF CONDUCTING TESTS.
- RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK 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 OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER AND THE PROJECT ENGINEER OF RECORD (EOR).

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REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBG-TBD
Contract No. MV068

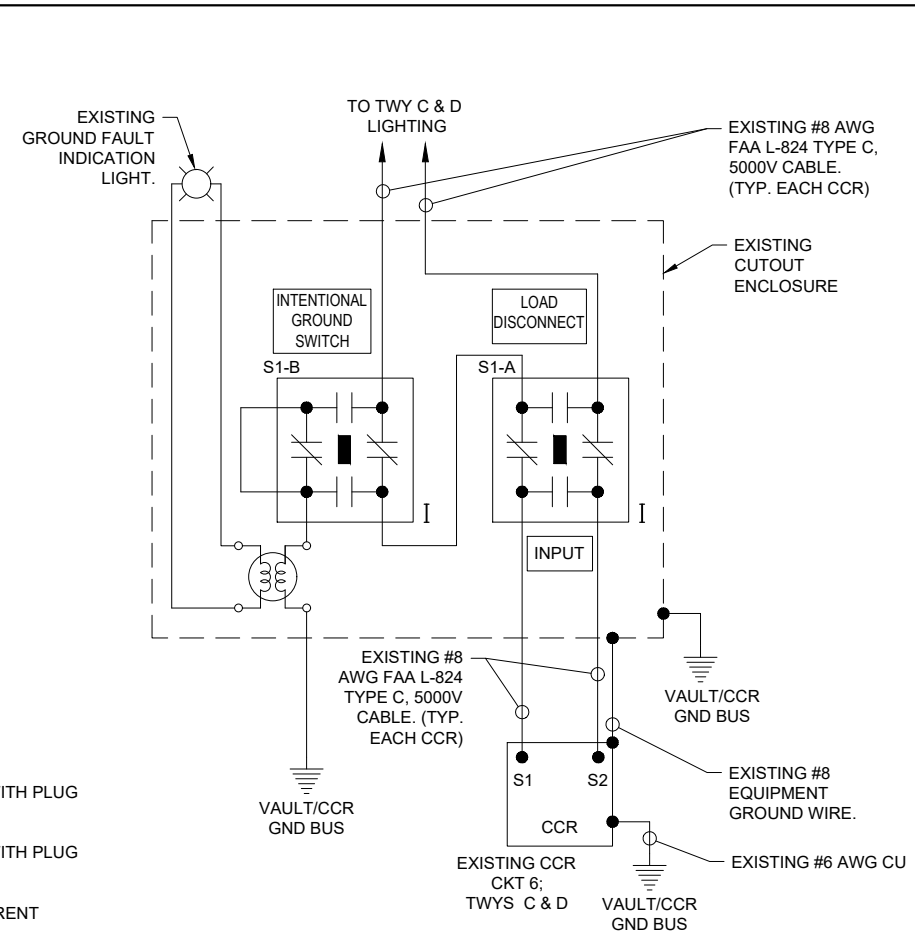
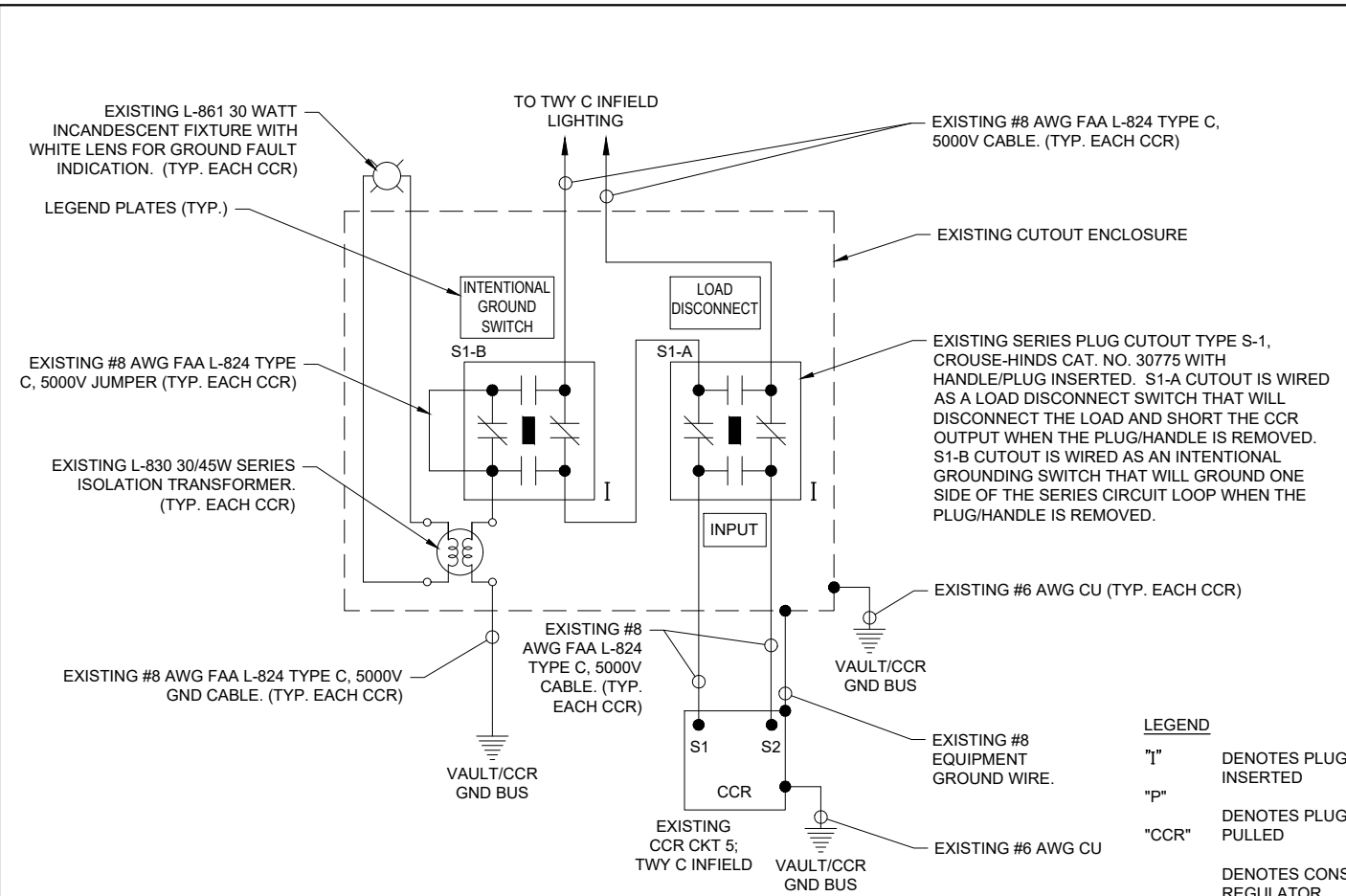
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SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATICS RWY 15-33 & TWYS

FOR BID



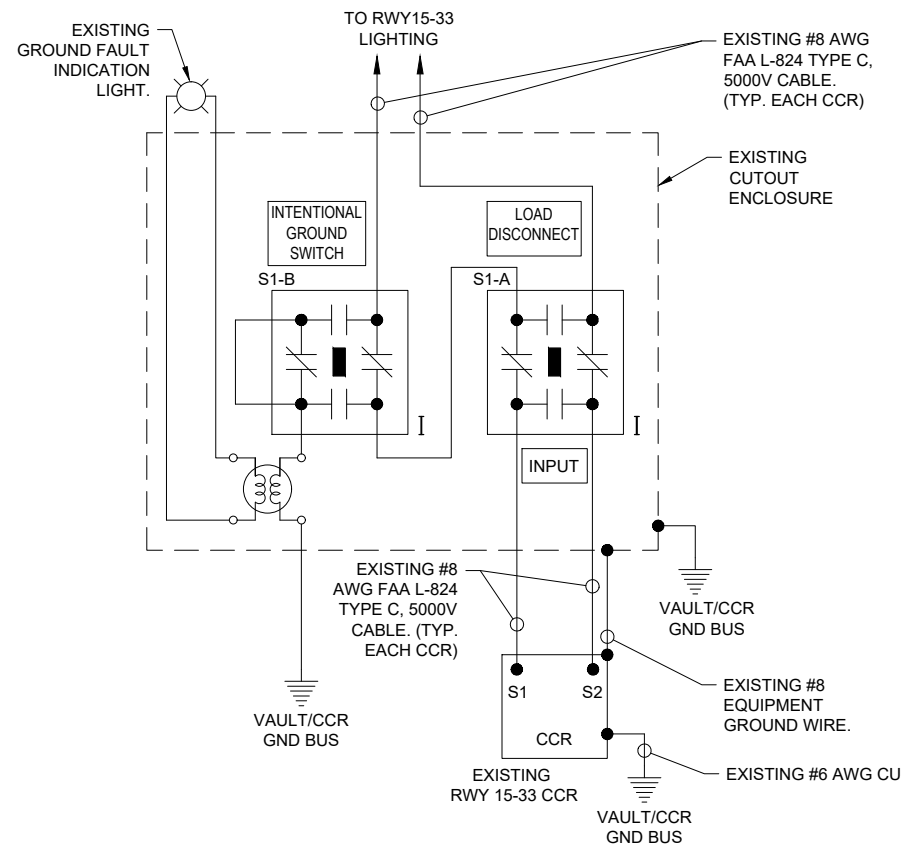
LEGEND
 "I" DENOTES PLUG CUTOUT WITH PLUG INSERTED
 "P" DENOTES PLUG CUTOUT WITH PLUG PULLED
 "CCR" DENOTES CONSTANT CURRENT REGULATOR

EXISTING HIGH VOLTAGE WIRING SCHEMATIC RWY 15-33 & TWYS

NOT TO SCALE

NOTES:

- KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER AND THE RESIDENT ENGINEER. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES FOR SAFETY OF PERSONNEL. CONTRACTOR SHALL FURNISH AND INSTALL LOCKOUT/TAGOUT KITS PER SPECIFICATIONS.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NEVER PULL A CUTOUT OR DISCONNECT AN L-823 CABLE CONNECTION WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING A SERIES PLUG CUTOUT OR DISCONNECTING A CABLE.
- THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH, AND QUALIFIED TO WORK ON, 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
- EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
- OVERSEE AND CONDUCT TESTS FOR AREAS OF WORK WHERE THE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS (WITH A CABLE INSULATION TESTER) PRIOR TO CABLE WORK OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES AND/OR OTHER WORK HAS BEEN COMPLETED. PROVIDE 5KV INSULATION TESTER FOR 5,000 VOLT SERIES CIRCUIT CABLES. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE WITH AN OHMMETER. PROVIDE COPY OF TEST RESULTS TO THE PROJECT ENGINEER OF RECORD (EOR) WITHIN 5 DAYS OF CONDUCTING TESTS.
- RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK 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 OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER AND THE PROJECT ENGINEER OF RECORD (EOR).





Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

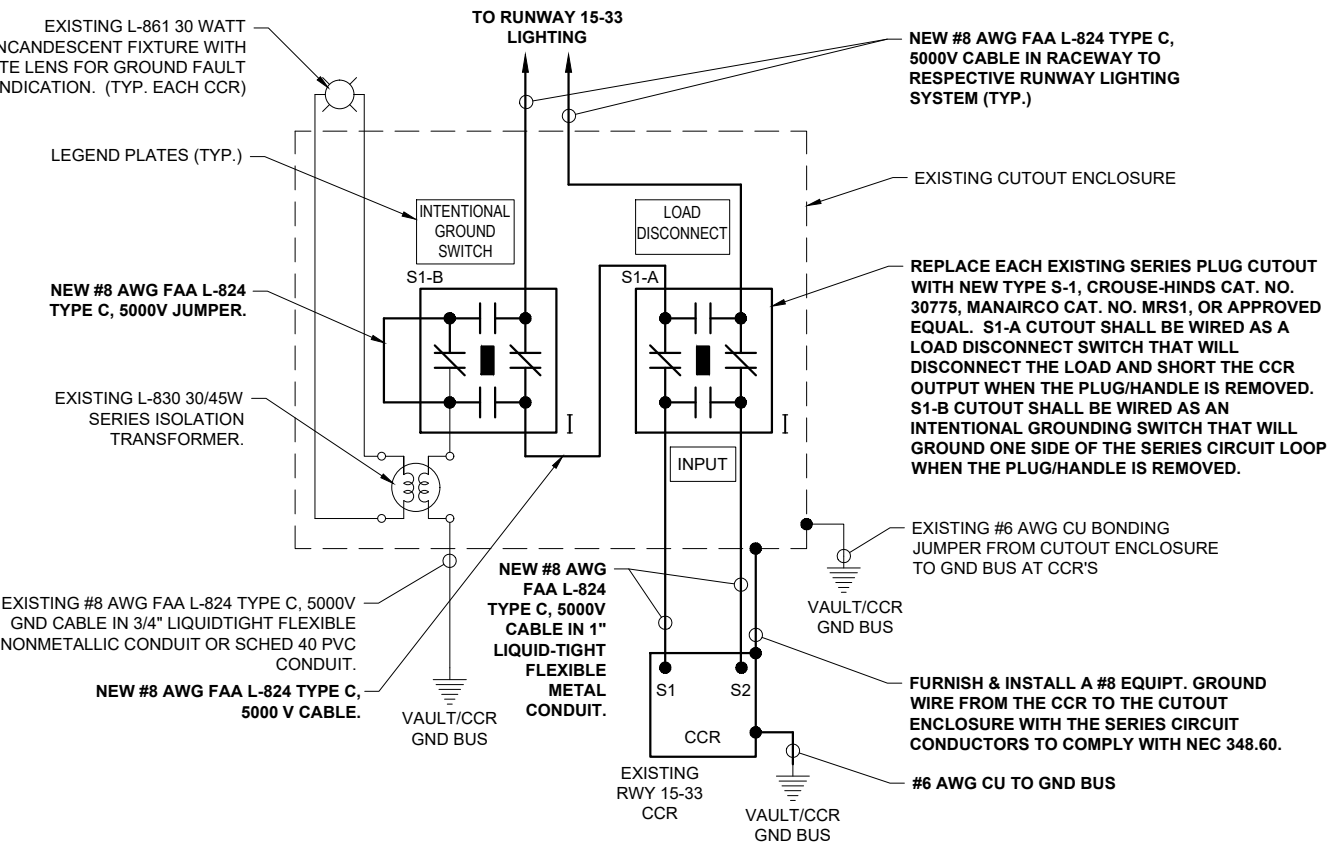
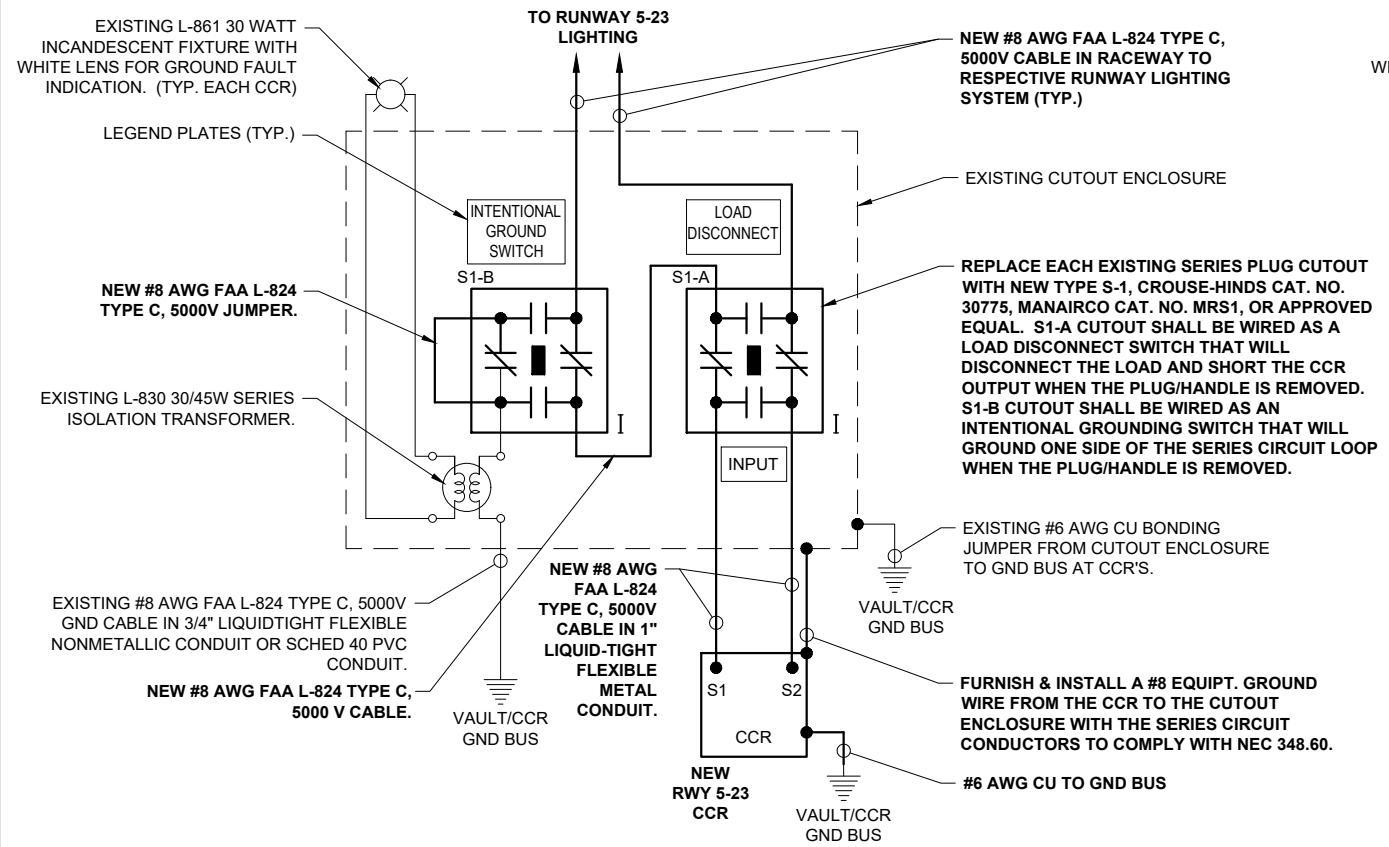
IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
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ISSUE: MARCH 3, 2023
PROJECT NO: 21A0096D
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REVIEWED BY: KNL 3/24/2022

SHEET TITLE

PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR RUNWAYS



PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR RUNWAYS

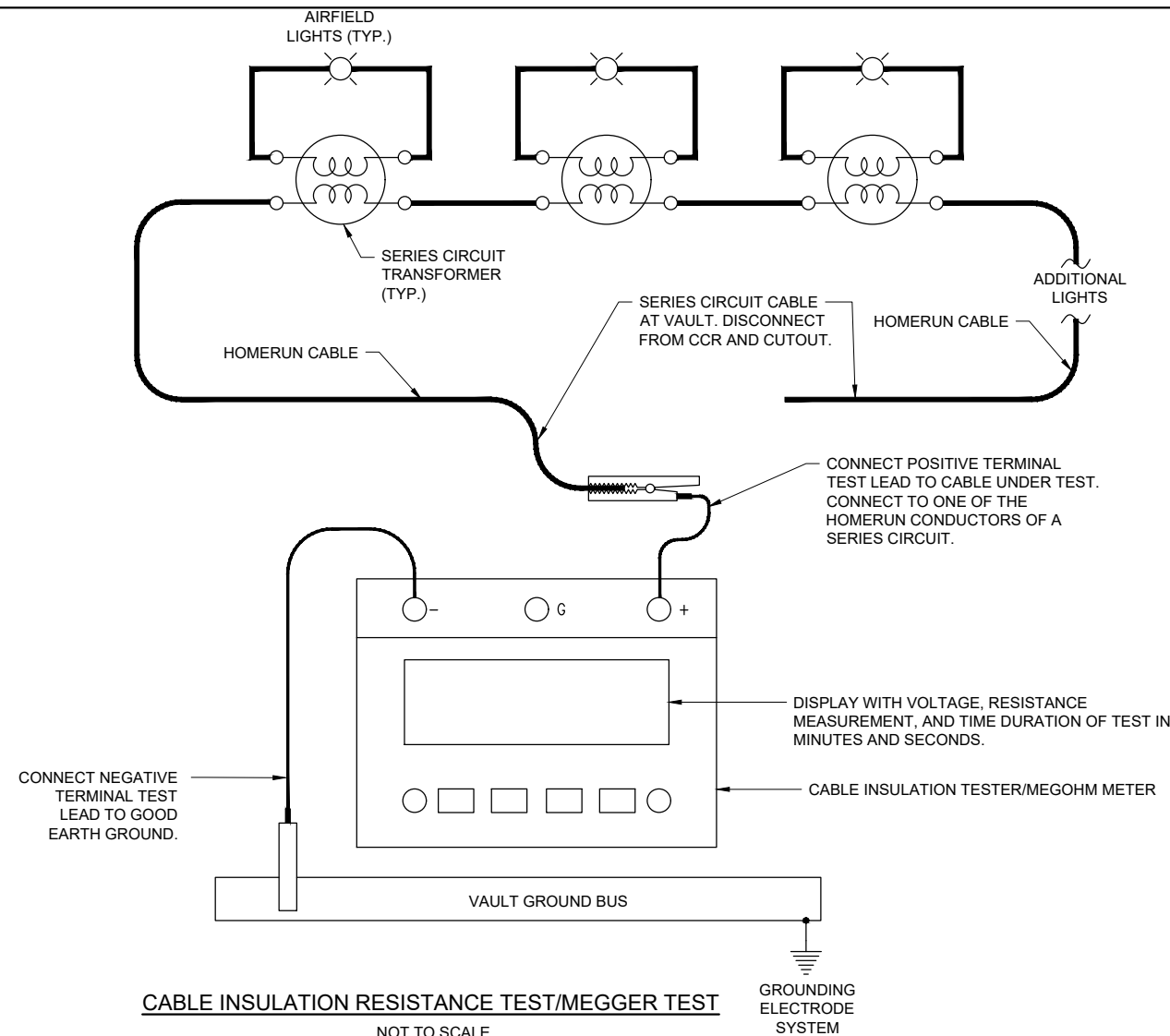
LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

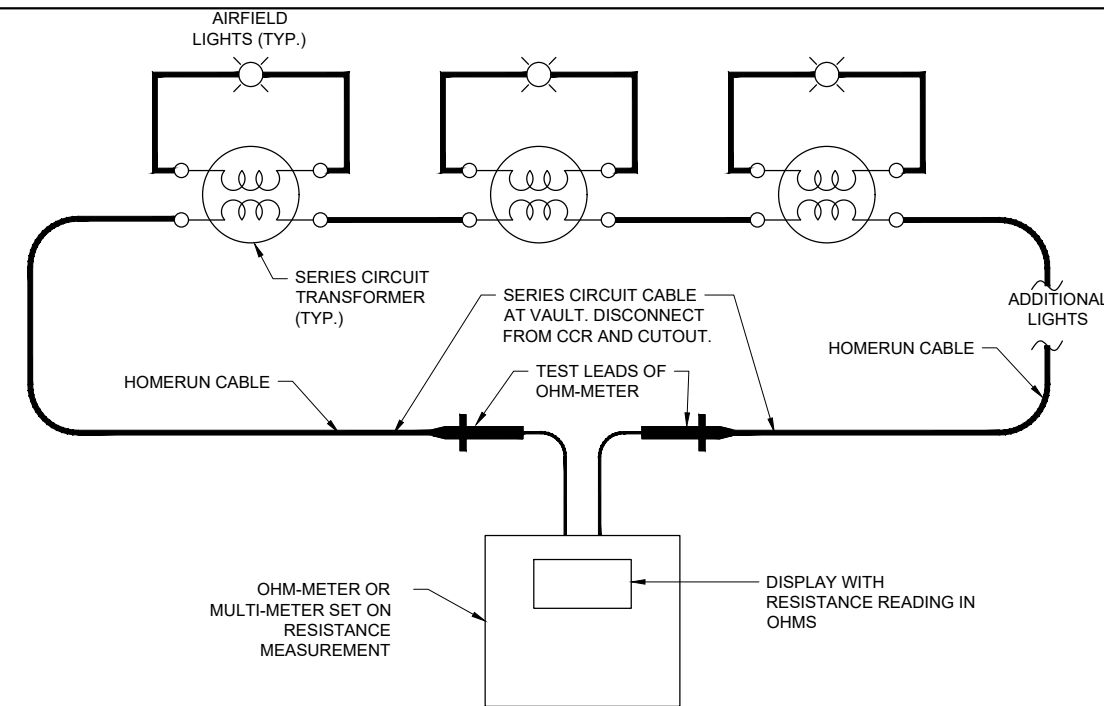
- NOTES:**
- REFER TO COOPER CROUSE-HINDS "TROUBLESHOOTING AIRFIELD SERIES CIRCUITS" GUIDE FOR INFORMATION ON INTENTIONAL GROUNDING METHOD TO ASSIST IN LOCATING GROUND FAULTS ON AIRFIELD LIGHTING CIRCUITS.
 - PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION AND THE RUNWAY OR TAXIWAY SERVED.
 - EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF". FURNISH & INSTALL A WARNING LABEL FOR CUTOUT ENCLOSURE TO WARN PERSONS OF POTENTIAL ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE RESPECTIVE CUTOUT INPUT CONNECTION AND THE RESPECTIVE CUTOUT OUTPUT CONNECTION.
 - LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLATION
 - SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, AND SHALL COMPLY WITH FAA AC 150/5340-4C. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, MANAIRCO CAT. NO. MRS1 OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
 - HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
 - PROVIDE UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE.
 - BOND ALL REGULATORS TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER FOR EACH REGULATOR.



CABLE INSULATION RESISTANCE TEST/MEGGER TEST
NOT TO SCALE

CABLE INSULATION RESISTANCE TEST (MEGGER TEST) NOTES

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 DETERIORATION 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.
- 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

- 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.
- 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.
- 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.



Offices Nationwide
www.hanson-inc.com
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62703
phone: 217-788-2450
fax: 217-788-2503

Illinois Licensed
Professional Service Corporation
#184-001084



100 AVIATION DRIVE
MT VERNON, IL 62864



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY RUNWAY LIGHTS (HIRL) ON PRIMARY RUNWAY AND REPLACE MEDIUM INTENSITY RUNWAY LIGHTS (MIRL) ON CROSSWIND RUNWAY

IDA No: MVN-4951
SBG No. 3-17-SBGP-TBD
Contract No. MV068

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MARCH 3, 2023
PROJECT NO: 21A0096D
CAD FILE: E-604.DWG
DESIGN BY: KNL 3/12/2022
DRAWN BY: CWS 3/15/2022
REVIEWED BY: KNL 3/24/2022

SHEET TITLE

SERIES CIRCUIT CABLE TESTING DETAILS

FOR BID

MAR 08, 2023 10:08 AM SCHUB01446 1:21:00S121A0096D\CAD\AIRPORT\SHEETE-604.DWG



Kevin N. Lightfoot

DATE SIGNED: 3/3/2023 LICENSE EXPIRES: 11/30/2023

REPLACE HIGH INTENSITY
RUNWAY LIGHTS (HIRL)
ON PRIMARY RUNWAY
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INTENSITY RUNWAY
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NO.	DATE	DESCRIPTION		
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ISSUE: MARCH 3, 2023
PROJECT NO: 21A0096D
CAD FILE: E-608.DWG
DESIGN BY: KNL 3/23/2022
DRAWN BY: CWS 3/23/2022
REVIEWED BY: KNL 3/24/2022

SHEET TITLE

LEGEND PLATE
SCHEDULES

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
VAULT SERVICE DISCONNECT	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED BY AMEREN TO BE 41,650 AMPS LINE TO LINE ON 3/23/2022
RUNWAY 5-23 LIGHTING CCR	RUNWAY 5-23 HIGH INTENSITY LIGHTING CCR
RUNWAY 15-33 LIGHTING CCR	RUNWAY 15-33 MEDIUM INTENSITY LIGHTING CCR
VAULT PANEL A	VAULT PANEL A 208/120 VAC, 3PH, 4-WIRE FED FROM AUTO TRANSFER SWITCH
VAULT PANEL A	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED BY AMEREN TO BE 41,650 AMPS LINE TO LINE ON 3/23/2022
VAULT PANEL B	VAULT PANEL B 208/120 VAC, 3PH, 4-WIRE FED FROM AUTO TRANSFER SWITCH
VAULT PANEL B	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED BY AMEREN TO BE 41,650 AMPS LINE TO LINE ON 3/23/2022
VAULT PANEL L	VAULT PANEL L 208/120 VAC, 3PH, 4-WIRE FED FROM VAULT PANEL B
BREAKER FOR VAULT CCR BUSWAY FEED	CCR BUSWAY 208/120 VAC, 3PH, 4-WIRE FED FROM AUTO TRANSFER SWITCH
BREAKER FOR VAULT CCR BUSWAY FEED	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED BY AMEREN TO BE 41,650 AMPS LINE TO LINE ON 3/23/2022

NOTES:

- LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "ARC-FLASH HAZARD WARNING".
- FAULT CURRENT INFORMATION TO BE PROVIDED BY SERVING ELECTRIC UTILITY COMPANY. CONTACT PROJECT ENGINEER TO CONFIRM FAULT CURRENT CALCULATIONS.



"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). PROVIDE MINIMUM OF 3 SIGNS (ONE ON EACH DOOR TO THE VAULT). SIGNS SHALL BE APPROXIMATELY 10"H X 14"W.



"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR EACH CUTOUT ENCLOSURE, EACH CONSTANT CURRENT REGULATOR, AND THE HIGH VOLTAGE WIREWAY, TO COMPLY WITH FAA AC 150/5340-26C "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES PART 2.11.1 WARNING SIGNS". LABELS SHALL BE APPROXIMATELY 4" X 6" OR 5" X 7".

FOR BID