ITEM NO. 12A IDOT LETTING: AUGUST 5, 2022

MV067
TOTAL SHEETS = 62

CONSTRUCTION PLANS - FOR BID, ISSUED JUNE 30, 2022

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

MT. VERNON AIRPORT AUTHORITY
MT. VERNON OUTLAND AIRPORT (MVN)
MT. VERNON, JEFFERSON COUNTY, ILLINOIS

IDA PROJECT NO. MVN-4950
SBG PROJECT NO. 3-17-SBGP-TBD

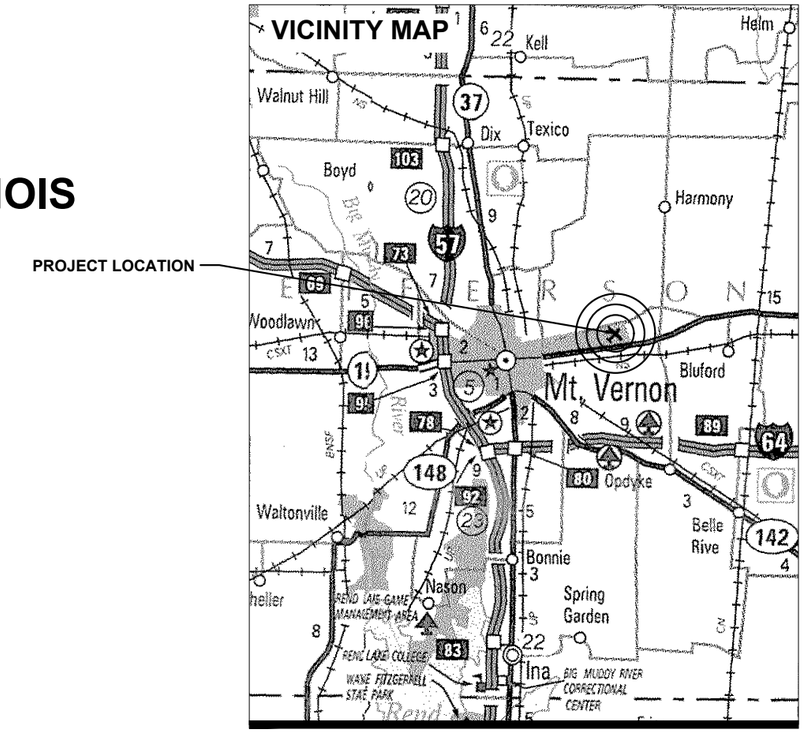
SCOPE OF WORK:

THIS PROJECT SHALL CONSIST OF REPLACING THE MEDIUM INTENSITY TAXIWAY LIGHTS ON ALL TAXIWAYS ON THE AIRFIELD.

NOTICE TO CONTRACTORS AND BIDDERS

THESE CONSTRUCTION PLANS RELY UPON THE SPECIAL PROVISIONS AND THE SPECIFICATIONS TO PROVIDE FOR A COMPLETE DESCRIPTION OF THE WORK AND CONSTRUCTION REQUIREMENTS. THE PLANS SHALL ONLY BE USED IN COMBINATION WITH ALL CONTRACT DOCUMENTS.

VICINITY MAP



LOCATION MAP

No.	Issue/Description	Sheets Changed	Date	By

KEVIN N. LIGHTFOOT
062-047643
LICENSED PROFESSIONAL ENGINEER
STATE OF ILLINOIS
EXP. 11/30/2023

Kevin N. Lightfoot, P.E.
Electrical Engineer

4/22/2022
Date

HANSON
HANSON PROFESSIONAL SERVICES INC.
1525 S. 6th Street
Springfield, IL 62703
phone: 217-788-2450
fax: 217-788-2503

BARRY S. STOLZ
062-057281
LICENSED PROFESSIONAL ENGINEER
STATE OF ILLINOIS
EXP 11/30/23

Barry Stolz, P.E.
Project Manager

4/22/22
Date

MVN
MT. VERNON OUTLAND AIRPORT
100 Aviation Drive
Mt. Vernon, IL 62864
Telephone: 618.242.7016

Chris Collins
Airport Manager

4/19/2022
Date

JUN 28, 2022 3:41 PM STOLZ01547
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SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AR108108	1/C #8 5 KV UG CABLE	FOOT	18,950	
AR108158	1/C #8 5 KV UG CABLE IN UD	FOOT	32,725	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L SUM	1	
AR110012	2" DIRECTIONAL BORE	FOOT	4,950	
AR110202	2" PVC DUCT, DIRECT BURY	FOOT	1,180	
AR110506	6-WAY CONCRETE ENCASED DUCT	FOOT	1,150	
AR115610	ELECTRICAL HANDHOLE	EACH	9	
AR125400	REPLACE ISOLATION TRANSFORMER	EACH	27	
AR125411	MITL-STAKE MOUNTED-LED	EACH	316	
AR125416	MITL-BASE MOUNTED-LED	EACH	66	
AR125565	SPLICE CAN	EACH	12	
AR150510	ENGINEER'S FIELD OFFICE	L SUM	1	
AR150520	MOBILIZATION	L SUM	1	
AR150530	TRAFFIC MAINTENANCE	L SUM	1	
AR800476	REMOVE AIRFIELD LIGHTING	L SUM	1	
AR800545	MITL, BASE MOUNTED SIZE D	EACH	16	

GENERAL NOTES:

QUANTITIES
PAYMENT WILL BE MADE UNDER THE ITEM NUMBERS, DESCRIPTIONS AND UNITS NOTED IN THE ABOVE TABLE IN ACCORDANCE WITH THE BASIS OF PAYMENT FOR EACH RESPECTIVE WORK ITEM COMPLETED AND ACCEPTED BY THE ENGINEER.

CERITIFIED PAYROLLS
THE RESIDENT ENGINEER/TECHNICIAN CANNOT FORWARD CONSTRUCTION REPORTS TO THE ILLINOIS DIVISION OF AERONAUTICS FOR PROCESSING UNTIL ALL CERTIFIED PAYROLLS FOR THE PERIOD HAVE BEEN RECEIVED.

MATERIAL CERTIFICATIONS
MATERIALS TO BE INCORPORATED INTO THE PROJECT CANNOT BE USED WITHOUT PRIOR APPROVAL. ALL MATERIALS TO BE USED IN THE PROJECT MUST BE SUBMITTED TO THE RESIDENT ENGINEER/TECHNICIAN FOR APPROVAL. USE OF MATERIALS WITHOUT PRIOR APPROVAL AND ULTIMATELY DETERMINED TO BE UNACCEPTABLE BY THE ILLINOIS DIVISION OF AERONAUTICS ARE SUBJECT TO REMOVAL AND/OR NON-PAYMENT.

INDEX TO SHEETS

FOR BID

HANSON
Engineering | Planning | Allied Services

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

MVN
MT. VERNON OUTLAND AIRPORT

100 AVIATION DRIVE
MT VERNON, IL 62864

STATE OF ILLINOIS
BARRY S. STOLZ
062-057281
LICENSED
PROFESSIONAL ENGINEER

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: G-002-FLP.DWG
DESIGN BY: KNL 3/31/2022
DRAWN BY: CWS 3/31/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

SUMMARY OF QUANTITIES AND INDEX TO SHEETS

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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 MEDIUM INTENSITY TAXIWAY LIGHTS ON ALL AIRFIELD TAXIWAYS, 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

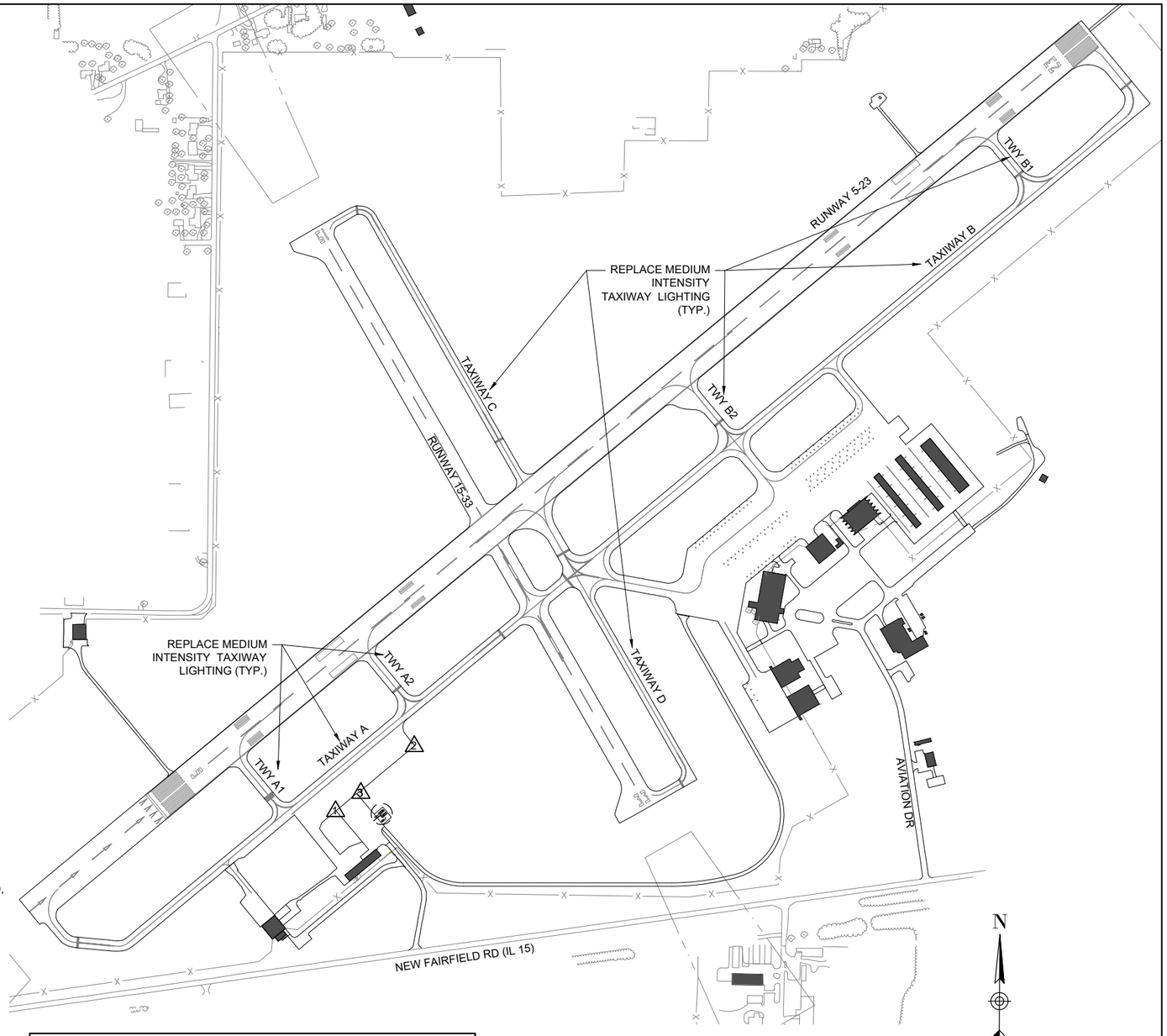
THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY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

Call Before You Dig
JULIE
Simply Call 811



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

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STATE OF ILLINOIS
BARRY S. STOLZ
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DATE SIGNED: 4/22/2022
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REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

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CAD FILE: G-003-SOW.DWG
DESIGN BY: KNL 3/31/2022
DRAWN BY: CWS 3/31/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

SCOPE OF WORK

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.

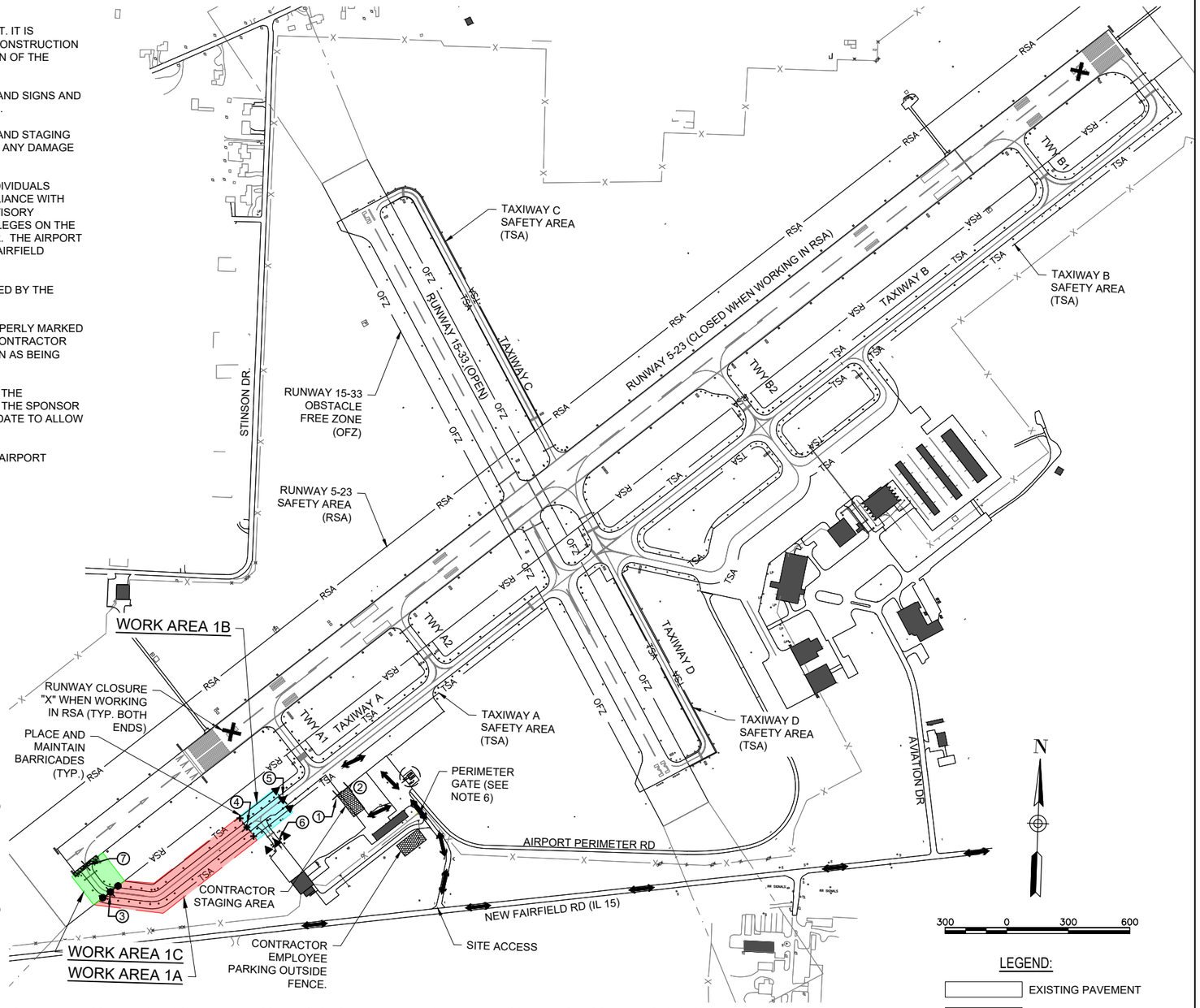
AIRFIELD SAFETY ASSURANCE - AIRFIELD SAFETY SHALL BE HELD PARAMOUNT AT ALL TIMES. ANY INDIVIDUALS RESPONSIBLE FOR INCURSIONS OR POTENTIAL INCURSIONS WITH AIR TRAFFIC DUE TO NON-COMPLIANCE WITH REQUIREMENTS SET FORTH IN THESE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND FAA ADVISORY CIRCULAR CURRENT 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.



PHASE 1 NOTES

1. WORK AREA 1A

1.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON THE SOUTHWEST END OF TAXIWAY A.

1.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 1A. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 1A.

2. WORK AREA 1B

2.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON THE SOUTHWEST END OF TAXIWAY A AT THE ENTRANCE TAXIWAY TO TENANT.

2.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 1B. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 1B.

2.3. ACCESS TO TENANT WILL BE UNAVAILABLE WHILE WORKING IN WORK AREA 1B. CONTRACTOR SHALL COORDINATE WORK IN WORK AREA 1B WITH AIRPORT MANAGER.

3. WORK AREA 1C

3.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON THE SOUTHWEST END OF TAXIWAY A IN THE RUNWAY 5-23 RUNWAY SAFETY AREA (RSA).

3.2. RUNWAY 5-23 WILL BE CLOSED WHILE WORKING IN WORK AREA 1C. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 1C.

4. AREA 1A AND AREA 1C MAY BE CONSTRUCTED SIMULTANEOUSLY, HOWEVER, TIME RESTRICTIONS FOR EACH AREA SHALL STILL BE ENFORCED.

5. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.

6. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.

7. ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 125' OF THE RUNWAY CENTERLINE, EXTENDED.

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 (MVN4951 - 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.

LEGEND:

- EXISTING PAVEMENT
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE
- PROPOSED PHASE 1A BARRICADES
- PROPOSED PHASE 1B BARRICADES
- PROPOSED PHASE 1C BARRICADES
- PROPOSED PHASE 1A & 1C BARRICADES

FOR BID

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STATE OF ILLINOIS
BARRY S. STOLZ
062-057281
LICENSED PROFESSIONAL ENGINEER

DATE SIGNED: 4/22/2022
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NO.	DATE	DESCRIPTION		
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ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: G-004-SFY.DWG
DESIGN BY: KNL 3/31/2022
DRAWN BY: KBD 3/31/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

SAFETY AND PHASING PLAN - PHASE 1

JUN 28, 2022 3:42 PM STOLZ01547
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PHASE 2 NOTES

1. WORK AREA 2A

   1.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON THE SOUTHWEST PORTION OF TAXIWAY A.

   1.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 2A. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 2A.

2. WORK AREA 2B

   2.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON THE SOUTHWEST PORTION OF TAXIWAY A IN THE RUNWAY 5-23 RUNWAY SAFETY AREA (RSA).

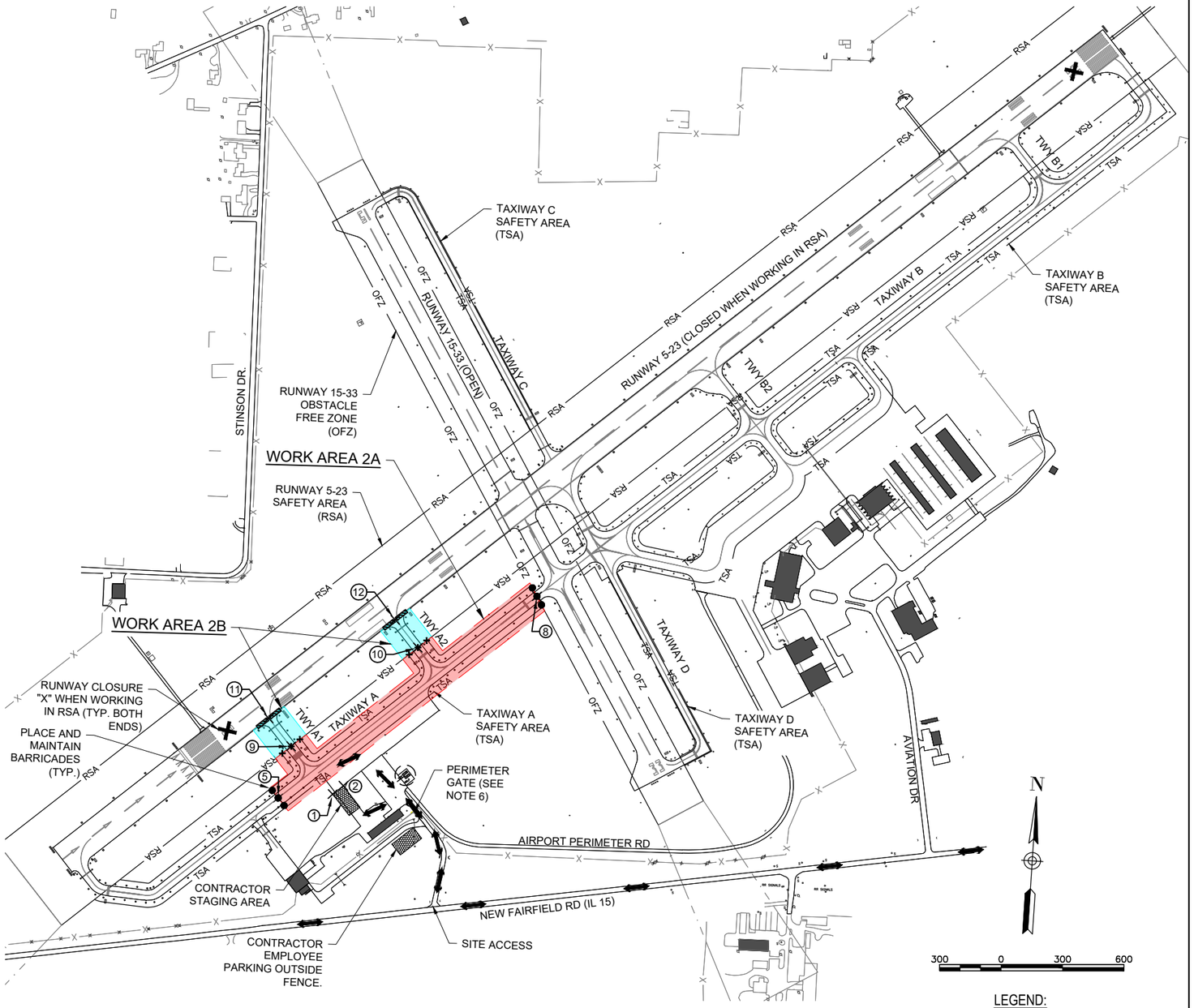
   2.2. RUNWAY 5-23 WILL BE CLOSED WHILE WORKING IN WORK AREA 2B. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 2B.

3. AREA 2A AND AREA 2B MAY BE CONSTRUCTED SIMULTANEOUSLY, HOWEVER, TIME RESTRICTIONS FOR EACH AREA SHALL STILL BE ENFORCED.

4. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.

5. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.

6. ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 125' OF THE RUNWAY CENTERLINE, EXTENDED.



LEGEND:

- EXISTING PAVEMENT
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE
- PROPOSED PHASE 2A BARRICADES
- PROPOSED PHASE 2B BARRICADES
- PROPOSED PHASE 2A & 2B BARRICADES

FOR BID

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BARRY S. STOLZ
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DESIGN BY: KNL 3/31/2022
DRAWN BY: KBD 3/31/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

SAFETY AND PHASING PLAN - PHASE 2

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PHASE 3 NOTES

1. WORK AREA 3A

   1.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON THE NORTHEAST END OF TAXIWAY B.

   1.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 3A. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 3A.

2. WORK AREA 3B

   2.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON THE NORTHEAST PORTION OF TAXIWAY B IN THE RUNWAY 5-23 RUNWAY SAFETY AREA (RSA).

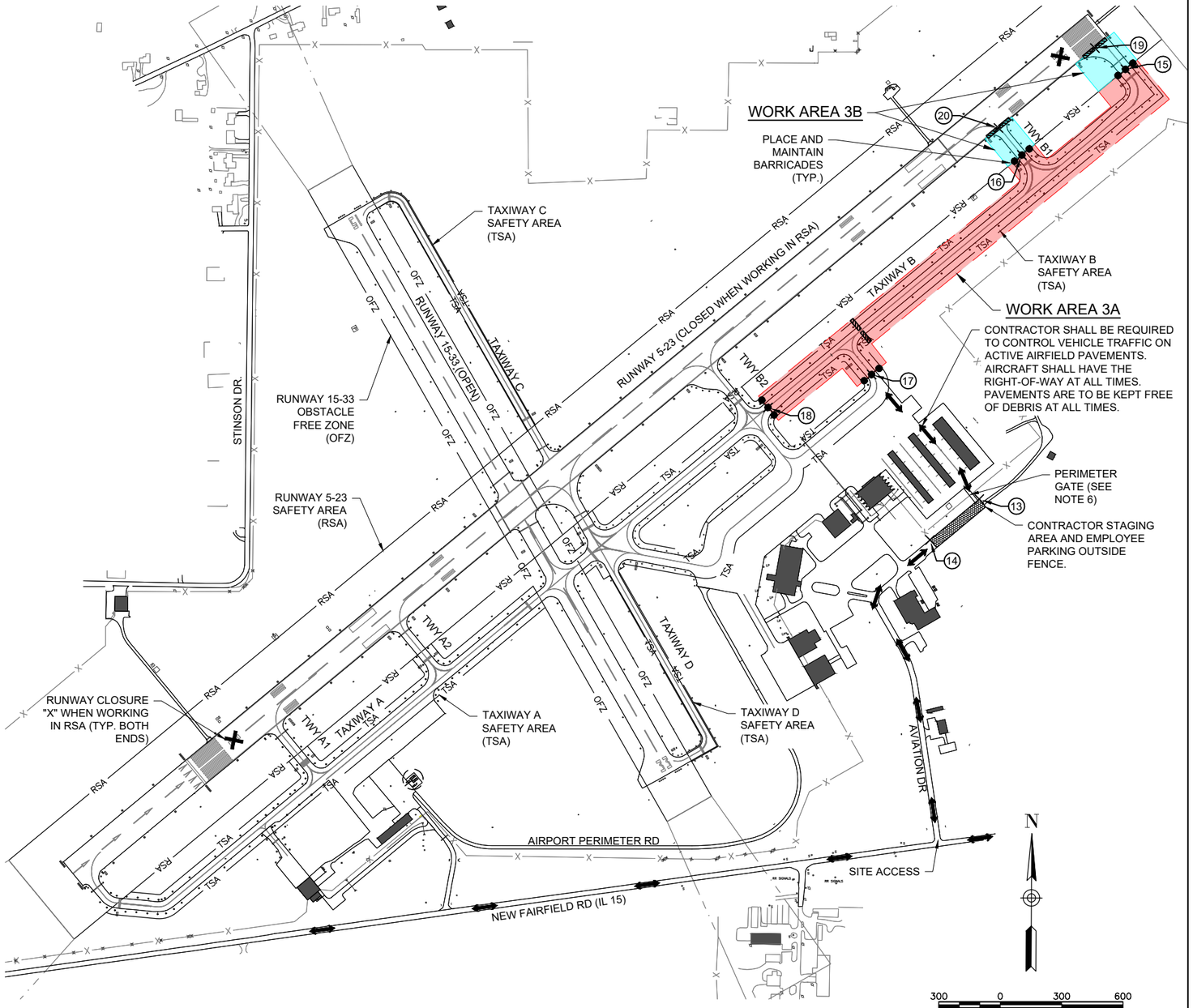
   2.2. RUNWAY 5-23 WILL BE CLOSED WHILE WORKING IN WORK AREA 3B. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 3B.

3. AREA 3A AND AREA 3B MAY BE CONSTRUCTED SIMULTANEOUSLY, HOWEVER, TIME RESTRICTIONS FOR EACH AREA SHALL STILL BE ENFORCED.

4. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.

5. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.

6. ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 125' OF THE RUNWAY CENTERLINE, EXTENDED.



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STATE OF ILLINOIS
BARRY S. STOLZ
062-057281
LICENSED PROFESSIONAL ENGINEER

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
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DRAWN BY: KBD 3/31/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

SAFETY AND PHASING PLAN - PHASE 3

PHASE 4 NOTES

1. WORK AREA 4A

   1.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY B FROM TAXIWAY B2 TO TAXIWAY C.

   1.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 4A. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 4A.

2. WORK AREA 4B

   2.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY B2 IN THE RUNWAY 5-23 RUNWAY SAFETY AREA (RSA).

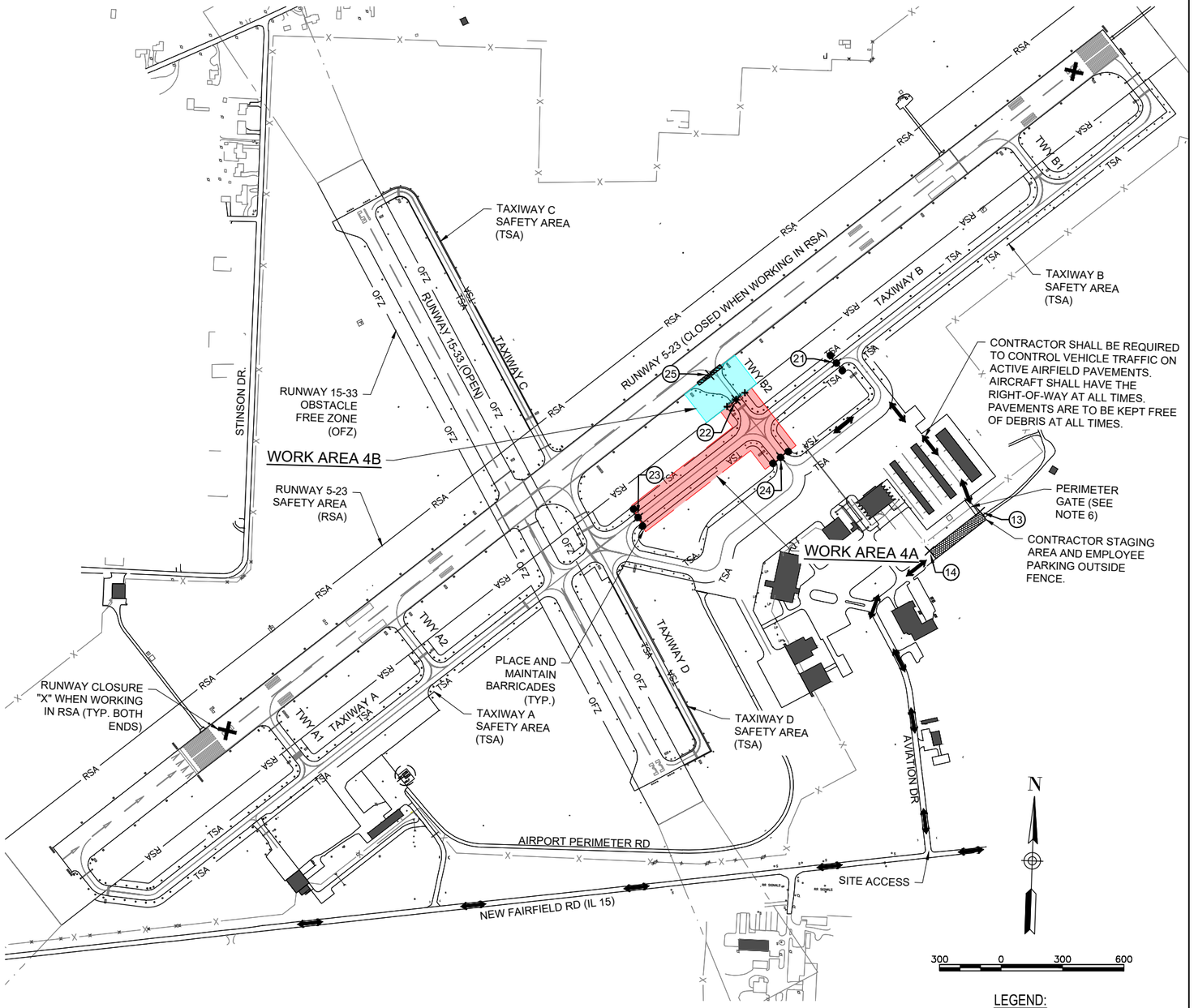
   2.2. RUNWAY 5-23 WILL BE CLOSED WHILE WORKING IN WORK AREA 4B. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 4B.

3. AREA 4A AND AREA 4B MAY BE CONSTRUCTED SIMULTANEOUSLY, HOWEVER, TIME RESTRICTIONS FOR EACH AREA SHALL STILL BE ENFORCED.

4. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.

5. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.

6. ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 125' OF THE RUNWAY CENTERLINE, EXTENDED.



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SHEET TITLE

SAFETY AND PHASING PLAN - PHASE 4

PHASE 5 NOTES

1. WORK AREA 5A

   1.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY D AND TAXIWAY E.

   1.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 5A. RUNWAY 15-33 REMAIN OPEN WHILE WORKING IN WORK AREA 5A.

2. WORK AREA 5B

   2.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY C SOUTH OF RUNWAY 5-23 IN THE RUNWAY 5-23 RUNWAY SAFETY AREA (RSA).

   2.2. RUNWAY 5-23 WILL BE CLOSED WHILE WORKING IN WORK AREA 5B. RUNWAY 15-33 REMAIN OPEN WHILE WORKING IN WORK AREA 5B.

3. WORK AREA 5C

   3.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY D AND TAXIWAY A/B CROSSING IN THE RUNWAY 15-33 OBJECT FREE ZONE (OFZ).

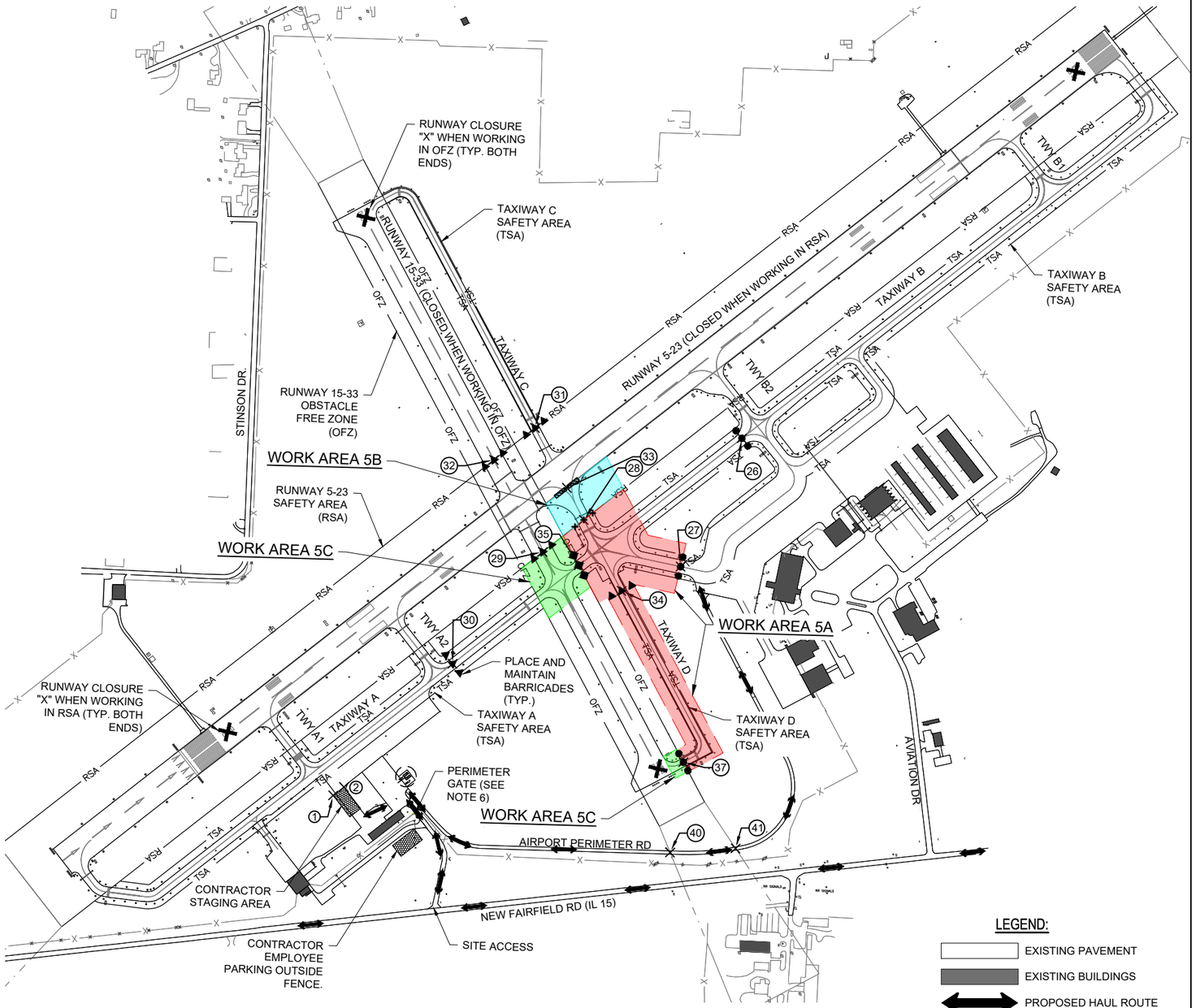
   3.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 5C. RUNWAY 15-33 WILL BE CLOSED WHILE WORKING IN WORK AREA 5C.

4. AREA 5A, 5B, AND 5C MAY BE CONSTRUCTED SIMULTANEOUSLY, HOWEVER, TIME RESTRICTIONS FOR EACH AREA SHALL STILL BE ENFORCED.

5. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.

6. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.

7. ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 125' OF THE RUNWAY CENTERLINE, EXTENDED.



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SHEET TITLE

SAFETY AND PHASING PLAN - PHASE 5

PHASE 6 NOTES

1. WORK AREA 6A

   1.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY C NORTH OF RUNWAY 5-23.

   1.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 6A. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 6A.

2. WORK AREA 6B

   2.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY C NORTH OF RUNWAY 5-23 IN THE RUNWAY 5-23 RUNWAY SAFETY AREA (RSA).

   2.2. RUNWAY 5-23 WILL BE CLOSED WHILE WORKING IN WORK AREA 6B. RUNWAY 15-33 WILL REMAIN OPEN WHILE WORKING IN WORK AREA 6B.

3. WORK AREA 6C

   3.1. WORK INCLUDES REMOVING AND REPLACING TAXIWAY EDGE LIGHTS ON TAXIWAY C IN THE RUNWAY 15-33 OBJECT FREE ZONE (OFZ).

   3.2. RUNWAY 5-23 WILL BE OPEN WHILE WORKING IN WORK AREA 6C. RUNWAY 15-33 WILL BE CLOSED WHILE WORKING IN WORK AREA 6C.

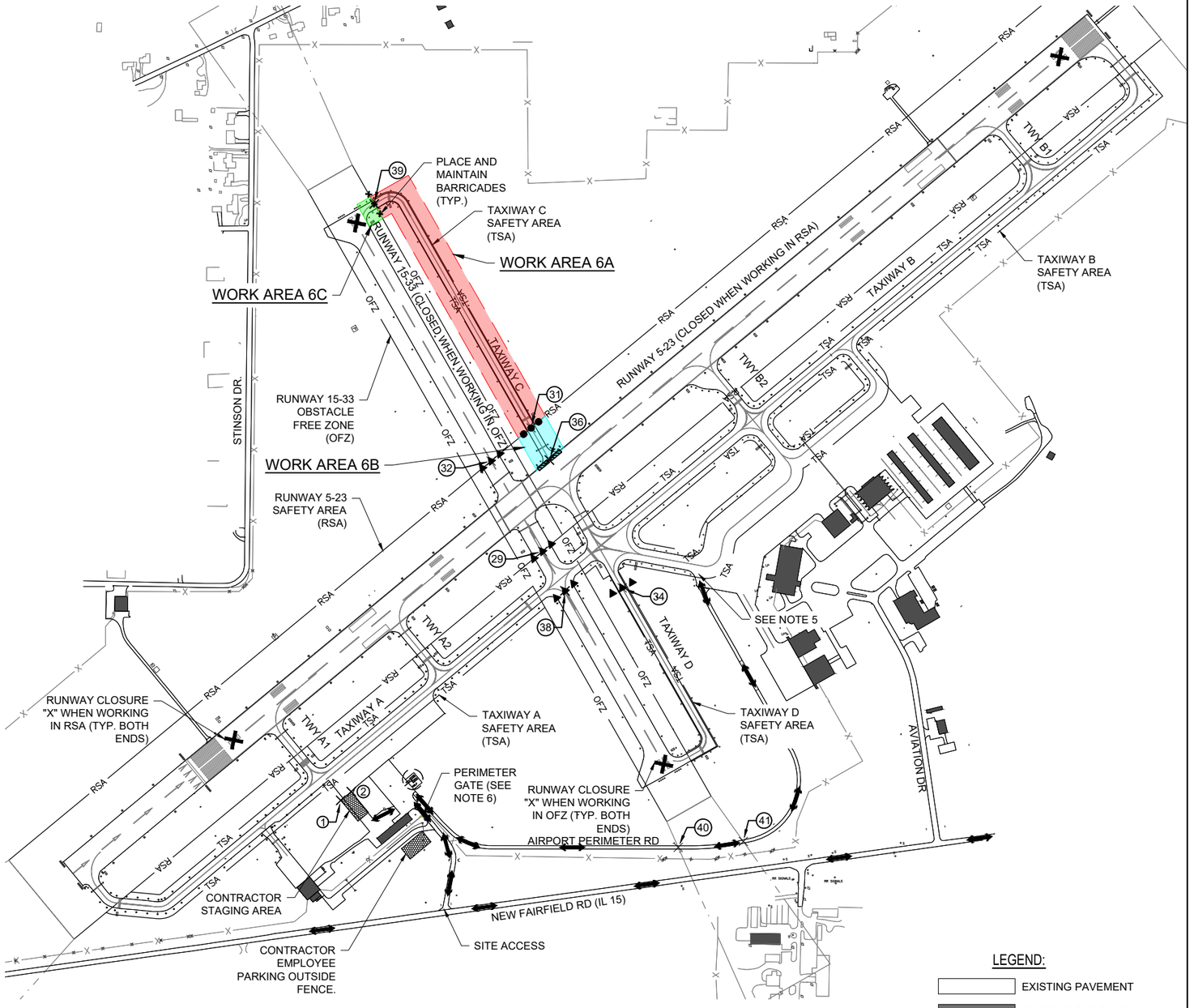
4. AREA 6A, 6B, AND 6C MAY BE CONSTRUCTED SIMULTANEOUSLY, HOWEVER, TIME RESTRICTIONS FOR EACH AREA SHALL STILL BE ENFORCED.

5. CONTRACTOR SHALL HAVE AIRPORT ESCORT FROM RAMP TO WORK AREA ACROSS THE RUNWAY.

6. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.

7. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.

8. ALL EQUIPMENT MUST BE LOWERED WHEN NOT IN USE OR IN TRANSIT AND MAY NOT BE LEFT WITHIN 125' OF THE RUNWAY CENTERLINE, EXTENDED.



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SHEET TITLE

SAFETY AND PHASING PLAN - PHASE 6

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WORK AREA CRITICAL POINTS					
POINT #	LATITUDE	LONGITUDE	ELEVATION	EQUIP. HEIGHT	EQUIP. ELEVATION
1	038° 19' 07.75"	-088° 51' 43.91"	465.00	25'	490.00
2	038° 19' 08.17"	-088° 51' 43.27"	465.00	25'	490.00
3	038° 19' 02.72"	-088° 51' 57.56"	466.00	25'	491.00
4	038° 19' 06.06"	-088° 51' 49.37"	464.00	25'	489.00
5	038° 19' 07.47"	-088° 51' 47.24"	464.00	25'	489.00
6	038° 19' 05.36"	-088° 51' 47.49"	464.00	25'	489.00
7	038° 19' 03.94"	-088° 51' 59.12"	468.00	25'	493.00
8	038° 19' 17.63"	-088° 51' 31.83"	468.00	25'	493.00
9	038° 19' 09.98"	-088° 51' 46.55"	467.00	25'	492.00
10	038° 19' 14.96"	-088° 51' 39.01"	466.00	25'	491.00
11	038° 19' 11.30"	-088° 51' 47.98"	468.00	25'	493.00
12	038° 19' 16.26"	-088° 51' 40.46"	470.00	25'	495.00
13	038° 19' 22.47"	-088° 51' 04.89"	466.00	25'	491.00
14	038° 19' 20.48"	-088° 51' 07.89"	468.00	25'	493.00
15	038° 19' 43.26"	-088° 50' 56.08"	465.00	25'	490.00
16	038° 19' 39.10"	-088° 51' 02.39"	468.00	25'	493.00
17	038° 19' 28.46"	-088° 51' 11.53"	464.00	25'	489.00
18	038° 19' 26.83"	-088° 51' 17.87"	470.00	25'	495.00
19	038° 19' 44.28"	-088° 50' 57.96"	466.00	25'	491.00
20	038° 19' 40.40"	-088° 51' 03.84"	470.00	25'	495.00
21	038° 19' 29.39"	-088° 51' 14.00"	469.00	25'	494.00
22	038° 19' 27.45"	-088° 51' 20.06"	464.00	25'	489.00
23	038° 19' 21.60"	-088° 51' 25.81"	468.00	25'	493.00
24	038° 19' 24.75"	-088° 51' 17.19"	465.00	25'	490.00
25	038° 19' 28.61"	-088° 51' 21.73"	469.00	25'	494.00
26	038° 19' 25.63"	-088° 51' 19.70"	467.00	25'	492.00
27	038° 19' 19.35"	-088° 51' 23.17"	465.00	25'	490.00
28	038° 19' 21.44"	-088° 51' 29.18"	465.00	25'	490.00
29	038° 19' 19.83"	-088° 51' 31.63"	468.00	25'	493.00
30	038° 19' 14.29"	-088° 51' 36.90"	469.00	25'	494.00
31	038° 19' 25.78"	-088° 51' 32.37"	467.00	25'	492.00
32	038° 19' 24.17"	-088° 51' 34.81"	469.00	25'	494.00
33	038° 19' 22.95"	-088° 51' 30.29"	468.00	25'	493.00
34	038° 19' 18.08"	-088° 51' 26.73"	464.00	25'	489.00
35	038° 19' 19.24"	-088° 51' 29.39"	468.00	25'	493.00
36	038° 19' 24.24"	-088° 51' 31.23"	468.00	25'	493.00
37	038° 19' 09.94"	-088° 51' 22.58"	458.00	25'	483.00
38	038° 19' 17.92"	-088° 51' 30.24"	464.00	25'	489.00
39	038° 19' 36.55"	-088° 51' 42.06"	479.00	25'	504.00
40	038° 19' 05.57"	-088° 51' 23.20"	454.00	25'	479.00

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SHEET TITLE

CRITICAL POINT TABLES

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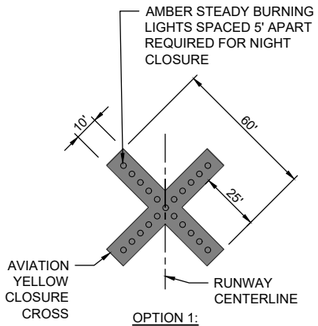


OPTION 1:
HORIZONTAL RUNWAY CLOSURE MARKER

OPTION 2:
L-893 LIGHTED RUNWAY CLOSURE MARKER

RUNWAY CLOSURE CROSS MARKER DETAIL

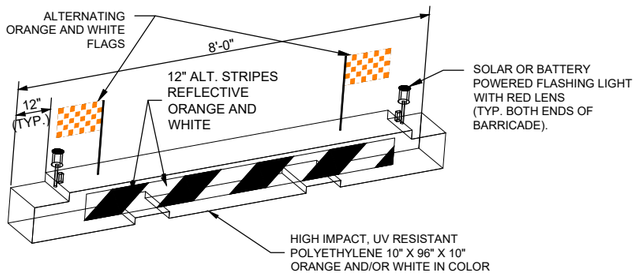
NOT TO SCALE

CLOSURE CROSS NOTES

1. 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.
2. 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.
3. THE CONTRACTOR SHALL MAKE FREQUENT INSPECTION OF THE LIGHTED CROSSES AND MAKE PROMPT REPAIRS AS NECESSARY.
4. THE CONTRACTOR SHALL BE ON-CALL FOR 24-HOUR EMERGENCY MAINTENANCE WHEN LIGHTED CROSSES ARE BEING USED.
5. LIGHTED MARKERS SHALL BE SECURED FROM WIND EFFECTS BY THE CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER.
6. COST FOR PROVIDING, PLACING, OPERATING, MAINTAINING, RELOCATING AND REMOVING CLOSURE CROSSES 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.

BARRICADE NOTES

1. 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.
2. BARRICADES SHALL BE "LOW-PROFILE" WITH A MAXIMUM HEIGHT OF 18" ABOVE GROUND, EXCLUSIVE OF ASSOCIATED WARNING LIGHTS AND FLAGS.
3. 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.
4. 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.
5. 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.
6. BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
7. 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.
8. COST FOR PROVIDING, PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE INCLUDED IN THE COST OF THE TRAFFIC MAINTENANCE.

GENERAL SAFETY NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRE-CONSTRUCTION CONFERENCE.
6. ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5D, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
7. 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.
8. CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2G, "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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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 SWEPT, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
14. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND RESIDENT ENGINEER/TECHNICIAN. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS. STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
15. ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
16. CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE RESIDENT ENGINEER/TECHNICIAN.
17. CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
18. THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
19. CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
20. CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN.
21. CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
22. THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
23. 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.
24. UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.

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MVN
MT. VERNON OUTLAND AIRPORT

100 AVIATION DRIVE
MT VERNON, IL 62864

STATE OF ILLINOIS
BARRY S. STOLZ
062-057281
LICENSED PROFESSIONAL ENGINEER

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

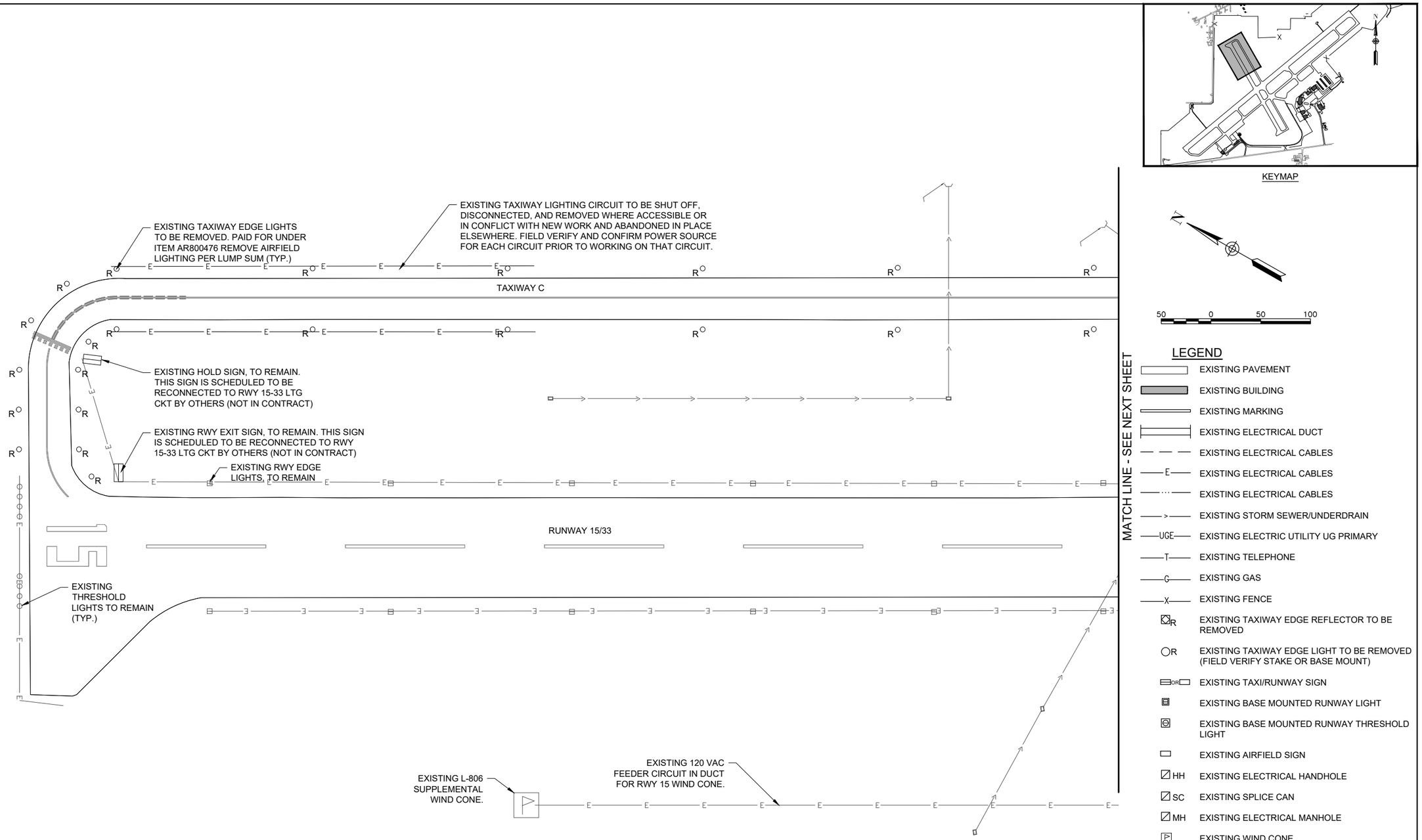
IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: G-005-SFY.DWG
DESIGN BY: KNL 3/27/2022
DRAWN BY: CWS 3/28/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

SAFETY AND PHASING NOTES AND DETAILS



KEYMAP

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LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
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SHEET TITLE

EXISTING ELECTRICAL PLAN -TAXIWAY C SHEET 1

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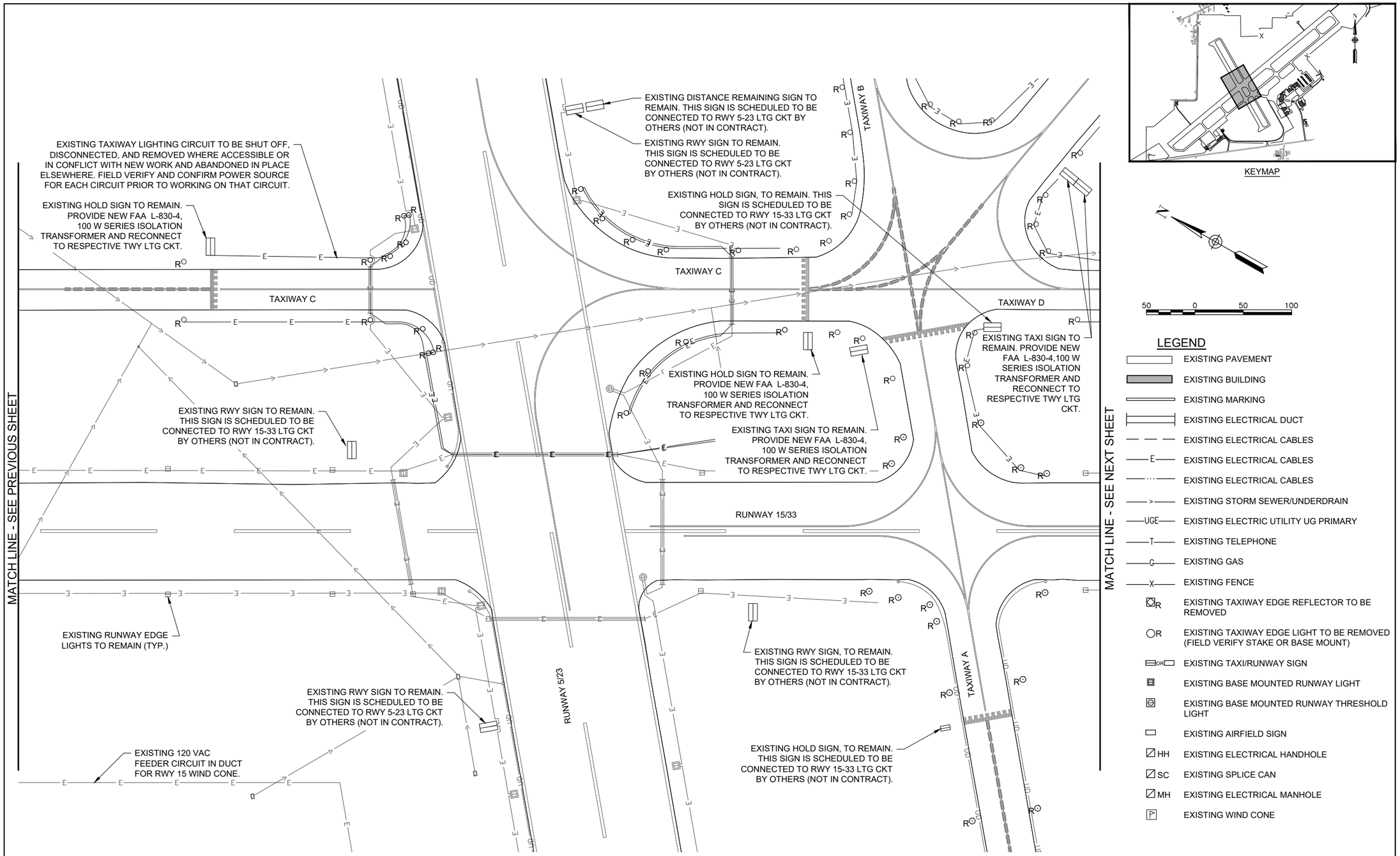

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EXISTING ELECTRICAL PLAN - TAXIWAY C SHEET 2

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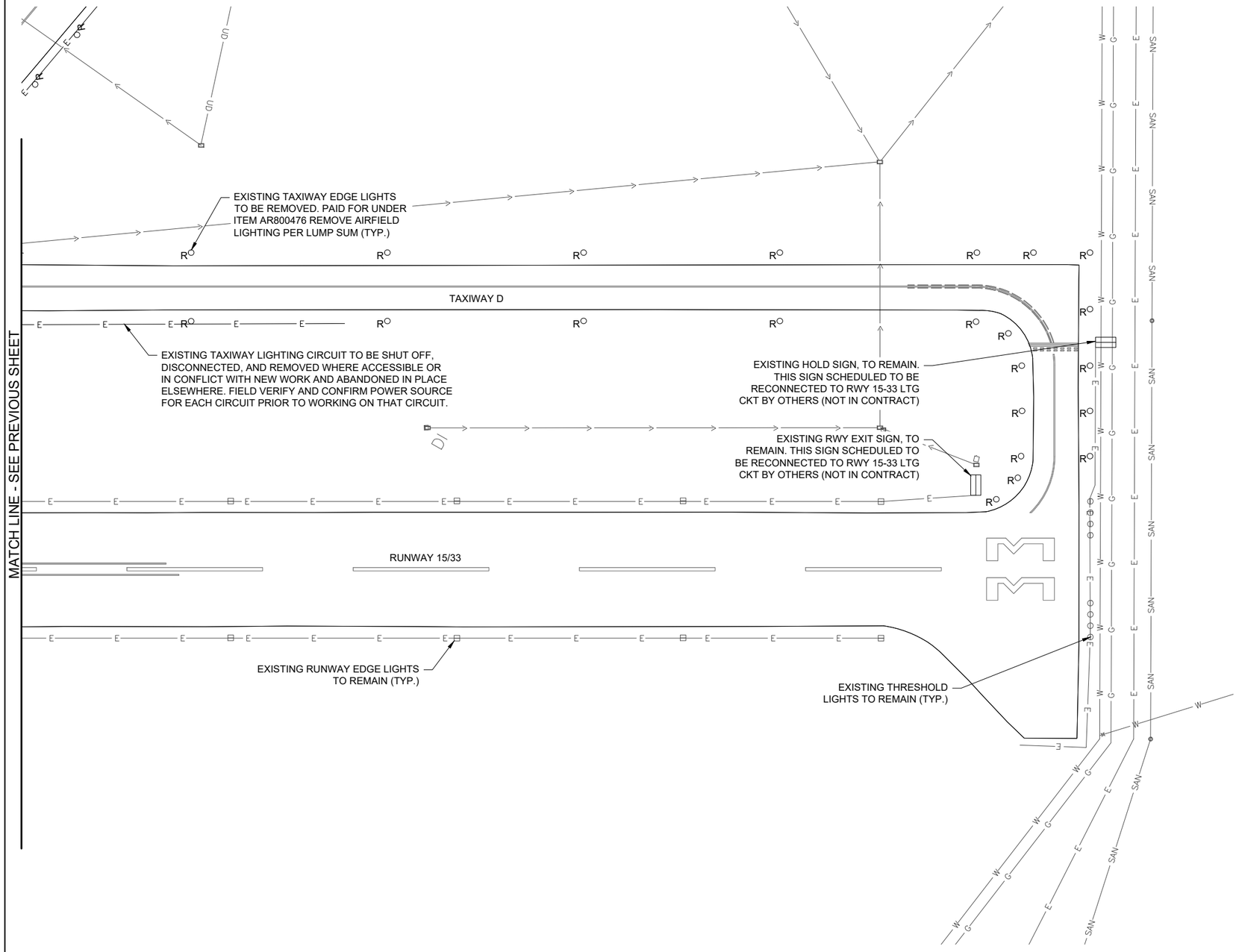

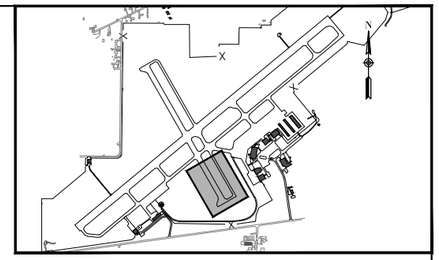

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SHEET TITLE

EXISTING ELECTRICAL PLAN - TAXIWAY D SHEET 1

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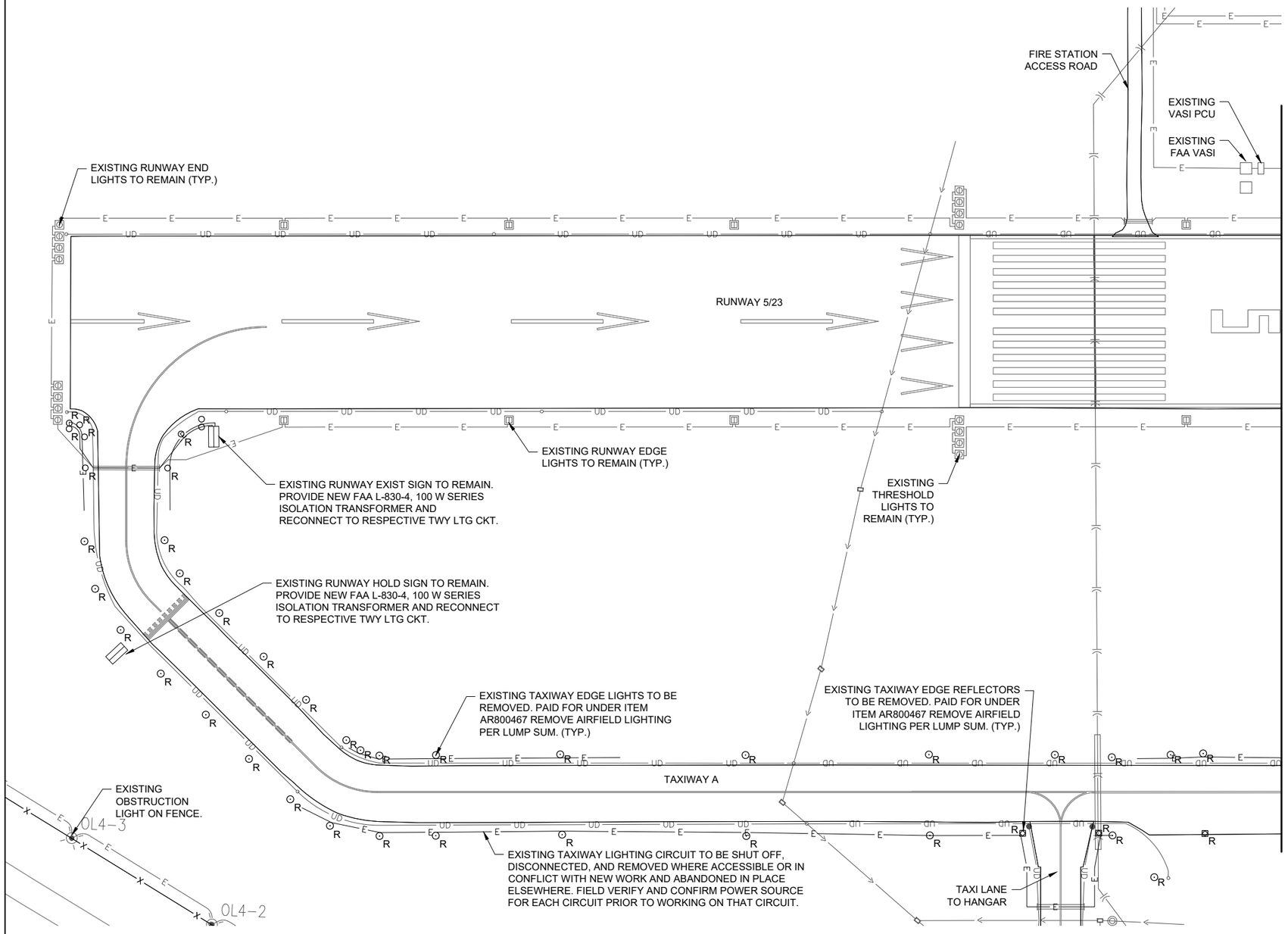

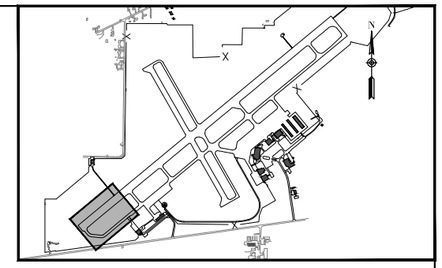

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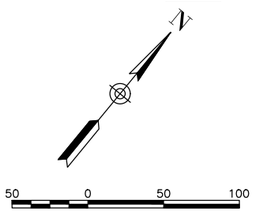

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EXISTING ELECTRICAL PLAN -TAXIWAY A SHEET 1

JUN 28, 2022 3:45 PM STOLZ01547
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EXISTING L-806 SUPPLEMENTAL WIND CONE, TO REMAIN.

EXISTING 120 VAC FEEDER CKT IN DUCT TO RWY 15 SUPPLEMENTAL WIND CONE.

EXISTING 120 VAC FEEDER CKT IN DUCT TO RWY 5 SUPPLEMENTAL WIND CONE.

EXISTING FEEDER CABLE TO VASI

EXISTING FAA VASI

EXISTING RUNWAY EDGE LIGHTS TO REMAIN (TYP.)

RUNWAY 5/23

EXISTING RUNWAY EXIT SIGN TO REMAIN. PROVIDE NEW FAA L-830-4, 100 W SERIES ISOLATION TRANSFORMER AND RECONNECT TO RESPECTIVE TWY LTG CKT.

EXISTING DISTANCE REMAINING SIGN, TO REMAIN. THIS SIGN IS SCHEDULED TO BE RECONNECTED TO RWY 5-23 LTG CKT BY OTHERS (NOT IN CONTRACT).

EXISTING RUNWAY EXIT SIGN TO REMAIN. PROVIDE NEW FAA L-830-4, 100 W SERIES ISOLATION TRANSFORMER AND RECONNECT TO RESPECTIVE TWY LTG CKT

EXISTING RUNWAY HOLD SIGN TO REMAIN. PROVIDE NEW FAA L-830-4, 100 W SERIES ISOLATION TRANSFORMER AND RECONNECT TO RESPECTIVE TWY LTG CKT.

EXISTING TAXI SIGN TO REMAIN. PROVIDE NEW FAA L-830-4, 100 W SERIES ISOLATION TRANSFORMER AND RECONNECT TO RESPECTIVE TWY LTG CKT.

EXISTING TAXI SIGN TO REMAIN. PROVIDE NEW FAA L-830-4, 100 W SERIES ISOLATION TRANSFORMER AND RECONNECT TO RESPECTIVE TWY LTG CKT.

EXISTING RUNWAY HOLD SIGN TO REMAIN. PROVIDE NEW FAA L-830-4, 100 W SERIES ISOLATION TRANSFORMER AND RECONNECT TO RESPECTIVE TWY LTG CKT.

EXISTING TAXIWAY EDGE LIGHTS TO BE REMOVED. PAID FOR UNDER ITEM AR800467 REMOVE AIRFIELD LIGHTING PER LUMP SUM. (TYP.)

TAXIWAY A1

TAXIWAY A2

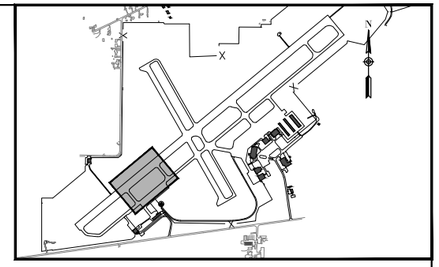
TAXIWAY A

EXISTING TAXIWAY EDGE REFLECTORS TO BE REMOVED. PAID FOR UNDER ITEM AR800467 REMOVE AIRFIELD LIGHTING PER LUMP SUM. (TYP.)

EXISTING TAXIWAY LIGHTING CIRCUIT TO BE SHUT OFF, DISCONNECTED, AND REMOVED WHERE ACCESSIBLE OR IN CONFLICT WITH NEW WORK AND ABANDONED IN PLACE ELSEWHERE. FIELD VERIFY AND CONFIRM POWER SOURCE FOR EACH CIRCUIT PRIOR TO WORKING ON THAT CIRCUIT.

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



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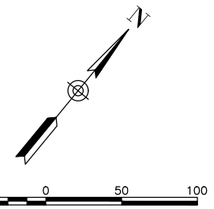

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SHEET TITLE

EXISTING ELECTRICAL PLAN -TAXIWAY A SHEET 2

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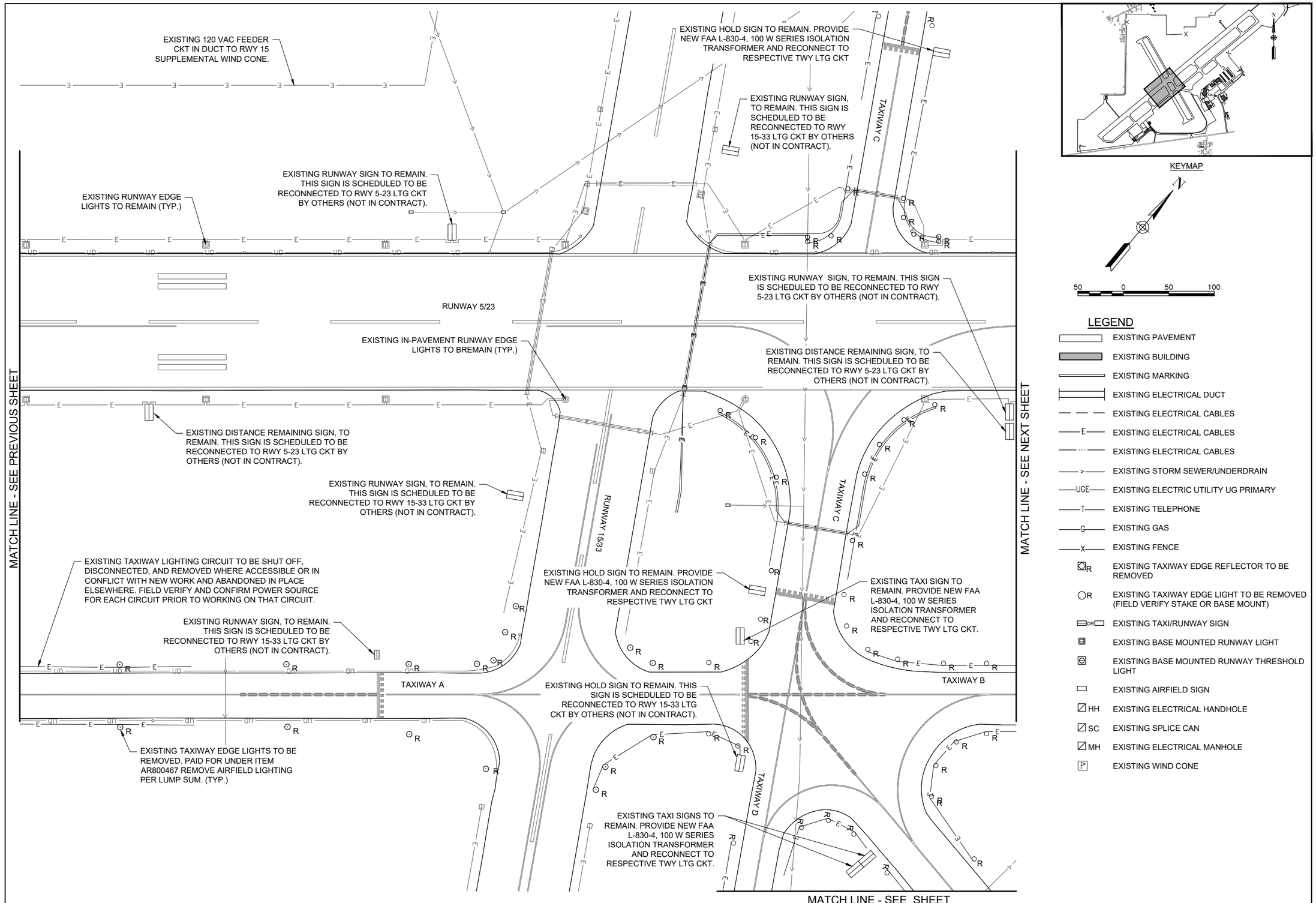

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DESIGN BY: KNL 3/27/2022
DRAWN BY: CWS 3/29/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

EXISTING ELECTRICAL PLAN -TAXIWAY A & B SHEET

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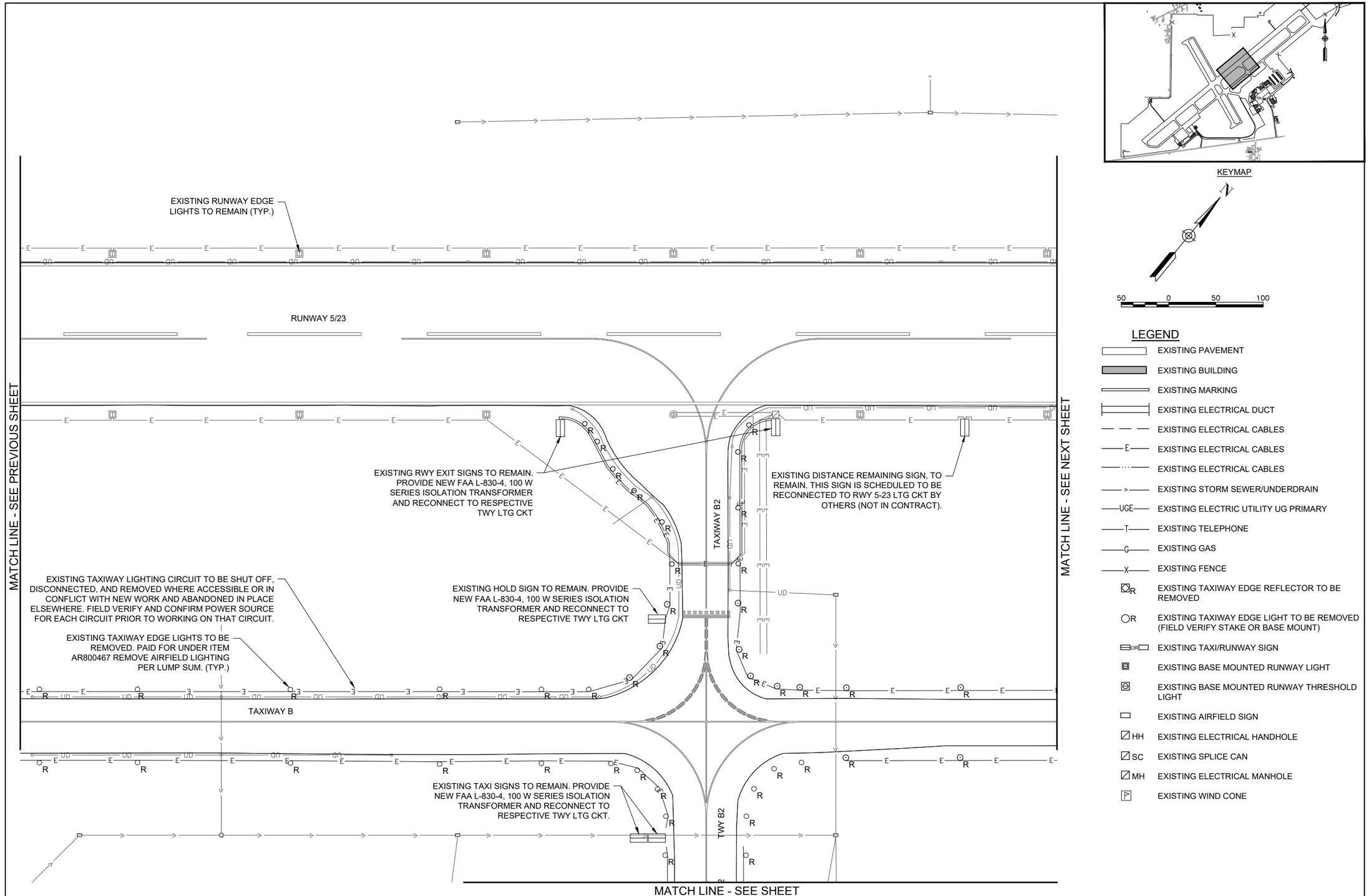

KEYMAP

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- E — EXISTING ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER/UNDERDRAIN
- UGE — EXISTING ELECTRIC UTILITY UG PRIMARY
- T — EXISTING TELEPHONE
- G — EXISTING GAS
- X — EXISTING FENCE
- R — EXISTING TAXIWAY EDGE REFLECTOR TO BE REMOVED
- R — EXISTING TAXIWAY EDGE LIGHT TO BE REMOVED (FIELD VERIFY STAKE OR BASE MOUNT)
- OR — EXISTING TAXI/RUNWAY SIGN
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING AIRFIELD SIGN
- HH — EXISTING ELECTRICAL HANDHOLE
- SC — EXISTING SPLICE CAN
- MH — EXISTING ELECTRICAL MANHOLE
- EXISTING WIND CONE

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KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
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EXISTING ELECTRICAL PLAN - TAXIWAY B SHEET 1

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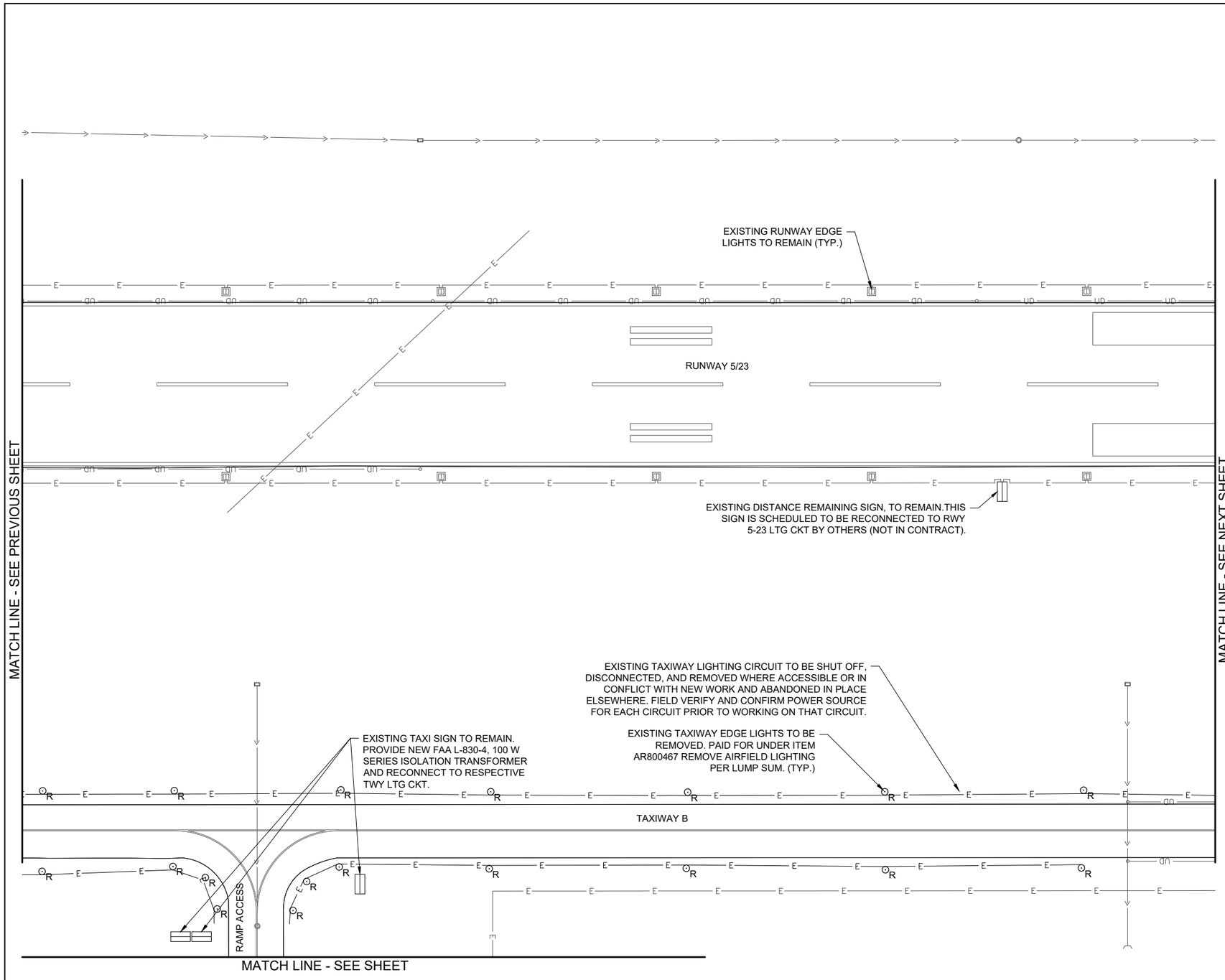

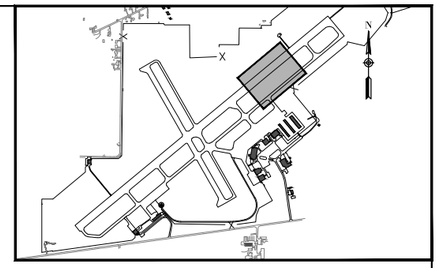

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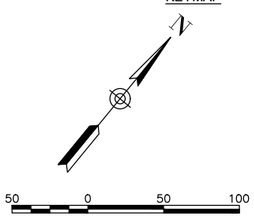

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EXISTING ELECTRICAL PLAN - TAXIWAY B SHEET 2

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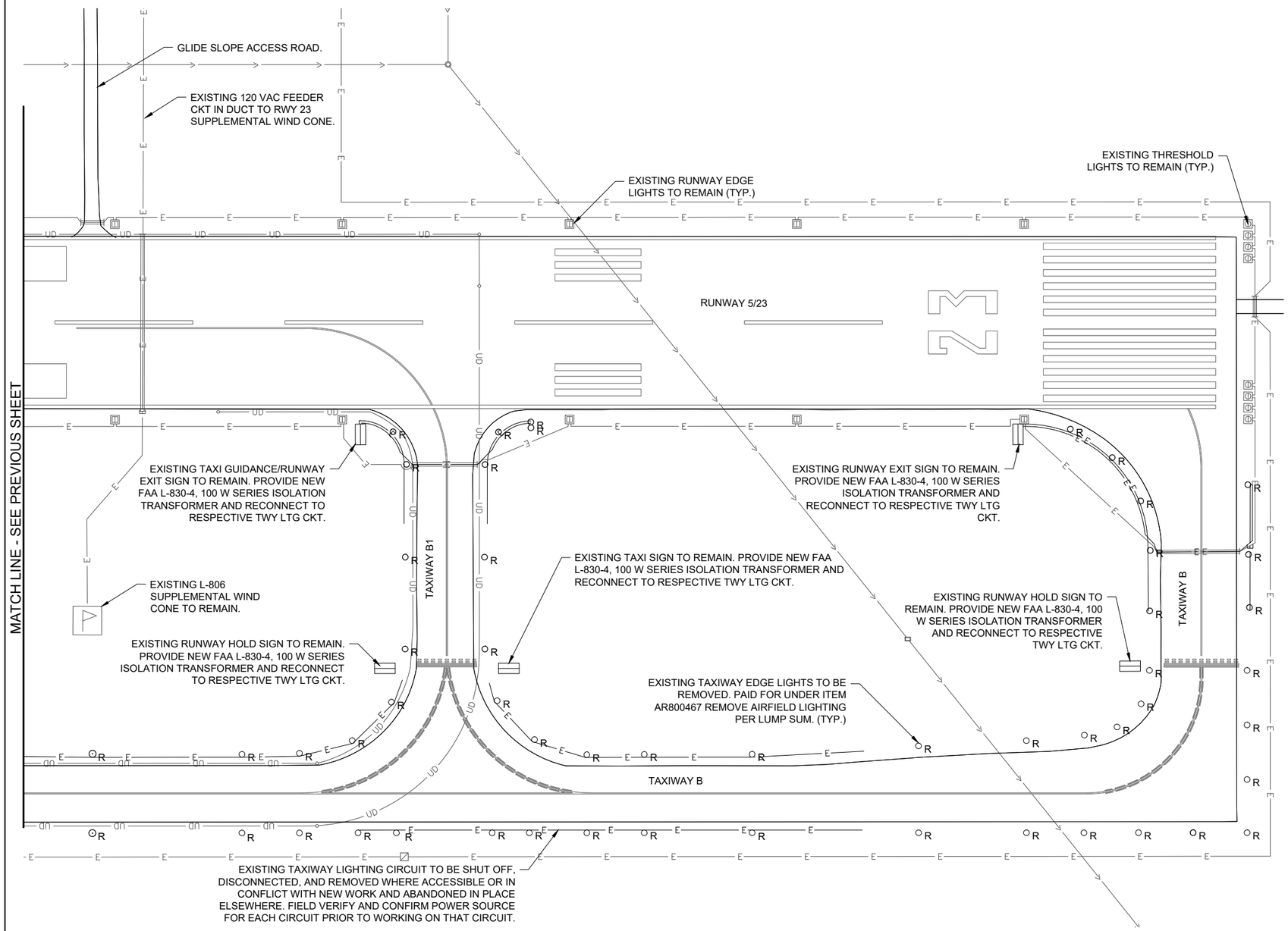

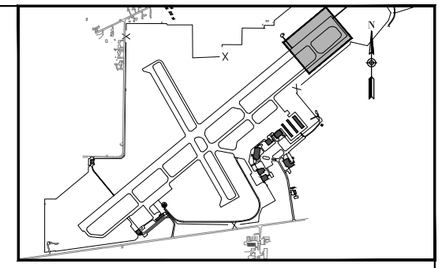

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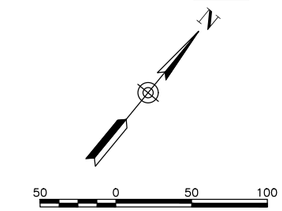

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EXISTING ELECTRICAL PLAN - TAXIWAY B SHEET 3

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MATCH LINE - SEE SHEET

EXISTING TAXIWAY LIGHTING CIRCUIT TO BE SHUT OFF, DISCONNECTED, AND REMOVED WHERE ACCESSIBLE OR IN CONFLICT WITH NEW WORK AND ABANDONED IN PLACE ELSEWHERE. FIELD VERIFY AND CONFIRM POWER SOURCE FOR EACH CIRCUIT PRIOR TO WORKING ON THAT CIRCUIT.

EXISTING TAXIWAY EDGE LIGHTS TO BE REMOVED. PAID FOR UNDER ITEM AR800467 REMOVE AIRFIELD LIGHTING PER LUMP SUM. (TYP.)

EXISTING HIGH VOLTAGE HANDHOLE.

EXISTING 8-WAY 4" DUCT BANK. EXISTING HOMERUN SERIES CIRCUIT CONDUCTORS FOR THE TAXIWAYS SHALL BE DISCONNECTED AT THE VAULT CUTOUTS AND REMOVED FROM THE VAULT TO THE EXISTING HIGH VOLTAGE HANDHOLE NORTH OF THE APRON AND EAST OF TWY B2.

EXISTING APRON

FBO HANGAR

EXISTING HANGAR

EXISTING HANGAR

EXISTING TERMINAL BUILDING

EXISTING AIRFIELD ELECTRICAL VAULT

EXISTING 8-WAY 4" DUCT BANK TO VAULT IN-FLOOR RACEWAY TRENCH SYSTEM.

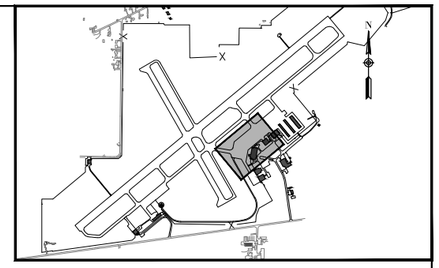
EXISTING PARKING LOT

SERVICE ROAD

TWY E

TWY B2

MATCH LINE - SEE SHEET



KEYMAP

50 0 50 100

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- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
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EXISTING ELECTRICAL PLAN - RAMP HOMERUN PLAN

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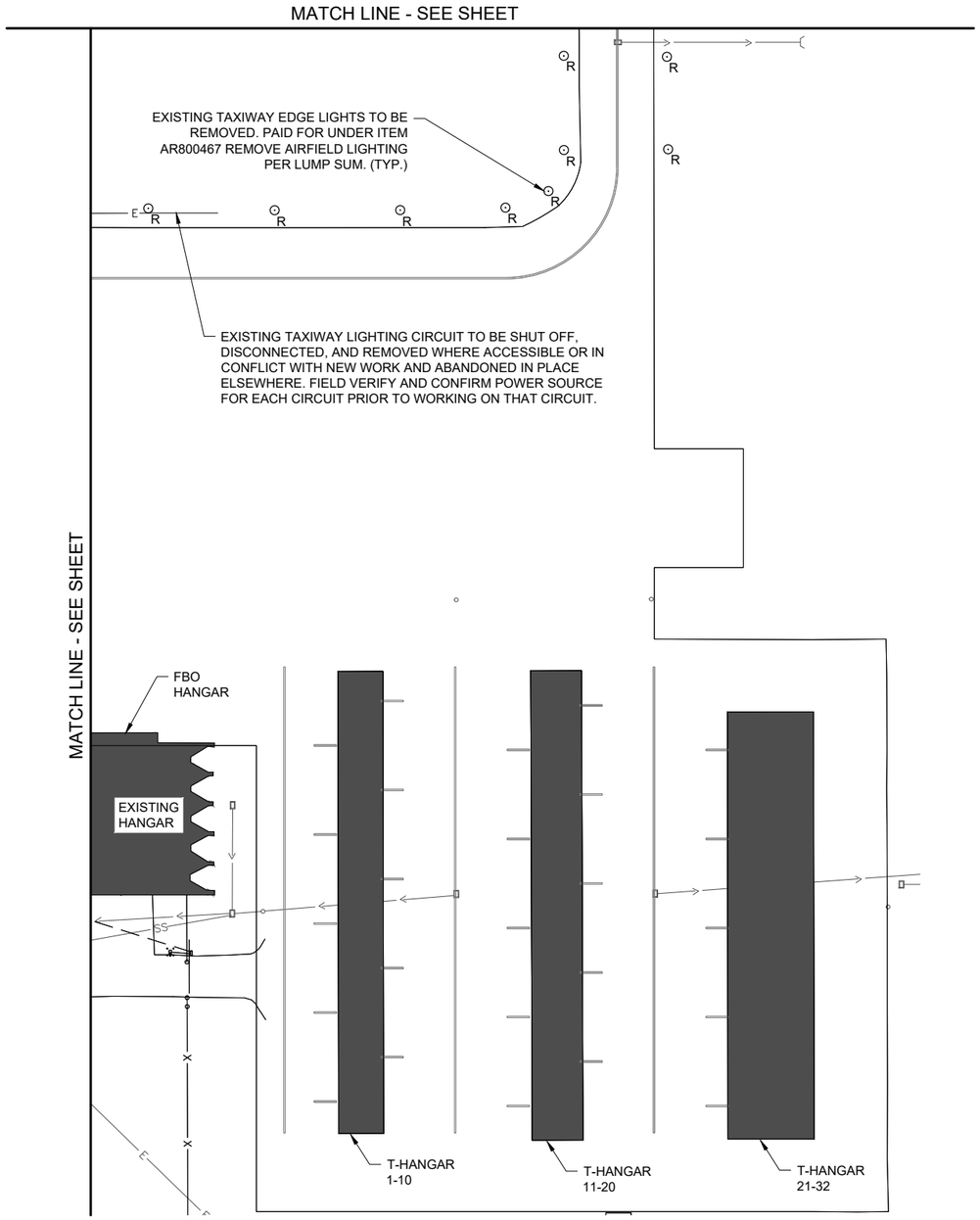

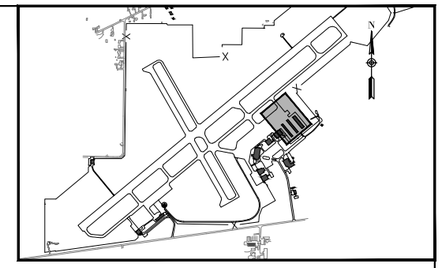

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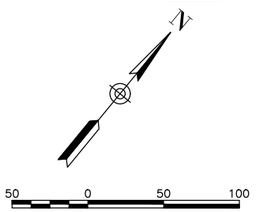

LEGEND

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- EXISTING ELECTRICAL DUCT
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SHEET TITLE

EXISTING ELECTRICAL PLAN - RAMP PLAN

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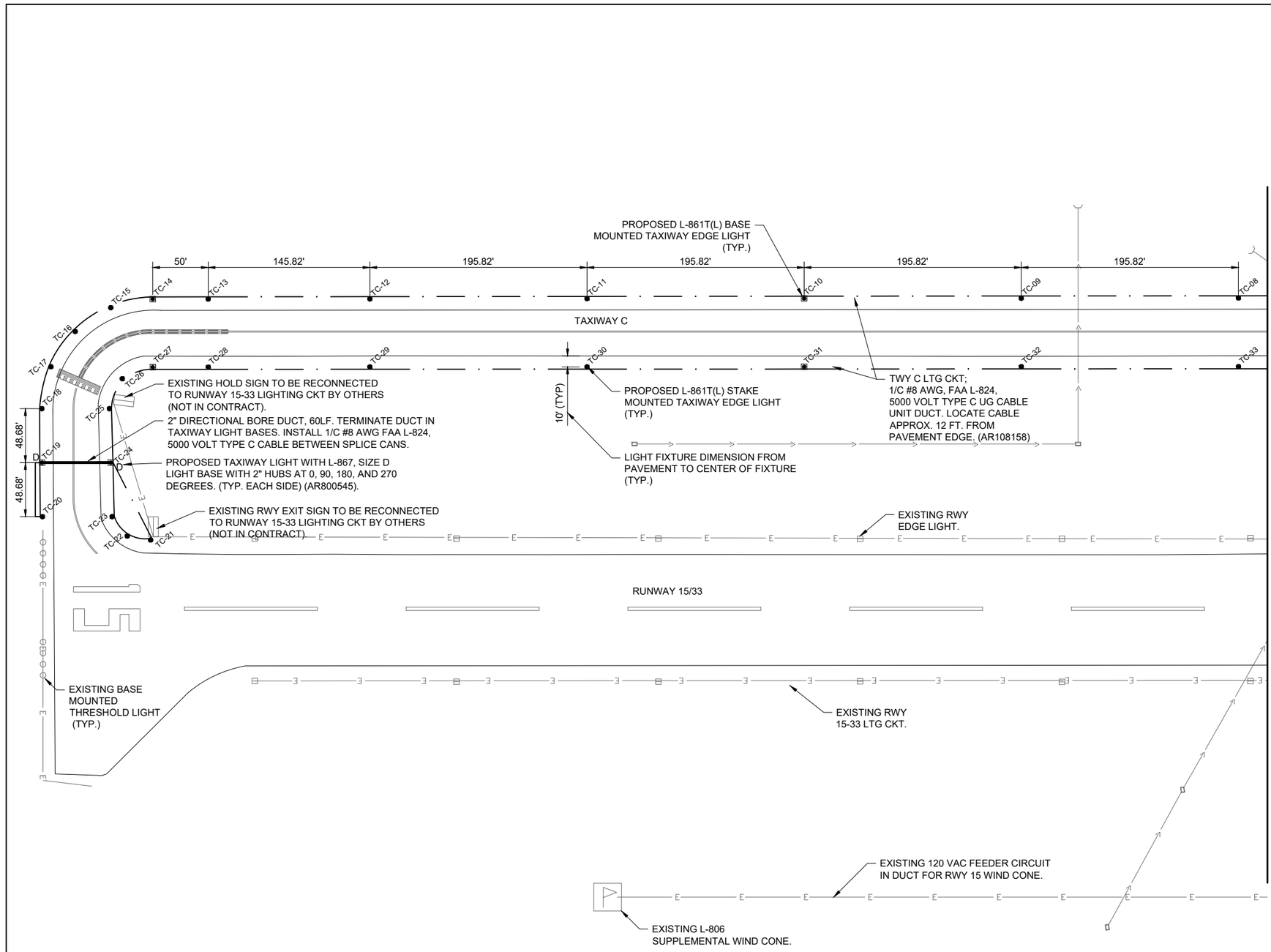

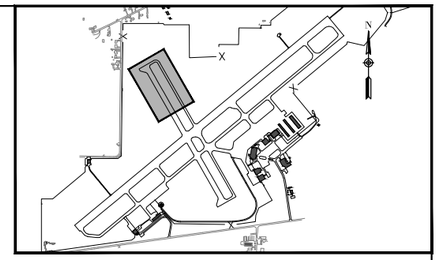

KEYMAP

MATCH LINE - SEE NEXT SHEET

50 0 50 100

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- E — EXISTING ELECTRICAL CABLES
- > — EXISTING STORM SEWER/UNDERDRAIN
- UGE — EXISTING ELECTRIC UTILITY UG PRIMARY
- T — EXISTING TELEPHONE
- G — EXISTING GAS
- X — EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 3/4" (MIN.) UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
- OR PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
- TWA — TAXIWAY LIGHTING CIRCUIT DESIGNATION. "TW" DENOTES TAXIWAY "A" DENOTES RESPECTIVE TAXIWAY CKT DESIGNATION.
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- D — PROPOSED BASE MOUNTED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING IN PAVEMENT RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT
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PROPOSED ELECTRICAL PLAN - TAXIWAY C SHEET 1

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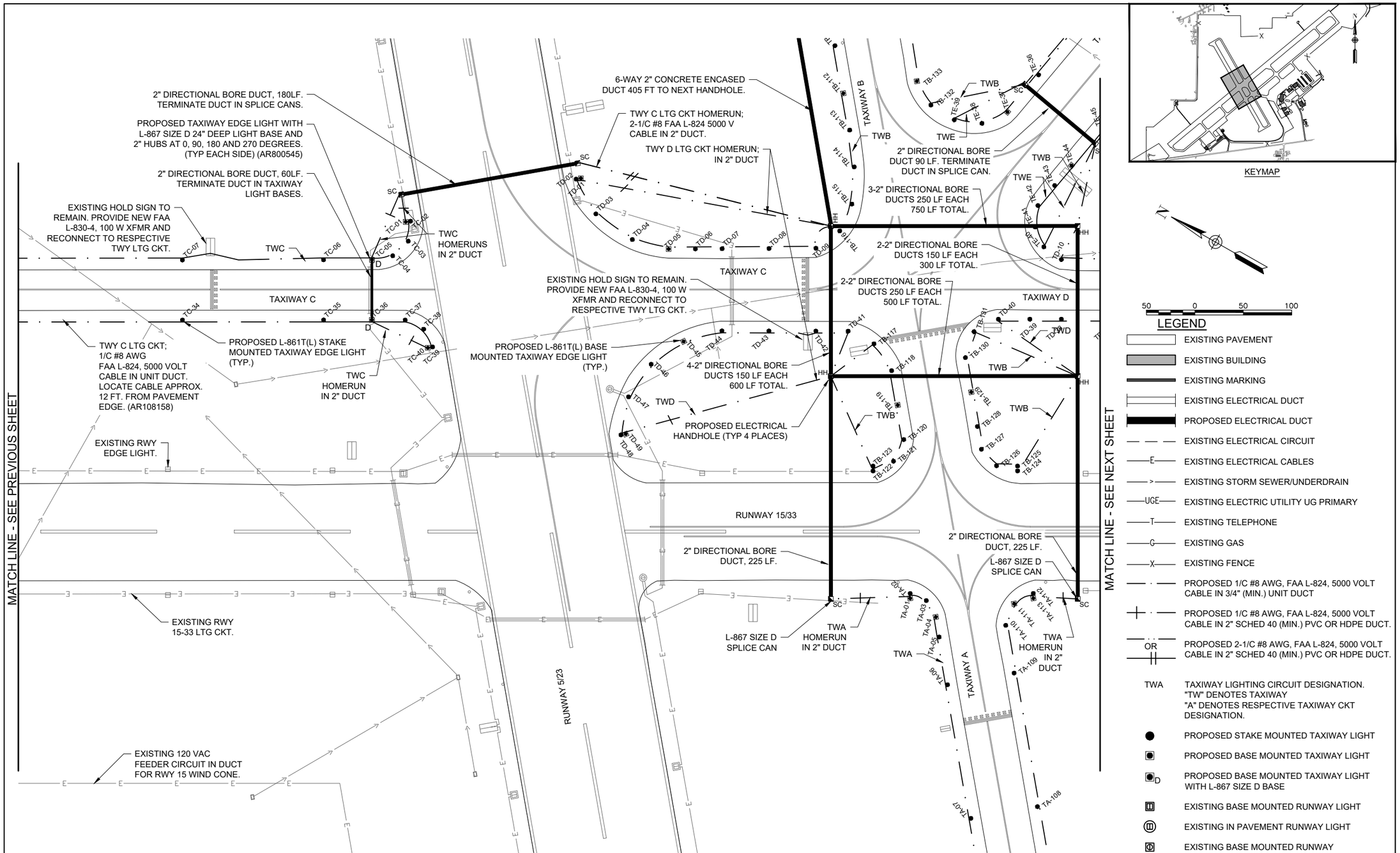

50 0 50 100

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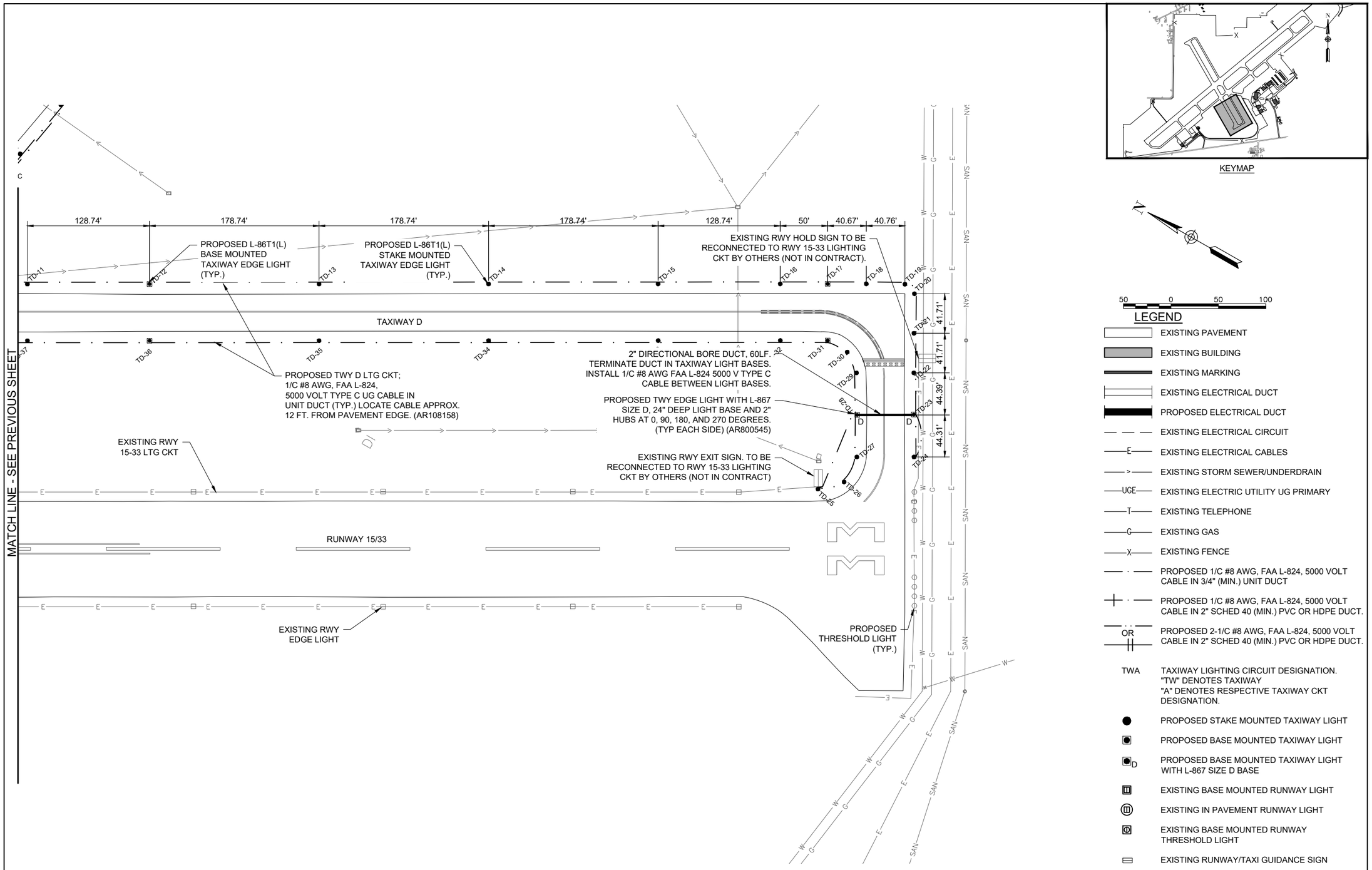

KEYMAP

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MT VERNON, IL 62864

LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
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REVIEWED BY: BSS 4/20/2022

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PROPOSED ELECTRICAL PLAN - TAXIWAY D SHEET 1

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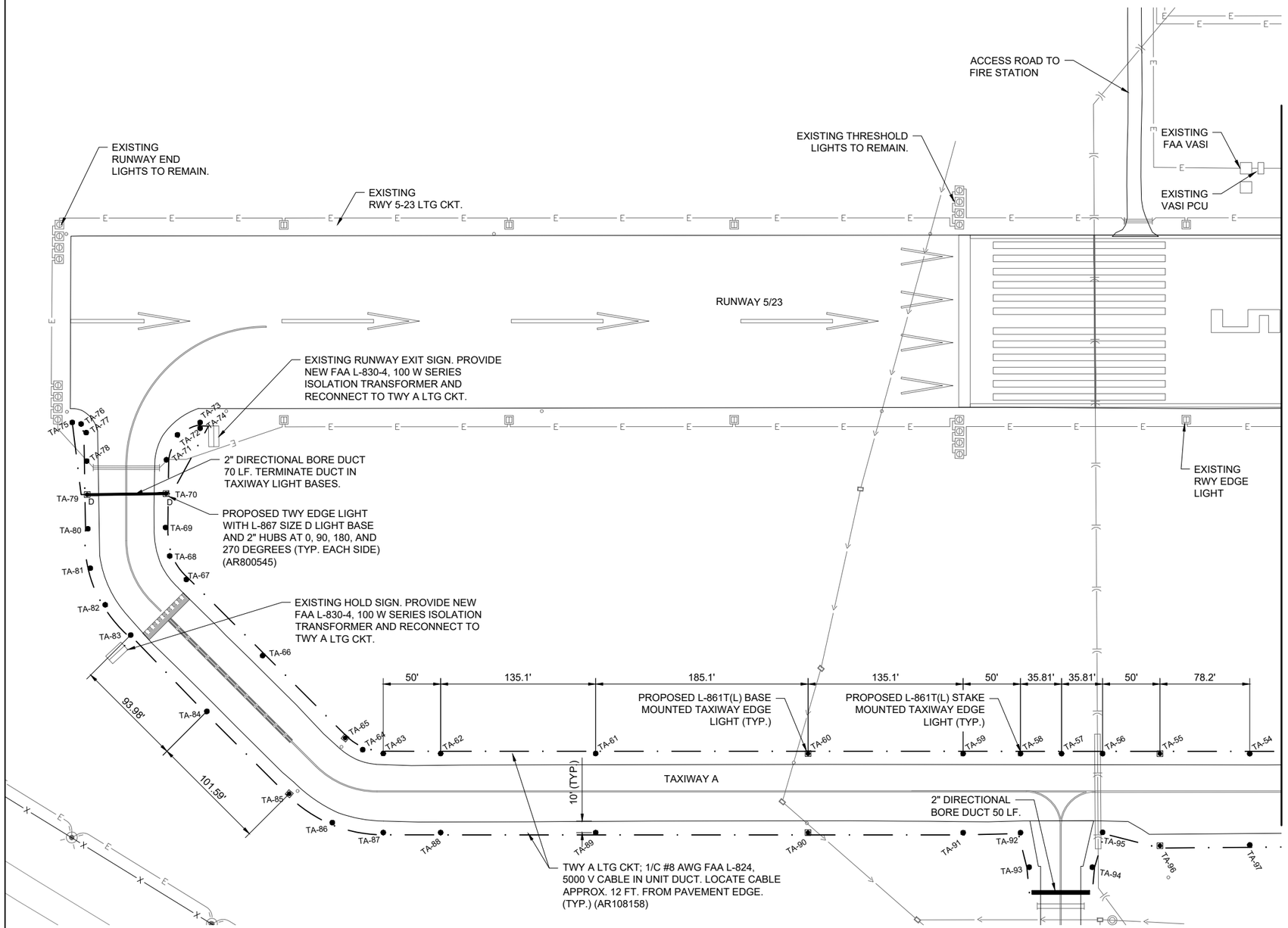

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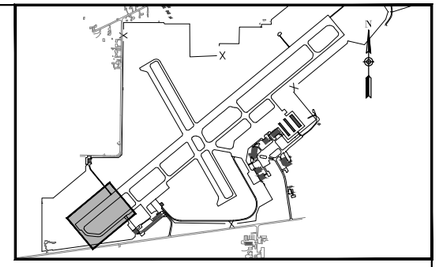

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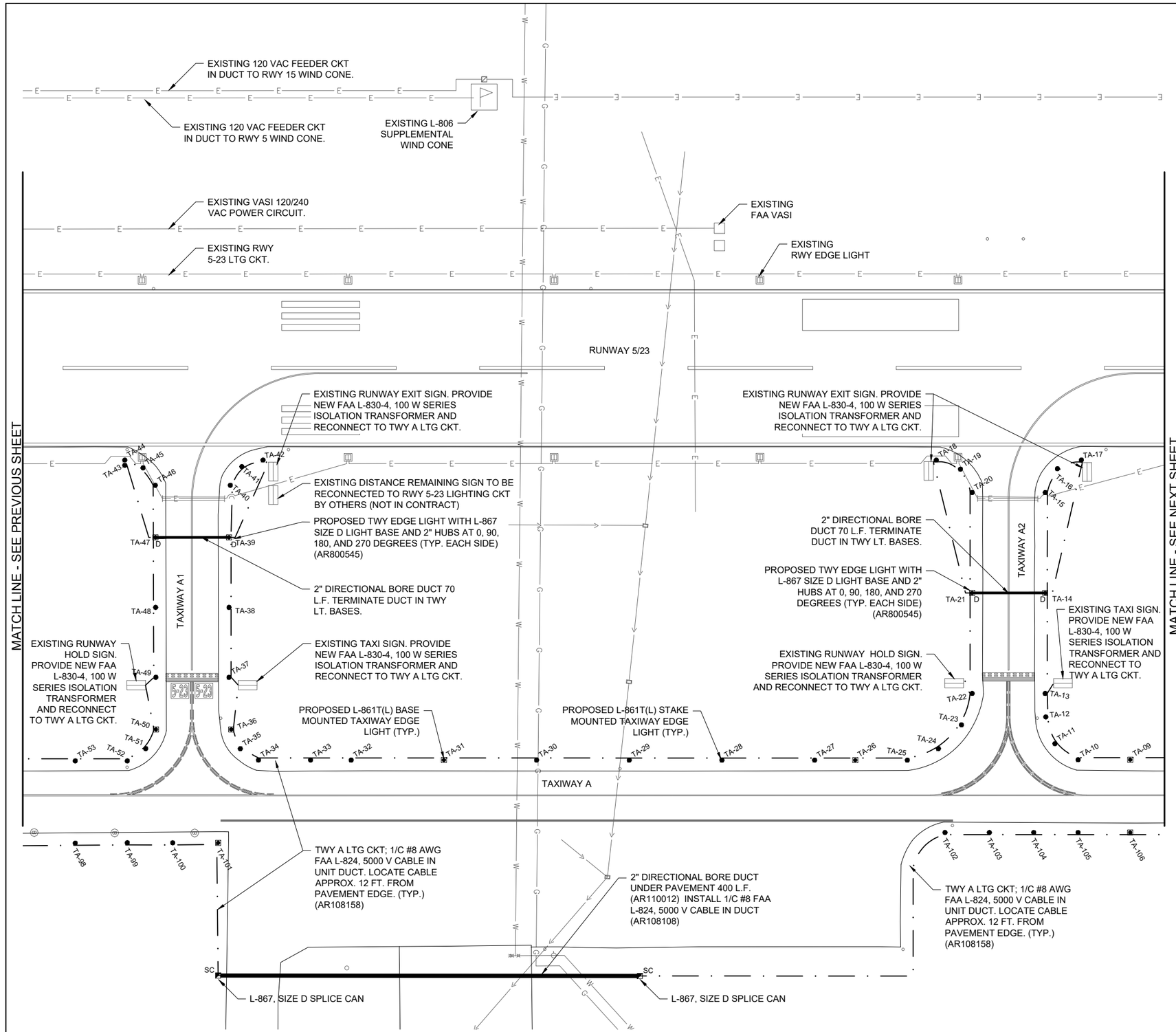

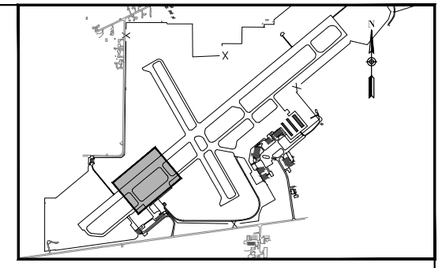

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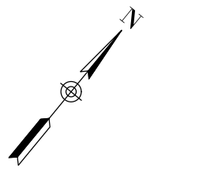

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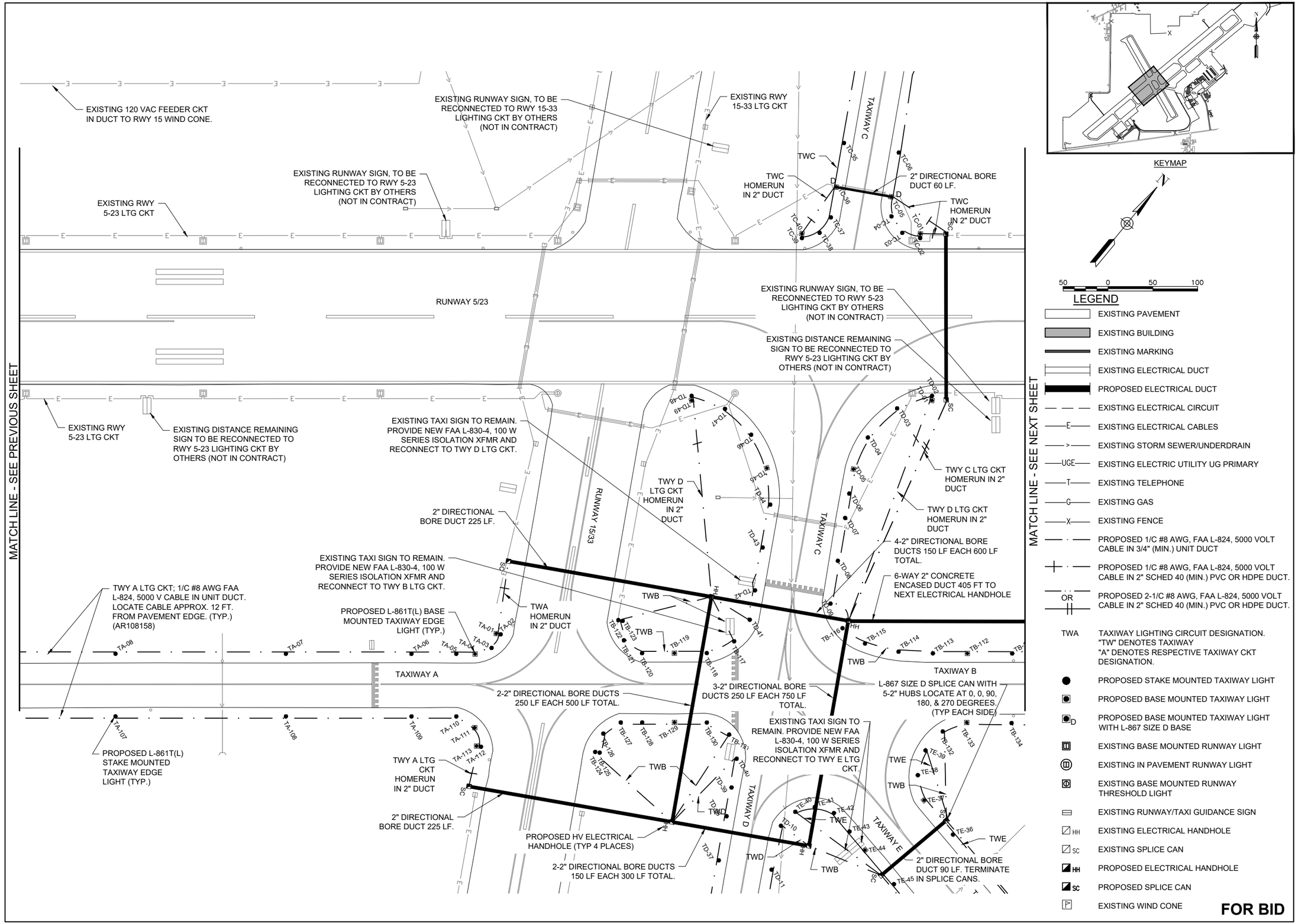

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PROPOSED ELECTRICAL PLAN - TAXIWAY A & B SHEET

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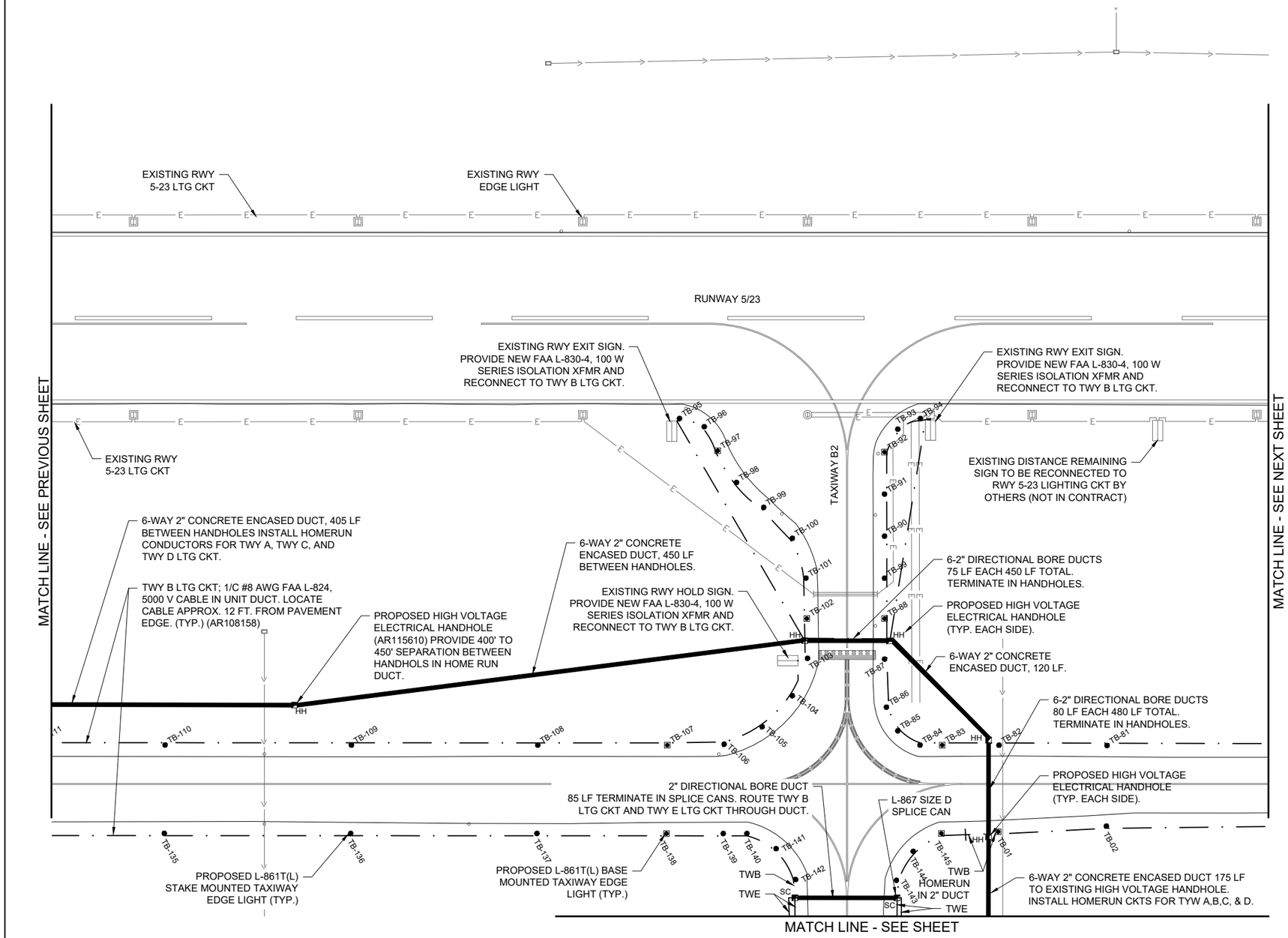

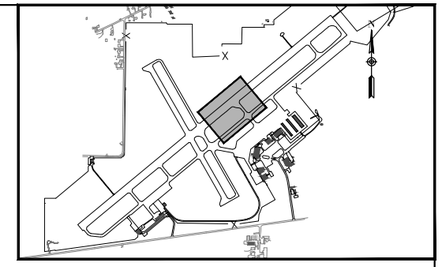

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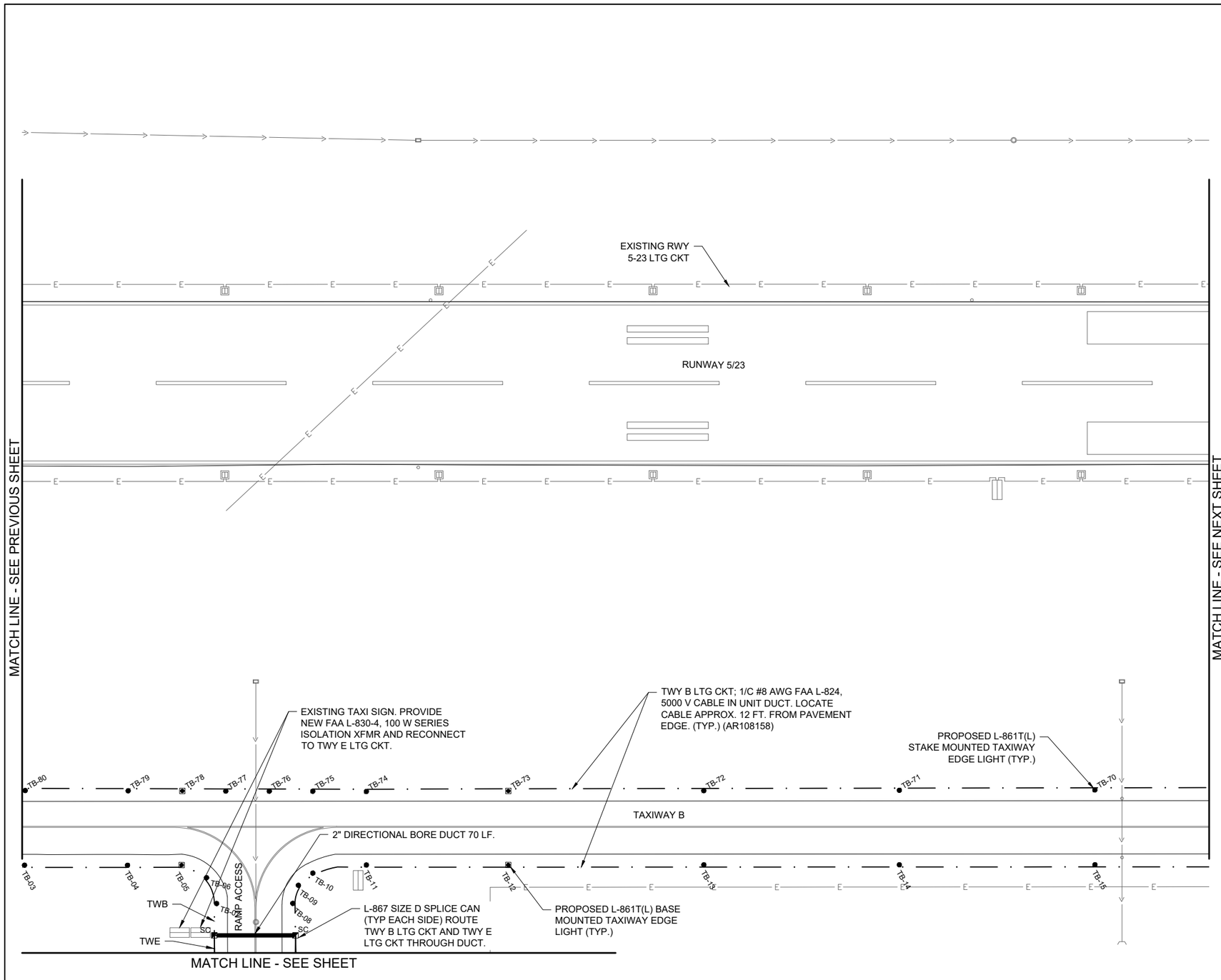

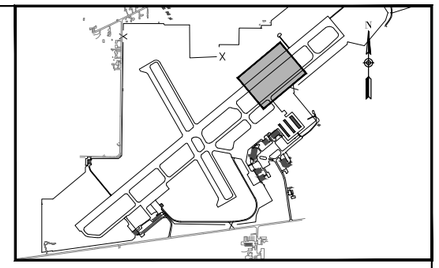

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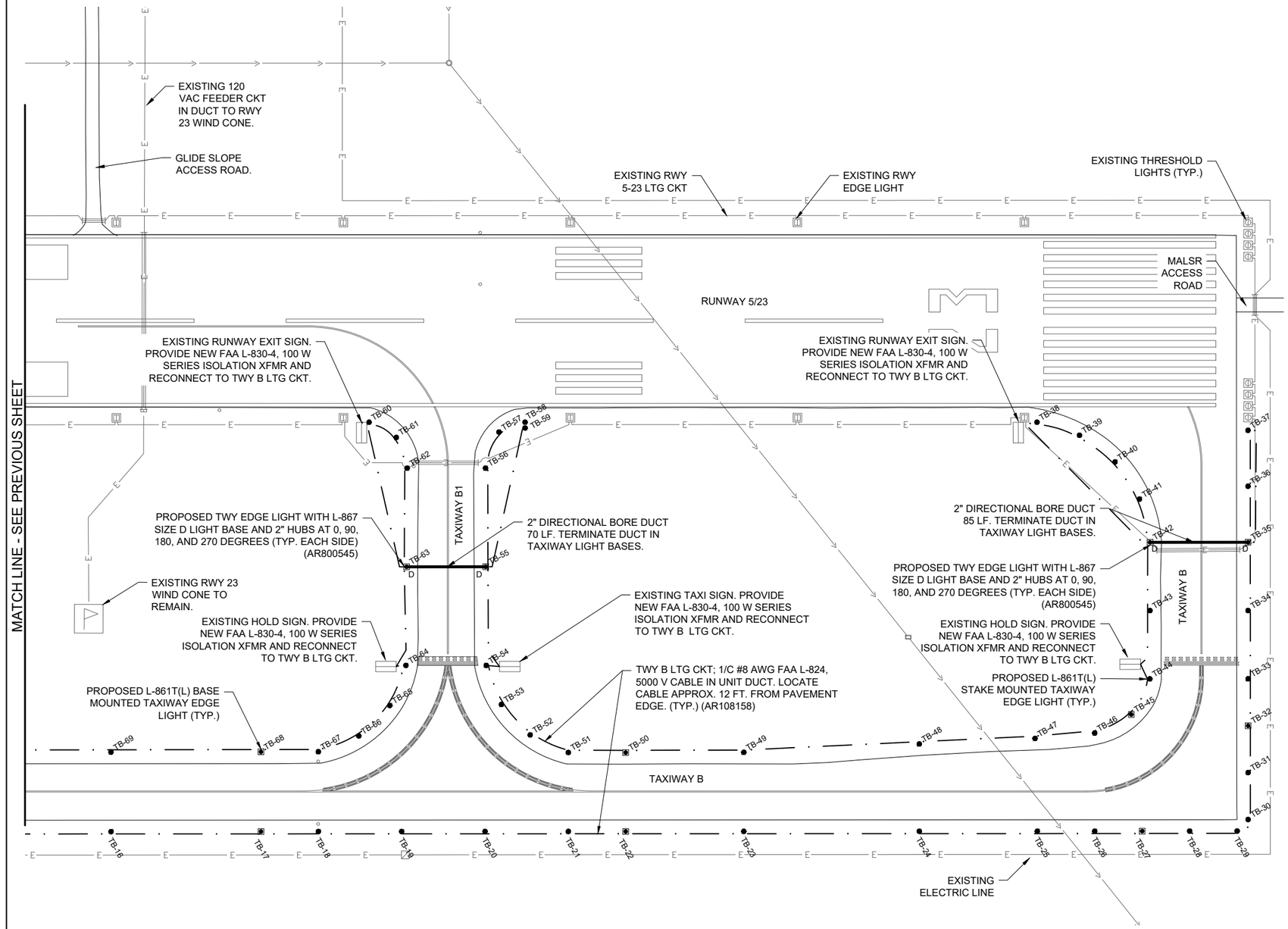

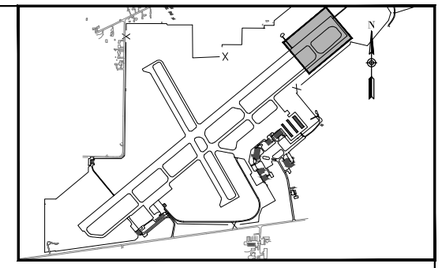

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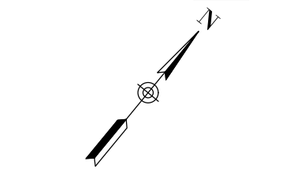

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REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: E-102-PLN.DWG
DESIGN BY: KNL 3/28/2022
DRAWN BY: CWS 3/30/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

PROPOSED ELECTRICAL PLAN - TAXIWAY B SHEET 3

JUN 28, 2022 3:49 PM STOLZ01547
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MATCH LINE - SEE SHEET

TWY B LTG CKT

TWY E LTG CKT

L-867 SIZE D SPLICE CAN WITH 5-2" HUBS LOCATED AT 0, 0, 90, 180, & 270 DEGREES. 5TH HUB TO ACCOMMODATE TWY B LTG CKT AND TWY E LTG CKT FOR DUCT UNDER TWY E. (TYP EACH SIDE.)

2" DIRECTIONAL BORE DUCT 90 LF. TERMINATE IN SPLICE CANS.

TWY E LTG CKT; 1/C #8 AWG FAA L-824, 5000 V CABLE IN UNIT DUCT (TYP.) (AR108158)

TAXIWAY E

TAXIWAY B2

TWE HOME RUN IN UNIT DUCT

6-WAY 2" CONCRETE ENCASED DUCT, 175 FT TO NEXT HANDHOLE.

TWY E HOMERUN IN 2" DUCT

EXISTING HIGH VOLTAGE HANDHOLE

PROPOSED L-861T(L) BASE MOUNTED TAXIWAY EDGE LIGHT (TYP.)

EXISTING 8-WAY 4" DUCT BANK. FURNISH AND INSTALL TAXIWAY LTG CKT HOMERUNS (A,B,C,D, & E) IN EXISTING SPARE DUCTS. INSTALL HOME RUN CONDUCTORS OF THE SAME CIRCUIT IN THE SAME DUCT. INSTALL TWY A & B CKTS IN SEPARATE DEDICATED DUCT. INSTALL TWY C & D IN SEPARATE DEDICATED DUCT. INSTALL TWY E CKT IN SEPARATE DEDICATED DUCT. IDENTIFY AND TAG EACH CKT AT POINTS OF ACCESS (HANDHOLES, WIREWAYS, JUNCTION STRUCTURES).

EXISTING APRON

TWY E LTG CKT; 1/C #8 AWG FAA L-824, 5000 V CABLE IN UNIT DUCT (TYP.) (AR108158)

PROPOSED L-861T(L) STAKE MOUNTED TAXIWAY EDGE LIGHT (TYP.)

MATCH LINE - SEE SHEET

FBO HANGAR

SERVICE ROAD

EXISTING TERMINAL BUILDING

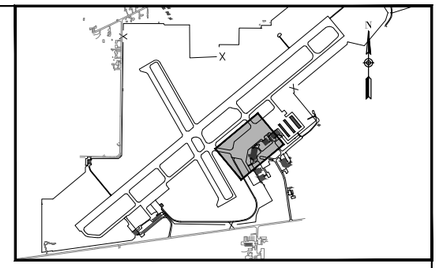
EXISTING HANGAR

EXISTING HANGAR

EXISTING AIRFIELD ELECTRICAL VAULT

EXISTING 8-WAY 4" DUCT TO CABLE TRENCH IN VAULT.

EXISTING PARKING LOT



KEYMAP

50 0 50 100

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- E — EXISTING ELECTRICAL CABLES
- > — EXISTING STORM SEWER/UNDERDRAIN
- UGE — EXISTING ELECTRIC UTILITY UG PRIMARY
- T — EXISTING TELEPHONE
- G — EXISTING GAS
- X — EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 3/4" (MIN.) UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
- OR PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
- TWA TAXIWAY LIGHTING CIRCUIT DESIGNATION. "TW" DENOTES TAXIWAY "A" DENOTES RESPECTIVE TAXIWAY CKT DESIGNATION.
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- D PROPOSED BASE MOUNTED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING IN PAVEMENT RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- HH EXISTING ELECTRICAL HANDHOLE
- SC EXISTING SPLICE CAN
- HH PROPOSED ELECTRICAL HANDHOLE
- SC PROPOSED SPLICE CAN
- EXISTING WIND CONE

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MVN
MT. VERNON OUTLAND AIRPORT

100 AVIATION DRIVE
MT VERNON, IL 62864

LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
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SHEET TITLE

PROPOSED ELECTRICAL PLAN - RAMP HOMERUN PLAN

JUN 28, 2022 3:50 PM STOLZ01547
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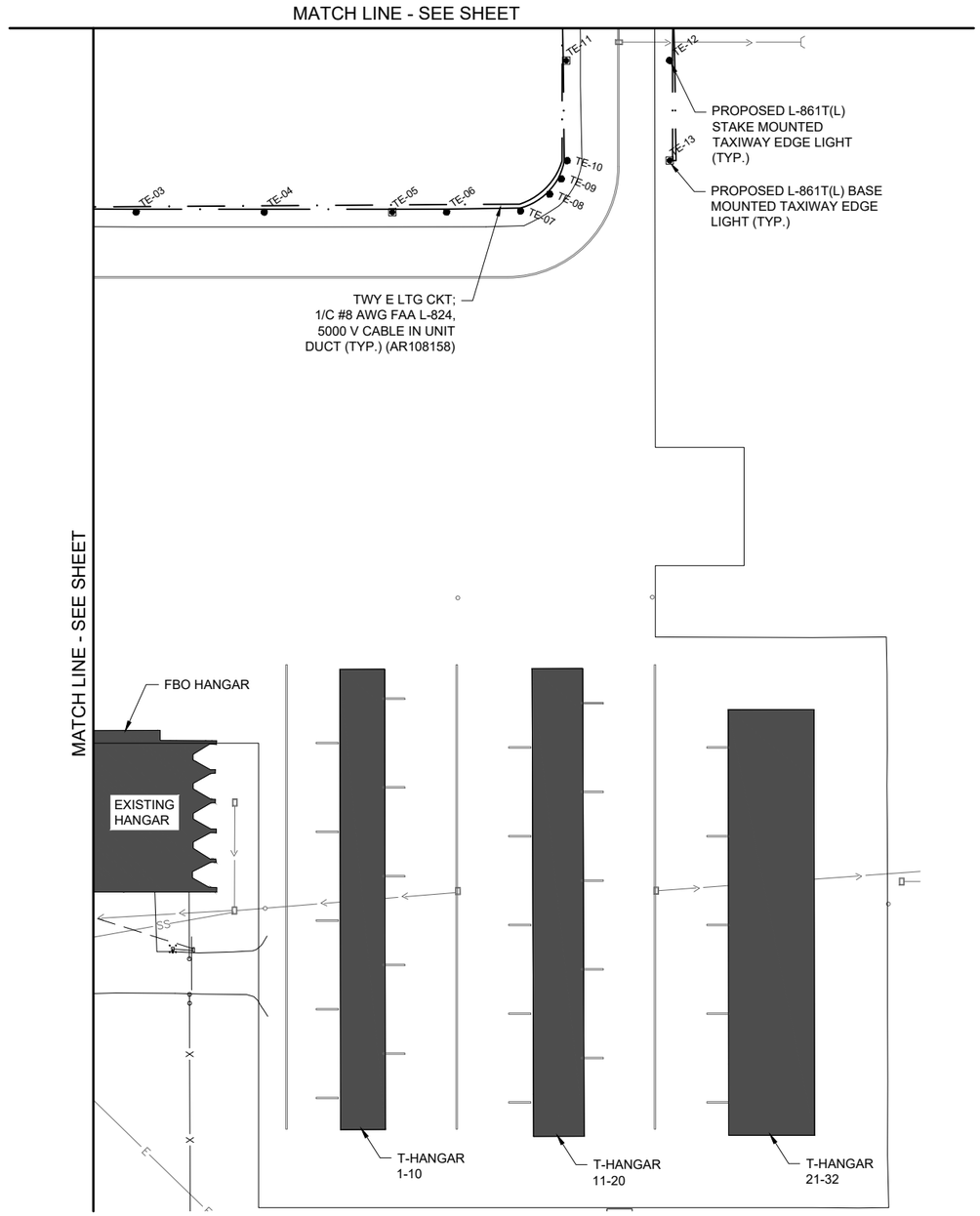
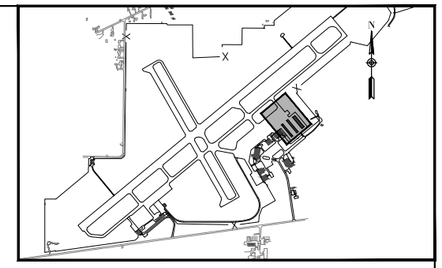
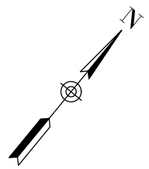




KEYMAP



50 0 50 100

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- E — EXISTING ELECTRICAL CABLES
- > — EXISTING STORM SEWER/UNDERDRAIN
- UGE — EXISTING ELECTRIC UTILITY UG PRIMARY
- T — EXISTING TELEPHONE
- G — EXISTING GAS
- X — EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 3/4" (MIN.) UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
- OR PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
- TWA TAXIWAY LIGHTING CIRCUIT DESIGNATION. "TW" DENOTES TAXIWAY "A" DENOTES RESPECTIVE TAXIWAY CKT DESIGNATION.
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- D PROPOSED BASE MOUNTED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING BASE MOUNTED RUNWAY LIGHT
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- EXISTING BASE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- HH EXISTING ELECTRICAL HANDHOLE
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- HH PROPOSED ELECTRICAL HANDHOLE
- SC PROPOSED SPLICE CAN
- EXISTING WIND CONE

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SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
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DESIGN BY: KNL 3/28/2022
DRAWN BY: CWS 3/30/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

PROPOSED ELECTRICAL PLAN - RAMP PLAN

LIGHT LOCATION TABLES

LIGHT LOCATION TABLE FOR TAXIWAY A CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TA-01	603097.0994	833499.9200		
TA-02	603099.5743	833504.2645		
TA-03	603081.4449	833506.1888		
TA-04	603064.4815	833496.3182		
TA-05	603051.2984	833479.9882		
TA-06	603019.4314	833441.4591		
TA-07	602930.1592	833333.5234		
TA-08	602809.0199	833187.0586		
TA-09	602719.7477	833079.1230		
TA-10	602687.8807	833040.5938		
TA-11	602685.6195	833013.6207		
TA-12	602699.7227	832990.5174		
TA-13	602716.7103	832975.6886		
TA-14	602791.0085	832914.2375		
TA-15	602865.3067	832852.7864		
TA-16	602890.3462	832847.2749		
TA-17	602911.4372	832859.6604		
TA-18	602822.5854	832752.2810		
TA-19	602830.7028	832775.7632		
TA-20	602820.6092	832798.7444		
TA-21	602746.3110	832860.1955		
TA-22	602672.0129	832921.6466		
TA-23	602642.2526	832932.9527		
TA-24	602610.5747	832930.4215		
TA-25	602583.0309	832914.4906		
TA-26	602551.1640	832875.9615		
TA-27	602526.3057	832845.9063		
TA-28	602469.5797	832777.3211		
TA-29	602412.8537	832708.7358		
TA-30	602356.1277	832640.1506		
TA-31	602299.4017	832571.5653		
TA-32	602242.6756	832502.9801		
TA-33	602217.8157	832472.9229		
TA-34	602185.9496	832434.3948		
TA-35	602183.1406	832414.0755		
TA-36	602191.8605	832395.5566		
TA-37	602228.9973	832361.9982		
TA-38	602280.7198	832319.2000		

LIGHT LOCATION TABLE FOR TAXIWAY A CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TA-39	602332.4549	832276.4170		
TA-40	602371.8001	832245.5201		
TA-41	602392.6770	832242.6527		
TA-42	602410.4779	832254.2400		
TA-43	602322.0014	832155.1572		
TA-44	602325.8536	832151.9696		
TA-45	602331.2559	832170.2686		
TA-46	602325.8491	832189.9874		
TA-47	602287.4244	832221.9804		
TA-48	602235.8325	832264.9365		
TA-49	602184.2455	832307.8985		
TA-50	602145.8134	832339.8828		
TA-51	602125.3548	832344.0249		
TA-52	602104.9606	832337.9310		
TA-53	602073.0946	832299.4085		
TA-54	602023.2431	832239.1441		
TA-55	601973.4045	832178.8691		
TA-56	601941.5257	832140.3572		
TA-57	601918.6984	832112.7616		
TA-58	601895.8711	832085.1661		
TA-59	601864.0013	832046.6393		
TA-60	601777.8893	831942.5399		
TA-61	601659.9076	831799.9138		
TA-62	601573.7956	831695.8145		
TA-63	601541.9259	831657.2876		
TA-64	601533.0913	831641.3007		
TA-65	601531.1894	831623.0270		
TA-66	601540.6208	831521.8563		
TA-67	601549.3439	831428.2829		
TA-68	601555.9333	831404.0912		
TA-69	601572.7421	831385.4592		
TA-70	601595.7341	831366.9278		
TA-71	601618.7257	831348.3966		
TA-72	601641.5734	831341.9044		
TA-73	601662.4804	831350.2684		
TA-74	601658.6282	831353.4559		
TA-75	601591.4736	831264.4551		
TA-76	601595.3332	831271.1825		

LIGHT LOCATION TABLE FOR TAXIWAY A CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TA-77	601592.3617	831279.4459		
TA-78	601573.5167	831295.5750		
TA-79	601551.2900	831314.5984		
TA-80	601528.6796	831333.9763		
TA-81	601503.6034	831357.5886		
TA-82	601487.2909	831387.9305		
TA-83	601481.1026	831421.8142		
TA-84	601472.2339	831515.3738		
TA-85	601462.6466	831616.5135		
TA-86	601467.2031	831661.4759		
TA-87	601488.8282	831701.2105		
TA-88	601520.6980	831739.7374		
TA-89	601606.8100	831843.8367		
TA-90	601724.7917	831986.4628		
TA-91	601810.9037	832090.5621		
TA-92	601842.7734	832129.0890		
TA-93	601824.4322	832154.1567		
TA-94	601859.5024	832196.5437		
TA-95	601888.6448	832184.0902		
TA-96	601911.5275	832230.0544		
TA-97	601961.8714	832289.9039		
TA-98	602012.2229	832349.7622		
TA-99	602044.4026	832388.0178		
TA-100	602072.1996	832421.6261		
TA-101	602099.9966	832455.2344		
TA-102	602552.5638	832986.6245		
TA-103	602579.7210	833019.4592		
TA-104	602606.8781	833052.2938		
TA-105	602634.0354	833085.1286		
TA-106	602665.9024	833123.6578		
TA-107	602755.1746	833231.5934		
TA-108	602876.3138	833378.0582		
TA-109	602965.5861	833485.9939		
TA-110	602997.4531	833524.5230		
TA-111	603000.9456	833548.2898		
TA-112	602988.9499	833567.2836		
TA-113	602986.4750	833562.9391		

NOTES:

1. TAXIWAY EDGE LIGHTS SHALL HAVE BLUE LENSES.

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ISSUE: JUNE 30, 2022
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DRAWN BY: KBD 3/31/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

LIGHT LOCATION TABLE - TAXIWAY A

LIGHT LOCATION TABLES

LIGHT LOCATION TABLE FOR TAXIWAY B CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TB-01	603928.3465	834659.0481		
TB-02	603992.8921	834729.1960		
TB-03	604086.6626	834840.0208		
TB-04	604147.2713	834913.3651		
TB-05	604179.3124	834951.7421		
TB-06	604184.9700	834976.9254		
TB-07	604172.5148	834999.3077		
TB-08	604217.4627	835053.4493		
TB-09	604233.6146	835046.7822		
TB-10	604250.8196	835049.8357		
TB-11	604288.0821	835083.1749		
TB-12	604371.7312	835184.1824		
TB-13	604486.9171	835323.2709		
TB-14	604602.1030	835462.3594		
TB-15	604717.2890	835601.4479		
TB-16	604832.4749	835740.5364		
TB-17	604915.7695	835841.1158		
TB-18	604947.6608	835879.6249		
TB-19	604993.9496	835935.5193		
TB-20	605040.2384	835991.4136		
TB-21	605086.5272	836047.3079		
TB-22	605118.4184	836085.8170		
TB-23	605184.0187	836165.0302		
TB-24	605281.5102	836282.7526		
TB-25	605347.1106	836361.9658		
TB-26	605379.0018	836400.4749		
TB-27	605405.4089	836432.2850		
TB-28	605431.8161	836464.0950		
TB-29	605458.2228	836495.9046		
TB-30	605472.0353	836496.9043		
TB-31	605503.4929	836470.8527		
TB-32	605534.9506	836444.8011		
TB-33	605566.4082	836418.7495		
TB-34	605612.2028	836380.8248		
TB-35	605657.9974	836342.9001		
TB-36	605695.5539	836311.7977		
TB-37	605733.1105	836280.6953		
TB-38	605621.3254	836134.6204		

LIGHT LOCATION TABLE FOR TAXIWAY B CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TB-39	605636.1566	836170.3944		
TB-40	605638.0247	836209.0759		
TB-41	605626.7096	836246.1127		
TB-42	605603.5432	836277.1459		
TB-43	605557.6803	836314.9882		
TB-44	605511.8175	836352.8305		
TB-45	605477.6326	836360.1081		
TB-46	605444.8593	836345.9351		
TB-47	605408.1185	836308.8454		
TB-48	605340.0767	836234.2509		
TB-49	605237.0390	836121.1216		
TB-50	605171.3085	836042.0162		
TB-51	605139.4838	836003.4520		
TB-52	605130.0713	835968.1550		
TB-53	605134.5854	835931.9046		
TB-54	605152.3668	835899.9939		
TB-55	605218.1945	835844.8625		
TB-56	605284.2757	835790.0288		
TB-57	605316.0005	835779.0475		
TB-58	605337.0512	835791.0687		
TB-59	605333.2003	835794.2578		
TB-60	605250.4130	835686.3646		
TB-61	605255.3741	835713.1089		
TB-62	605240.7586	835737.4813		
TB-63	605174.2564	835791.8066		
TB-64	605107.7582	835846.1285		
TB-65	605071.9300	835857.5776		
TB-66	605034.2724	835853.6177		
TB-67	605001.1907	835835.2942		
TB-68	604969.2523	835796.8242		
TB-69	604885.8343	835696.3469		
TB-70	604770.4778	835557.3997		
TB-71	604655.1213	835418.4524		
TB-72	604539.7649	835279.5052		
TB-73	604424.4084	835140.5579		
TB-74	604340.4436	835039.8118		
TB-75	604309.0519	835001.6107		
TB-76	604283.4994	834970.6127		

LIGHT LOCATION TABLE FOR TAXIWAY B CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TB-77	604257.9535	834939.6228		
TB-78	604232.4719	834908.5806		
TB-79	604200.6943	834869.9897		
TB-80	604140.2135	834796.5415		
TB-81	604047.9485	834684.4944		
TB-82	603987.4677	834611.0462		
TB-83	603955.5948	834572.5205		
TB-84	603943.1546	834557.3986		
TB-85	603940.4150	834534.3846		
TB-86	603950.1189	834513.3375		
TB-87	603981.6661	834485.1273		
TB-88	604009.1073	834462.3841		
TB-89	604036.5486	834439.6410		
TB-90	604065.0135	834416.0678		
TB-91	604093.4784	834392.4946		
TB-92	604121.9700	834368.8994		
TB-93	604144.9662	834365.1006		
TB-94	604164.8054	834374.3837		
TB-95	604029.6802	834211.0819		
TB-96	604038.0532	834232.4372		
TB-97	604029.2697	834255.0099		
TB-98	604018.2623	834285.5861		
TB-99	604016.6334	834318.0128		
TB-100	604011.7781	834354.7607		
TB-101	603992.4475	834386.3884		
TB-102	603965.4411	834409.6026		
TB-103	603938.8794	834432.4377		
TB-104	603905.0432	834443.0825		
TB-105	603867.1139	834440.0496		
TB-106	603833.8585	834424.0285		
TB-107	603801.3426	834386.0680		
TB-108	603728.6791	834298.1883		
TB-109	603624.1526	834171.7735		
TB-110	603519.6250	834045.3571		
TB-111	603446.9605	833957.4764		
TB-112	603415.0687	833918.9645		
TB-113	603390.6226	833889.2810		
TB-114	603367.7099	833858.5451		

LIGHT LOCATION TABLE FOR TAXIWAY B CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TB-115	603350.8509	833823.9837		
TB-116	603347.9891	833793.6520		
TB-117	603259.6309	833709.8632		
TB-118	603230.0568	833694.7613		
TB-119	603206.9873	833666.9923		
TB-120	603183.9748	833639.1760		
TB-121	603182.1060	833614.4388		
TB-122	603195.4733	833595.2796		
TB-123	603197.9483	833599.6241		
TB-124	603065.7848	833669.1589		
TB-125	603068.2597	833673.5034		
TB-126	603087.2788	833663.0830		
TB-127	603109.2526	833670.1829		
TB-128	603124.4547	833688.5200		
TB-129	603147.5171	833716.2949		
TB-130	603170.4145	833744.2066		
TB-131	603175.9352	833771.8973		
TB-132	603330.4983	833953.2444		
TB-133	603355.2883	833967.5016		
TB-134	603386.6239	834006.4645		
TB-135	603459.2491	834094.3753		
TB-136	603563.7789	834220.7874		
TB-137	603668.3088	834347.1994		
TB-138	603740.9462	834435.1009		
TB-139	603772.8166	834473.5849		
TB-140	603786.1012	834489.5929		
TB-141	603792.2225	834517.9163		
TB-142	603782.2857	834548.4500		
TB-143	603838.2473	834617.2756		
TB-144	603867.3142	834612.4036		
TB-145	603895.3474	834621.4360		

NOTES:

1. TAXIWAY EDGE LIGHTS SHALL HAVE BLUE LENSES.

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LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: E-142-ELEC.DWG
DESIGN BY: KNL 3/31/2022
DRAWN BY: KBD 3/31/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

LIGHT LOCATION TABLE - TAXIWAY B

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LIGHT LOCATION TABLES

LIGHT LOCATION TABLE FOR TAXIWAY C CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TC-01	603742.3608	833579.9323		
TC-02	603738.4532	833583.0529		
TC-03	603730.2768	833563.9173		
TC-04	603736.7265	833542.8890		
TC-05	603753.3423	833528.6357		
TC-06	603796.7704	833503.8567		
TC-07	603923.4595	833431.5707		
TC-08	604093.5423	833334.5254		
TC-09	604263.6250	833237.4800		
TC-10	604433.7077	833140.4347		
TC-11	604603.7905	833043.3894		
TC-12	604773.8732	832946.3440		
TC-13	604900.5234	832874.0799		
TC-14	604943.9191	832849.3193		
TC-15	604972.9967	832823.8293		
TC-16	604990.3763	832789.3323		
TC-17	604993.5590	832750.8203		
TC-18	604982.0687	832713.9207		
TC-19	604957.7289	832671.7575		
TC-20	604933.3878	832629.5917		
TC-21	604838.1227	832659.5160		
TC-22	604858.2395	832652.1957		
TC-23	604878.8097	832660.6830		
TC-24	604903.9544	832702.3897		
TC-25	604929.1424	832744.0708		
TC-26	604932.3492	832773.3436		
TC-27	604913.5512	832796.0111		
TC-28	604870.1054	832820.7690		
TC-29	604743.4295	832892.9881		
TC-30	604573.2812	832989.9186		
TC-31	604403.1457	833086.8726		
TC-32	604233.0107	833183.8263		
TC-33	604062.8757	833280.7801		
TC-34	603892.7407	833377.7338		
TC-35	603766.0127	833449.9515		
TC-36	603722.7638	833474.5981		
TC-37	603692.7800	833491.5652		
TC-38	603671.4362	833492.8209		

LIGHT LOCATION TABLE FOR TAXIWAY C CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TC-39	603654.3290	833481.3869		
TC-40	603658.1854	833478.2044		

LIGHT LOCATION TABLE FOR TAXIWAY D CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TD-01	603607.3807	833708.5666		
TD-02	603611.2328	833705.3789		
TD-03	603575.6811	833684.3103		
TD-04	603529.8813	833679.8987		
TD-05	603492.4169	833689.9724		
TD-06	603468.4878	833703.7722		
TD-07	603444.5613	833717.5706		
TD-08	603402.5717	833741.7403		
TD-09	603360.5821	833765.9100		
TD-10	603134.4172	833881.2825		
TD-11	603090.0552	833904.4221		
TD-12	602978.1862	833968.1418		
TD-13	602822.8758	834056.6171		
TD-14	602667.5653	834145.0924		
TD-15	602512.2549	834233.5676		
TD-16	602400.3895	834297.2937		
TD-17	602356.9444	834322.0429		
TD-18	602321.6098	834342.1767		
TD-19	602285.9812	834361.9776		
TD-20	602272.2873	834358.2597		
TD-21	602252.0715	834321.7712		
TD-22	602231.6480	834285.3982		
TD-23	602209.9203	834247.1972		
TD-24	602187.5125	834208.4647		
TD-25	602258.7797	834128.8926		
TD-26	602238.5921	834149.1202		
TD-27	602239.9378	834178.5998		
TD-28	602261.5065	834217.3517		
TD-29	602284.0968	834255.5198		
TD-30	602303.4028	834269.7206		
TD-31	602327.3658	834270.1204		
TD-32	602370.8065	834245.3736		
TD-33	602482.6763	834181.6451		

LIGHT LOCATION TABLE FOR TAXIWAY D CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TD-34	602637.9868	834093.1698		
TD-35	602793.2972	834004.6945		
TD-36	602948.6076	833916.2193		
TD-37	603060.4730	833852.4932		
TD-38	603103.9181	833827.7440		
TD-39	603132.1970	833811.6344		
TD-40	603160.4759	833795.5249		
TD-41	603289.317	833708.018		
TD-42	603318.303	833691.591		
TD-43	603360.514	833667.671		
TD-44	603402.724	833643.75		
TD-45	603431.794	833614.722		
TD-46	603449.212	833577.577		
TD-47	603452.941	833536.721		
TD-48	603440.282	833498.782		
TD-49	603436.43	833501.969		

NOTES:

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DATE SIGNED: 4/22/2022
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REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
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DESIGN BY: KNL 3/31/2022
DRAWN BY: KBD 3/31/2022
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SHEET TITLE

LIGHT LOCATION TABLE - TAXIWAY C & D

LIGHT LOCATION TABLES

LIGHT LOCATION TABLE FOR TAXIWAY E CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TE-01	603778.3816	834788.8972		
TE-02	603801.5949	834817.2278		
TE-03	603856.4977	834884.2338		
TE-04	603911.6940	834950.9981		
TE-05	603966.9316	835017.7179		
TE-06	603990.3054	835045.9267		
TE-07	604022.7633	835083.9692		
TE-08	604044.0460	835091.9073		
TE-09	604057.0249	835091.3643		
TE-10	604069.0892	835086.5574		
TE-11	604120.8012	835042.9364		
TE-12	604165.4059	835096.6604		
TE-13	604113.3470	835139.8683		
TE-14	603746.6869	834750.2156		
TE-15	603740.2829	834718.4256		
TE-16	603750.9814	834687.8052		
TE-17	603794.1056	834651.8982		
TE-18	603740.0957	834585.3971		
TE-19	603696.7965	834621.0689		
TE-20	603665.7515	834627.7010		
TE-21	603635.7203	834616.0920		
TE-22	603603.7725	834577.6306		
TE-23	603583.7339	834553.5152		
TE-24	603531.7399	834490.9434		
TE-25	603479.7529	834428.3659		
TE-26	603427.9729	834365.6176		
TE-27	603376.1930	834302.8692		
TE-28	603370.3459	834299.4096		
TE-29	603315.1397	834288.9244		
TE-30	603259.7994	834279.1529		
TE-31	603236.0245	834265.8446		
TE-32	603220.4311	834243.5014		
TE-33	603216.1676	834216.4466		
TE-34	603225.1250	834167.3454		
TE-35	603237.1778	834101.2763		
TE-36	603249.1991	834035.3797		
TE-37	603258.1880	833986.1060		
TE-38	603275.2392	833962.9443		

LIGHT LOCATION TABLE FOR TAXIWAY E CIRCUIT				
LIGHT #	NORTHING	EASTING	GROUND RESISTANCE	NOTES
TE-39	603301.9185	833951.9202		
TE-40	603156.6105	833883.7139		
TE-41	603174.4619	833897.1221		
TE-42	603182.9810	833917.7589		
TE-43	603178.1648	833944.3146		
TE-44	603173.3475	833970.8702		
TE-45	603164.5647	834019.9401		
TE-46	603152.7230	834086.1091		
TE-47	603140.9321	834151.9863		
TE-48	603132.0977	834201.3523		
TE-49	603118.9249	834226.8834		
TE-50	603099.0109	834238.8391		
TE-51	603065.1643	834243.8027		

NOTES:

1. TAXIWAY EDGE LIGHTS SHALL HAVE BLUE LENSES.

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REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
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Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
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DESIGN BY: KNL 3/31/2022
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LIGHT LOCATION TABLE - TAXIWAY E

AIRFIELD LIGHTING REMOVAL, RELOCATION, AND INSTALLATION NOTES

1. KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).

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

3. VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, INSTALLING, CONNECTING OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, DISTANCE REMAINING SIGN, RUNWAY SIGN, TAXI SIGN, NAVAID, VAULT EQUIPMENT OR OTHER DEVICE.

4. INSTALL AIRFIELD LIGHTING, SIGNS, SPLICE CANS, ELECTRICAL DUCTS, HANDHOLES, MANHOLES, AND CABLE AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.

5. NEW AIRFIELD LIGHTING SYSTEM INSTALLATIONS, ADJUSTMENTS, RELOCATIONS, REINSTALLATIONS, AND/OR UPGRADES SHALL USE BASE (L-867 OR L-868) MOUNTED FIXTURES AND A CLOSED CONDUIT SYSTEM.

6. LIGHTING CABLE FOR AIRFIELD LIGHTING SERIES CIRCUITS SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN 2" SCHEDULE 40 PVC OR SCHEDULE 40 HDPE DUCT. CABLE SHALL BE FAA APPROVED.

7. IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

8. GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE AND RUNWAY/TAXI SIGN. THE PURPOSE OF THE LIGHT BASE GROUND IS PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. PER NATIONAL ELECTRICAL CODE ARTICLE 250.53 "GROUNDING ELECTRODE SYSTEM INSTALLATION" RESISTANCE FROM THE GROUND ROD/ELECTRODE TO EARTH GROUND MUST BE 25 OHMS OR LESS VIA MEASUREMENT WITH A GROUND TESTER. GROUNDS RODS FOR LIGHT BASE GROUNDS SHALL BE 3/4-INCH BY 10-FEET MINIMUM LENGTH UL LISTED COPPER-CLAD STEEL SECTIONAL RODS. GROUND RODS SHALL BE PRODUCED FROM 100% DOMESTIC STEEL. EACH GROUND ROD SHALL BE TESTED AND THE RESULTS RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND RUNWAY/TAXI SIGN INSTALLATION. COPIES OF GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER AND/OR THE RESIDENT ENGINEER/TECHNICIAN.

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

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

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

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

13. OBTAIN APPROVAL FROM THE AIRPORT MANAGER PRIOR TO SHUTTING DOWN A RUNWAY OR TAXIWAY. WHEN A RESPECTIVE RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. WHEN A RESPECTIVE TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING FOR THAT TAXIWAY SHALL BE SHUT OFF.

14. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.

15. 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 DIRECTION.

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

17. EXISTING AIRFIELD LIGHTS DESIGNATED FOR REMOVAL SHALL BE CAREFULLY REMOVED IN THERE ENTIRETY. THE CONTRACTOR SHALL DISCONNECT AND REMOVE THE EXISTING LIGHTS, AS NOT TO DAMAGE THEM, INCLUDING MOUNTING STAKES, BASES, FOUNDATIONS AND TRANSFORMERS. THE EXISTING AIRFIELD LIGHTS, TRANSFORMERS, LIGHT BASES, COVERS AND MOUNTING STAKES SHALL BE TURNED OVER TO THE AIRPORT. LIGHT BASES SHALL BE REMOVED AND DISPOSED OF OFF SITE. ANY MATERIAL NOT SALVAGED BY THE AIRPORT SHALL BE DISPOSED OF OFF THE AIRPORT SITE, IN A LEGAL MANNER, AT THE CONTRACTOR'S OWN EXPENSE. EXISTING DUCTS AND CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS, RELOCATIONS, REPLACEMENTS AND/OR CABLE OR DUCT REPLACEMENTS SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. PROVIDE TEMPORARY CABLES AND DUCTS TO ACCOMMODATE AIRFIELD LIGHTING CIRCUITS THAT ARE TO REMAIN ACTIVE DURING CONSTRUCTION. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES. REMOVAL OF EXISTING AIRFIELD LIGHTING WILL BE PAID FOR UNDER ITEM AR800476 REMOVE AIRFIELD LIGHTING PER LUMP SUM.

18. OWNER SHALL BE KEPT INFORMED OF WORK AND SCHEDULES.

19. ROUTE NEW CABLES AND DUCTS TO AVOID INTERFERENCES WITH OTHER UTILITIES, LINES, CABLES AND STRUCTURES.

20. ALL ELECTRICAL EQUIPMENT (INCLUDING AIRFIELD LIGHTING AND NAVADS) AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRIC CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS, AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERNEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

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

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

23. RUNWAY AND TAXIWAY LIGHTING CIRCUITS SHALL BE ACTIVE AT THE END OF EACH CONSTRUCTION DAY FOR AN OPEN RUNWAY OR AN OPEN TAXIWAY. THE CONTRACTOR SHALL PROVIDE TEMPORARY CABLE & CONNECTIONS WHERE NECESSARY TO MAINTAIN A RUNWAY OR TAXIWAY LIGHTING SYSTEM. TEMPORARY CABLE FOR AIRFIELD LIGHTING SERIES CIRCUITS SHALL BE 1/C #8 FAA L-824 5KV UG CABLE IN DUCT OR UNIT DUCT.

24. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2G, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS". ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

25. CONTRACTOR SHALL INTERFACE EXISTING AIRFIELD LIGHTING AND/OR SIGNS TO THE NEW, REMOVED, REINSTALLED, ADJUSTED, REPLACED, AND/OR RELOCATED AIRFIELD LIGHTING AND ASSOCIATED CIRCUITS.

26. ALL AIRFIELD LIGHT FIXTURES SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE RESPECTIVE LIGHT FIXTURE NUMBERS. CONFIRM LIGHT FIXTURE NUMBERING WITH THE AIRPORT MANAGER/MAINTENANCE SUPERVISOR.

27. 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.

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

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

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

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

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LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION	DES	DWN	REV

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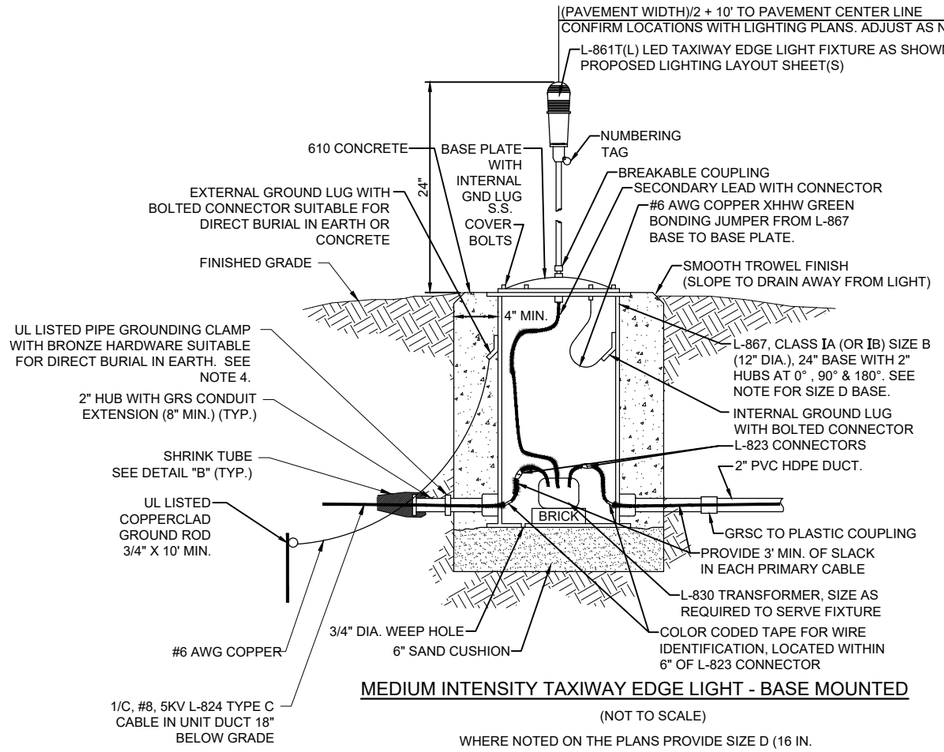
SHEET TITLE

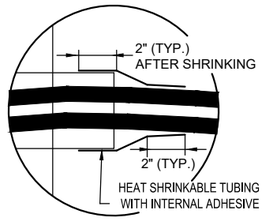
AIRFIELD LIGHTING NOTES



MEDIUM INTENSITY TAXIWAY EDGE LIGHT - BASE MOUNTED

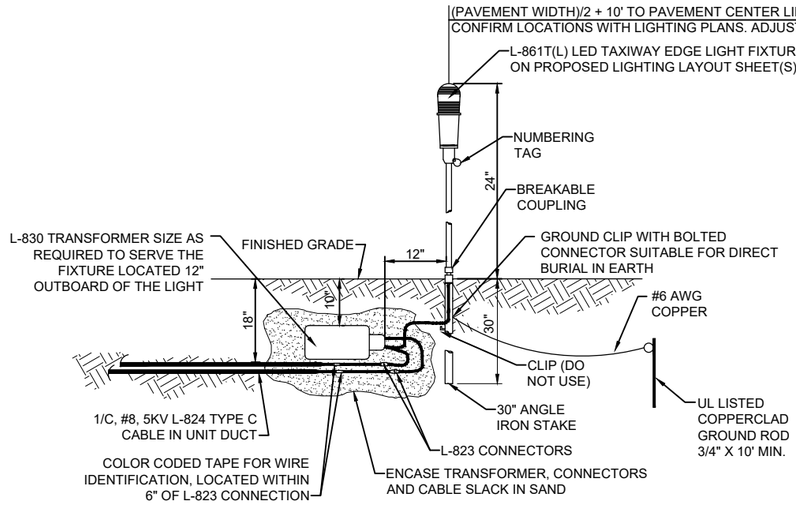
(NOT TO SCALE)

WHERE NOTED ON THE PLANS PROVIDE SIZE D (16 IN. NOMINAL DIAMETER) LIGHT BASE WITH 2" HUBS AT 0, 90, 180 AND 270 DEGREES TO ACCOMMODATE CONDUIT, DUCT, AND CABLE INTERFACE.



DETAIL "B"

(NOT TO SCALE)



MEDIUM INTENSITY TAXIWAY EDGE LIGHT - STAKE MOUNTED

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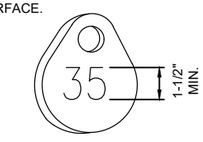
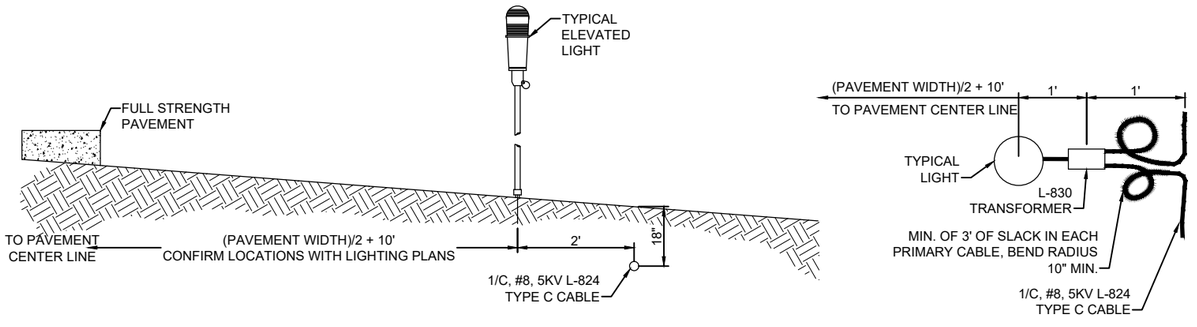


NOTE:

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)



PROFILE VIEW

PLAN VIEW

LIGHT AND CABLE INSTALLATION DETAIL

(NOT TO SCALE)

NOTES:

1. SEE ELECTRICAL NOTES SHEETS.
2. SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING.
3. SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
4. 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.
5. 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-861T(L) FOR TAXIWAY EDGE 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.
6. 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), OR SIZE D (16 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.
7. 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.
8. 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.
9. 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.
10. IDENTIFICATION TAGS SHALL BE ATTACHED TO EACH AIRFIELD LIGHT FIXTURE.
11. 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.

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REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

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TAXIWAY LIGHT DETAILS

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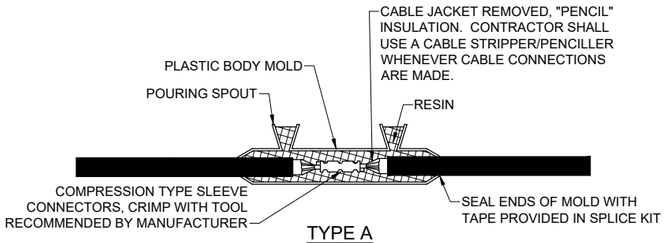
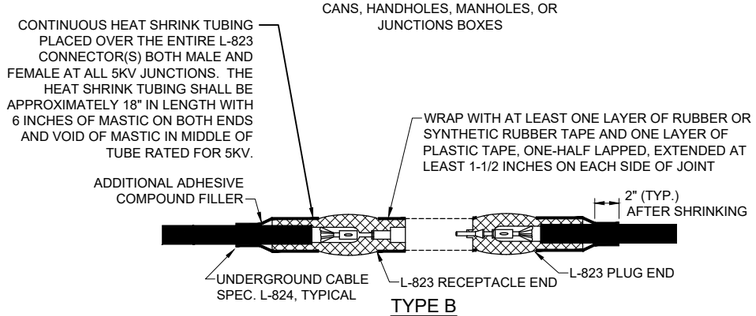


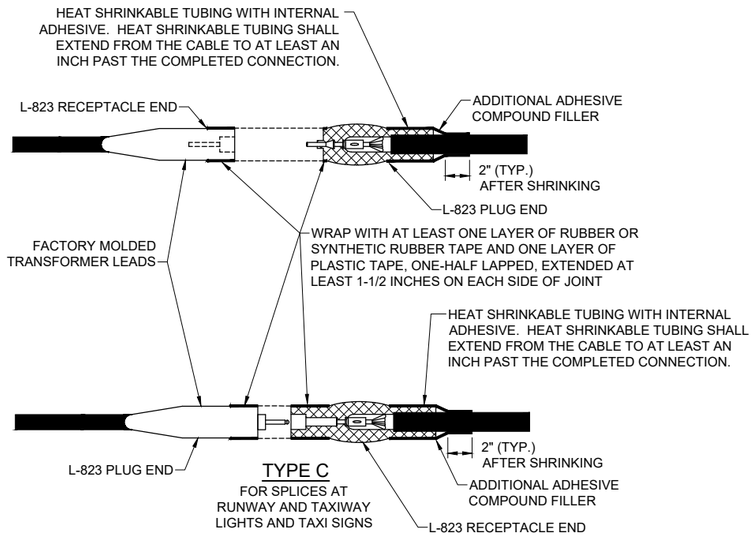
TYPE A

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



TYPE B

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

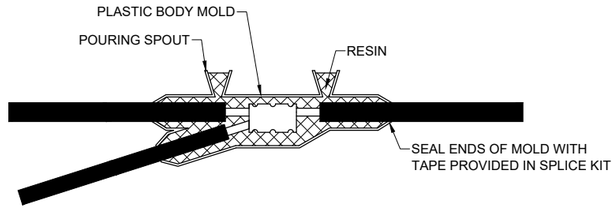


TYPE C

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS AND TAXI SIGNS

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

CABLE SPLICES
"NOT TO SCALE"

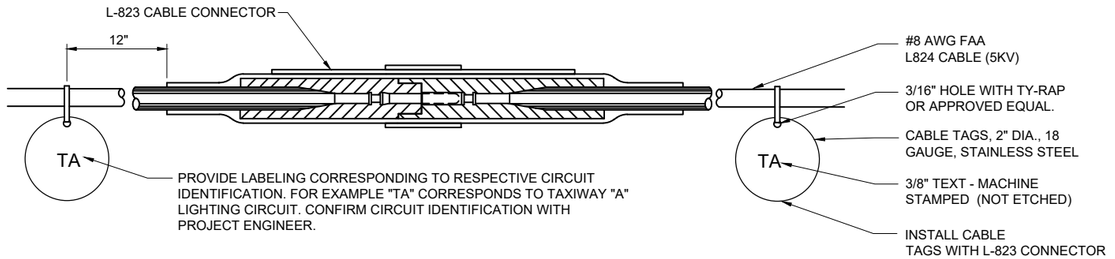


LOW VOLTAGE UNDERGROUND TAP SPLICE

FOR TAP SPLICES IN LOW VOLTAGE (600V) CABLE. SPLICES SHALL BE RATED AND LISTED SUITABLE FOR DIRECT BURIAL LOCATIONS. FOR SPLICES UP TO #2 AWG CONDUCTOR, SPLICES SHALL BE WYE RESIN TYPE POWER CABLE TAP SPLICE KIT SUITABLE FOR THE RESPECTIVE CABLES AND RESPECTIVE APPLICATION.

NOTES:

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



1. CONTRACTOR SHALL PROVIDE CABLE CIRCUIT IDENTIFICATION MARKERS ATTACHED TO BOTH SIDES OF EACH CABLE CONNECTION.
2. CABLE IDENTIFICATION TAGS SHALL BE STAINLESS STEEL OR BRASS.
3. THE CABLE SHALL THOROUGHLY BE CLEANED PRIOR TO THE INSTALLATION OF THE L-823 CONNECTOR KIT.
4. ATTACH EACH CABLE TIE ENOUGH TO HOLD IN PLACE WITHOUT COMPRESSING EDGE OF CABLE TAG INTO CONDUCTOR. TRIM OFF EXCESS CABLE TIE.
5. CABLE TAGS SHALL BE PROVIDED AT ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
6. CABLE TAGS SHALL BE LABELED AS FOLLOWS FOR RESPECTIVE AIRFIELD LIGHTING CIRCUITS,
   TAXIWAY A LIGHTING: TA
   TAXIWAY B LIGHTING: TB
   TAXIWAY C LIGHTING: TC
   TAXIWAY D LIGHTING: TD
   TAXIWAY E LIGHTING: TE

CABLE TAG DETAIL
"NOT TO SCALE"

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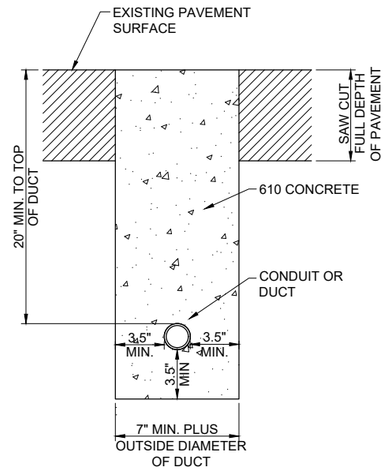
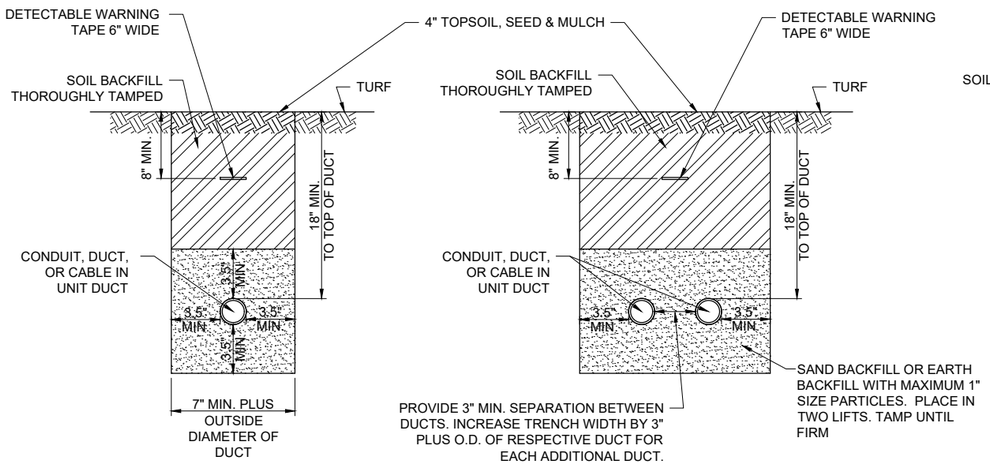
AIRPORT LIGHTING CABLE SPLICE DETAILS



CONDUIT IN TRENCH - PAVED AREAS

"NOT TO SCALE"



CONDUIT IN TRENCH - NON-PAVEMENT AREAS

"NOT TO SCALE"

NOTES:

1. DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.

2. TRENCHES WITH MORE THAN TWO DUCTS OR CABLE IN UNIT DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, DUCT, OR CABLE IN UNIT DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.

3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. MINIMUM COVER REQUIREMENTS FOR DUCTS CONTAINING NAVAID FEEDER CIRCUITS SHALL BE 24". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED BELOW PAVEMENT OR ROADWAYS IS 30". MINIMUM COVER FOR DUCTS LOCATED IN AREAS SUBJECT TO FARMING IS 42". MINIMUM COVER FOR DUCTS CONTAINING SECONDARY ELECTRIC SERVICE CONDUCTORS SHALL BE 36" OR AS REQUIRED BY THE SERVING ELECTRIC UTILITY COMPANY. ADJUST/INCREASE BURIAL DEPTHS TO ACCOMMODATE SITE CONDITIONS, DRAINAGE AND/OR OBSTRUCTIONS. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.

4. HIGH-VOLTAGE CIRCUIT WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW-VOLTAGE CIRCUIT WIRING (RATED 600 VOLTS AND BELOW) SHALL MAINTAIN SEPARATION FROM EACH OTHER. HIGH-VOLTAGE WIRING AND LOW-VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, HANDHOLE, OR JUNCTION BOX. CORRECTIVE WORK WILL BE REQUIRED TO SEPARATE HIGH VOLTAGE SERIES CIRCUIT CONDUCTORS FROM LOW VOLTAGE CONDUCTORS WHERE THEY ARE INSTALLED IN THE SAME RACEWAY.

5. SERVICE CONDUCTORS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH FEEDER CIRCUITS, BRANCH CIRCUITS OR CONTROL CIRCUITS.

6. COMMUNICATION CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH POWER CIRCUITS.

7. HOME RUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.

8. COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.

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

10. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.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.

11. 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).

12. THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION PHONE; 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

13. ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.

14. CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESPECTIVE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.

15. PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.

16. THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. THE CONTRACTOR WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED UNDERGROUND IMPROVEMENTS

17. CONDUITS FOR DIRECT BURIAL OR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 (MINIMUM) PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651, LISTED SUITABLE FOR UNDERGROUND USE EITHER DIRECT-BURIED OR ENCASED IN CONCRETE, OR SCHEDULE 40 (MINIMUM) HDPE CONDUIT, UL LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND LISTED SUITABLE FOR UNDERGROUND USE; EITHER DIRECT BURY OR ENCASED IN CONCRETE. HEAVIER WALL CONDUITS SHALL BE FURNISHED FOR RESPECTIVE APPLICATIONS WHERE DETAILED HEREIN.

18. CONDUITS FOR DIRECTIONAL BORING SHALL BE SCHEDULE 40 PVC CONDUIT OR SCHEDULE 80 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651 AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, SCHEDULE 80 HDPE CONDUIT, UL-LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, OR WALL TYPE MINIMUM SDR 11 HDPE CONDUIT MANUFACTURED IN ACCORDANCE WITH ASTM D-3350 (SPECIFICATION OF POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS) AND ASTM F2160 (STANDARD SPECIFICATION FOR SOLID WALL, HIGH-DENSITY POLYETHYLENE CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER), AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION. PER NEC 300.5 (K), RACEWAYS INSTALLED USING DIRECTIONAL BORING EQUIPMENT SHALL BE APPROVED FOR THE PURPOSE.

19. UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.

20. A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.

21. CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.

22. ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

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100 AVIATION DRIVE
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LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

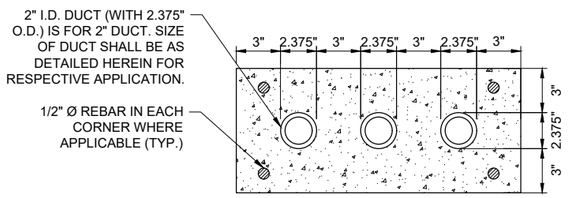
IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: E-505-DETL.DWG
DESIGN BY: KNL 3/25/2022
DRAWN BY: CWS 3/28/2022
REVIEWED BY: BSS 4/20/2022

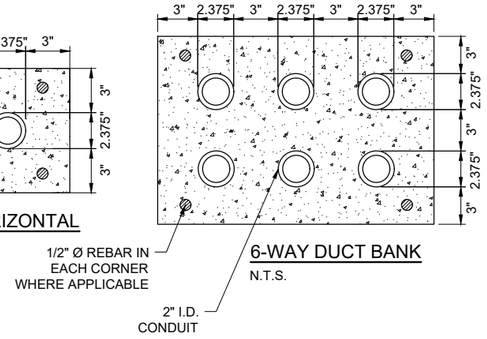
SHEET TITLE

CONDUIT TRENCH DETAILS



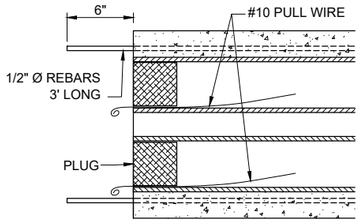
3-WAY DUCT BANK - HORIZONTAL

N.T.S.



6-WAY DUCT BANK

N.T.S.



TYPICAL SECTION

(NOT TO SCALE)

DUCT BANK NOTES:

1. DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., CARLON, CANTEX, OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
3. PROVIDE REBAR WHERE APPLICABLE TO ACCOMMODATE INTERFACE OF CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLE OR MANHOLE. PROVIDE REBAR WHERE APPLICABLE TO EXTEND AN EXISTING CONCRETE DUCT BANK OR WHERE NECESSARY TO CONSTRUCT A DUCT BANK WITH MULTIPLE CONCRETE POURS AT DIFFERENT STAGES. PROVIDE REBAR REINFORCEMENT WHERE DUCT BANK IS LOCATED BELOW PAVEMENT. REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706, GRADE 60, OR ASTM A615, GRADE 60.

DUCT INSTALLATION NOTES

1. 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.
2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
3. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. THE 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 WHATEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. 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.
5. 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 ENGINEER/ RESIDENT TECHNICIAN AND THE AIRPORT MANAGER.
6. 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.
7. 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.
8. THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. HE WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED UNDERGROUND IMPROVEMENTS
9. CONDUITS FOR DIRECT BURIAL OR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 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.
10. 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 SDR 13.5 OR 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.
11. INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
12. MINIMUM COVER REQUIREMENTS TO TOP OF ELECTRICAL DUCT ENCASEMENT SHALL BE AS FOLLOWS:
    -18 IN. MIN. IN TURF AREAS AT AIRPORTS OR ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED, AND NOT SUBJECT TO FARMING.
    -42 IN. MIN. IN AREAS SUBJECT TO FARMING.
    -30 IN. MIN. WHERE LOCATED BELOW PAVEMENT OR ROADWAY.

    WHERE DETAILED ON THE PLANS OR WHERE REQUIRED TO AVOID OBSTRUCTIONS, DUCTS SHALL BE BURIED DEEPER. 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.
13. WHERE CONCRETE-ENCASED DUCT INTERFACES TO AN ELECTRICAL HANDHOLE OR MANHOLE, THE CONCRETE ENCASEMENT SHALL BE INSTALLED UP TO THE RESPECTIVE HANDHOLE OR MANHOLE. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.
14. 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.
15. A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
16. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
17. CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES. COMMUNICATION CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.
18. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
19. 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.
20. CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
21. ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

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LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

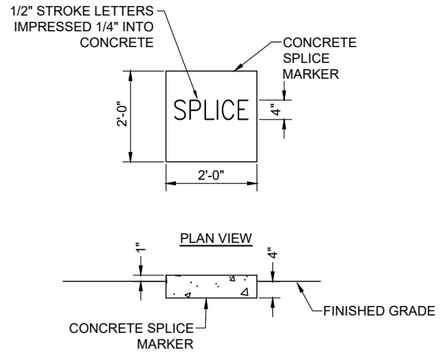
IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: E-510-DETL.DWG
DESIGN BY: KNL 3/25/2022
DRAWN BY: CWS 3/28/2022
REVIEWED BY: BSS 4/20/2022

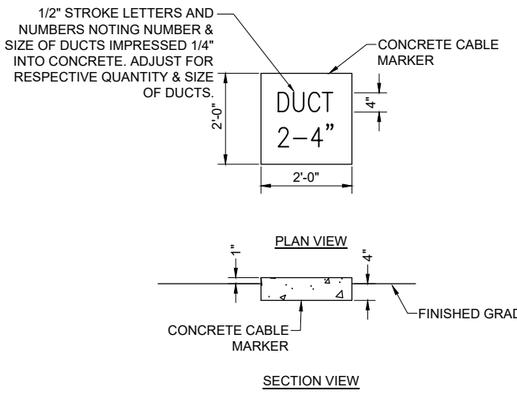
SHEET TITLE

DUCT BANK DETAILS AND NOTES



TURF CABLE MARKERS

"NOT TO SCALE"



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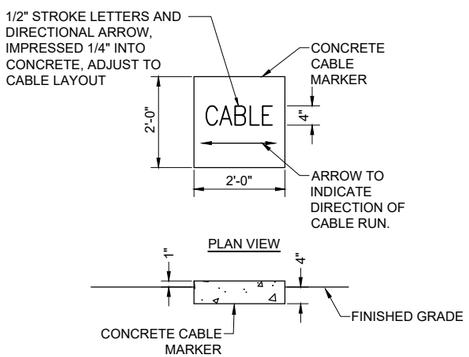

TURF CABLE MARKERS

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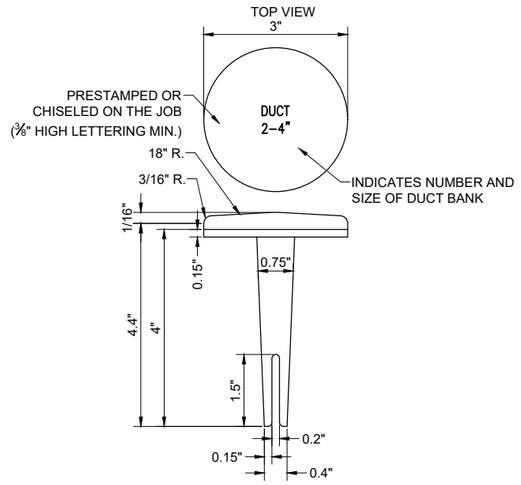


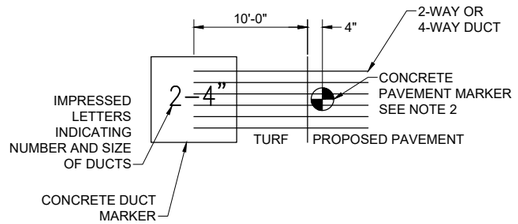
BITUMINOUS PAVEMENT DUCT MARKERS

"NOT TO SCALE"

NOTE:

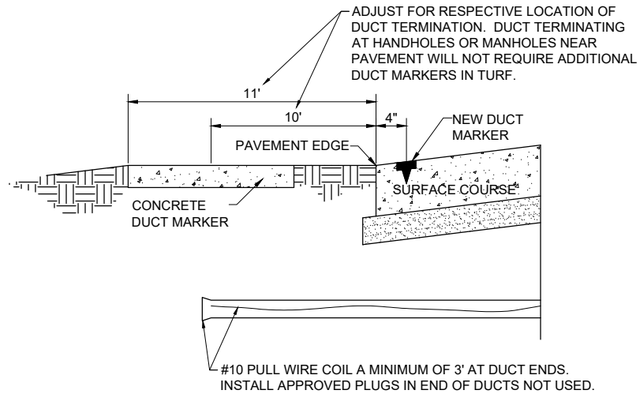
1. TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE

2. BRASS DUCT MARKERS ARE AVAILABLE FROM 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.



DUCT MARKER DETAIL-PLAN

"NOT TO SCALE"



UNDERGROUND ELECTRICAL DUCT

(NOT TO SCALE)

CABLE & DUCT MARKER NOTES:

1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.

2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE INFORMED AS DESCRIBED IN NOTE 4.

3. UNDERGROUND CABLE RUNS MUST BE IDENTIFIED BY CABLE MARKERS AT 200 FEET (61 M) MAXIMUM SPACING WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS MUST BE INSTALLED ABOVE THE CABLE. CABLE MARKERS ARE NOT REQUIRED FOR CABLE RUNS BETWEEN RUNWAY/TAXIWAY EDGE LIGHTS.

4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.

5. EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED:
   A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
   B. INCREASE THE MARKER SIZE TO 30" X 30".
   C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE

6. TURF DUCT MARKERS ARE NOT REQUIRED AT PAVEMENT CROSSINGS WHERE DUCTS TERMINATE IN HANDHOLES, OR JUNCTION STRUCTURES.

7. LOCATION OF ALL DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, MUST BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS MUST BE PLACED ABOVE THE SPLICE/CONNECTIONS. DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICES SHALL BE AVOIDED WHERE POSSIBLE. CABLE SPLICES SHALL BE LOCATED IN SPLICE CANS, LIGHT BASES, HANDHOLES, MANHOLES, OR OTHER JUNCTION STRUCTURES UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.

8. THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: RWY 4-22, PAPI-4, PAPI-22.

9. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

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LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
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CABLE AND DUCT MARKER DETAILS

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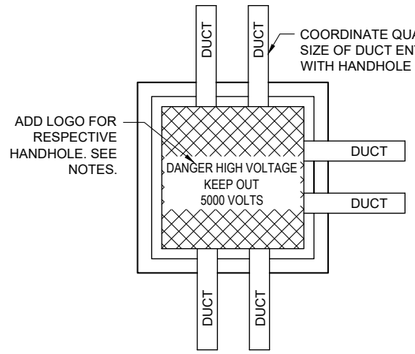
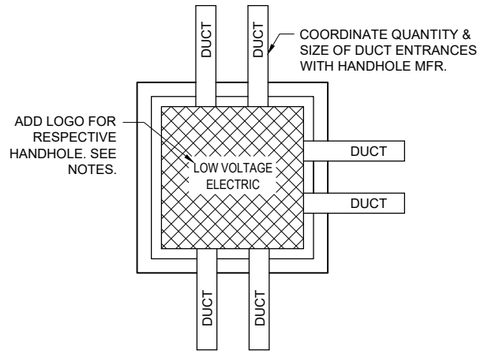


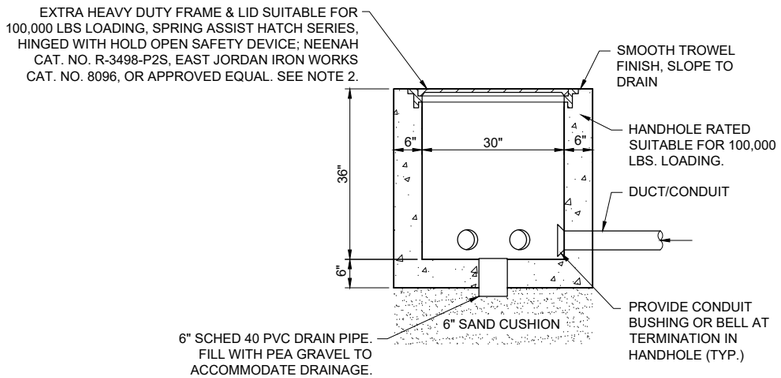
HIGH VOLTAGE HANDHOLE PLAN

"NOT TO SCALE"



LOW VOLTAGE HANDHOLE PLAN

"NOT TO SCALE"



ELEVATION

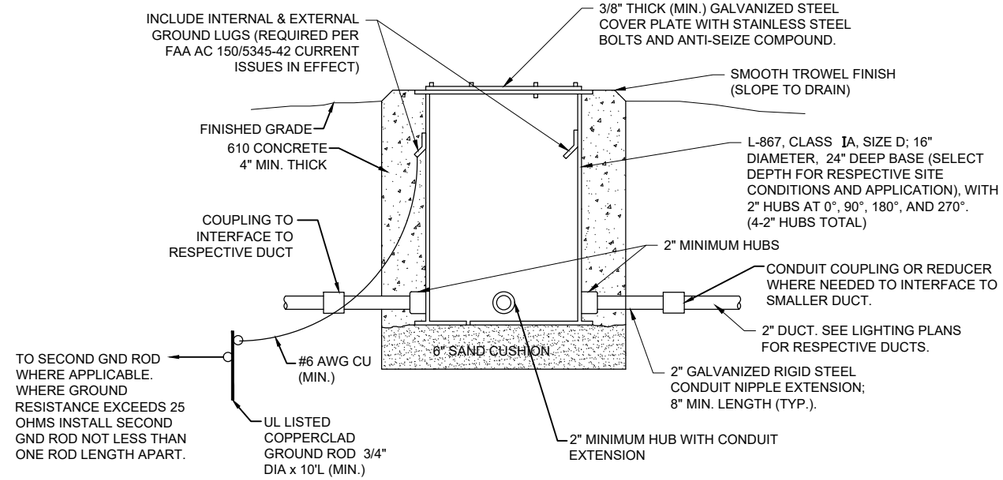
"NOT TO SCALE"

HANDHOLE NOTES:

1. 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.
2. 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.
3. REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
4. CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
5. HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURER MUST BE ON THE IDOT (ILLINOIS DEPARTMENT OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
6. FRAMES AND LIDS (CASTINGS) SHALL BE MADE IN THE USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENTS.
7. COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
8. 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.
9. 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:

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

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HANDHOLE AND SPLICE CAN DETAILS

GENERAL NOTES

1. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

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

3. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).

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

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

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

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

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

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

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

   B. THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.

   C. INSTALLATION INSTRUCTION.

   D. START-UP INSTRUCTIONS.

   E. PREVENTATIVE MAINTENANCE REQUIREMENTS.

   F. CHART FOR TROUBLE-SHOOTING.

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

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

   I. SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

1. PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

16. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL. LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.

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

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

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

20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.

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

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

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

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

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

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

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

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

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

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

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

   I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.

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

24. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "ARC FLASH HAZARD WARNING".

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SHEET 1

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AIRFIELD LIGHTING NOTES

1. UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
4. THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.
5. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.
6. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
7. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
8. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
9. DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
10. A SLACK OF THREE (3') FEET, MINIMUM, PLUS DEPTH OF BASE CAN (IF APPLICABLE), SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER. THERE SHALL BE NO ADDITIONAL PAYMENT FOR CABLE SLACK AND THEREFORE THE QUANTITY OF PROPOSED CABLE SLACK HAS NOT BEEN INCLUDED IN THE RESPECTIVE CABLE PAY ITEMS.
11. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
12. L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.
20. ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK.
21. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
22. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
23. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
24. ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
25. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
26. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
27. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
29. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI (MINIMUM) AT 14 DAYS, IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
31. THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.
32. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

GROUNDING NOTES FOR AIRFIELD LIGHTING

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. A GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE, TAXI GUIDANCE SIGN AND L-867/L-868 BASE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR. CONNECTIONS TO LIGHT BASES MAY ALSO BE MADE WITH A UL 467 LISTED PIPE CLAMP CONNECTED TO THE GRSC NIPPLE EXTENDING FROM A THREADED LIGHT BASE HUB. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. PER THE REQUIREMENTS OF FAA AC 150/5340-30J DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6 "LIGHT FIXTURE BONDING" IT NOTES THE FOLLOWING: BOND THE LIGHT FIXTURE TO THE LIGHT BASE INTERNAL GROUND LUG VIA A NO. 6 AWG STRANDED COPPER WIRE RATED 600 VOLTS WITH GREEN XHHW, THWN-2, OR OTHER SUITABLE INSULATION, BARE STRANDED CONDUCTOR OR A BRAIDED GROUND STRAP OF EQUIVALENT CURRENT RATING. THE BONDING CONDUCTOR LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING A BONDING WIRE TO THE FIXTURE.
3. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.
4. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2020 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
5. THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
6. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, DISTANCE REMAINING SIGN, JUNCTION STRUCTURE/L-867 BASE/L-868 BASE, OR OTHER AIRFIELD LIGHT FIXTURE, THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND EACH TAXI GUIDANCE SIGN INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, LONGER GROUND RODS OR ADDITIONAL GROUND RODS MIGHT BE REQUIRED. IF GROUND RESISTANCE EXCEEDS 25 OHMS CONTACT THE PROJECT ENGINEER 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.

FOR BID

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LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

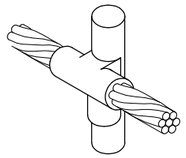
IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

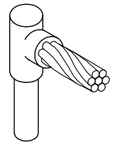
ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
CAD FILE: E-003-NOTES.DWG
DESIGN BY: KNL 3/25/2022
DRAWN BY: CWS 3/28/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

ELECTRICAL NOTES
SHEET 2



CABLE TO GROUND ROD



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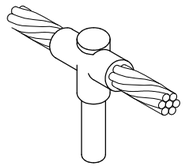
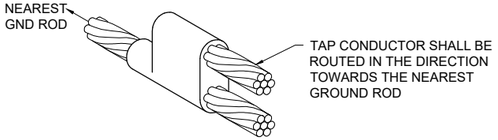
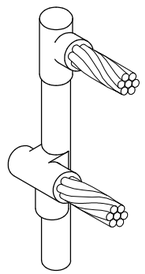


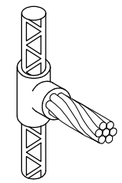
CABLE TO GROUND ROD



CABLE TO CABLE
HORIZONTAL PARALLEL TAP



CABLES TO GROUND ROD

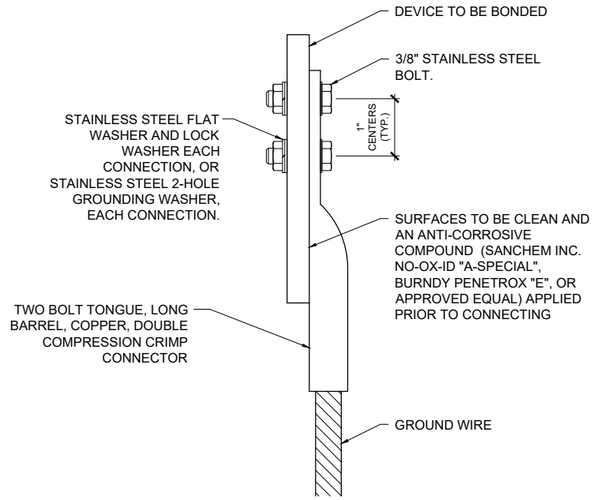


CABLE TO REBAR

DETAIL NOTES

1. 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.
2. 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.
3. 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

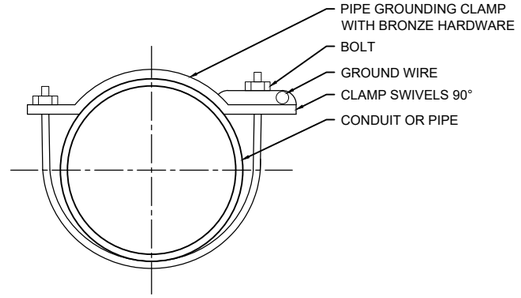


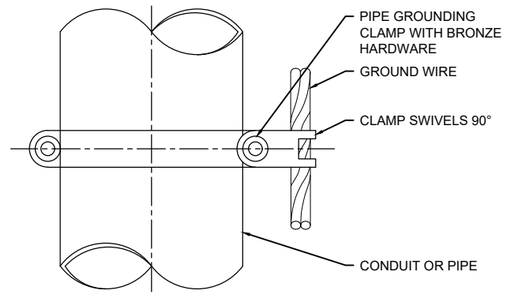
2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	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

1. ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. 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.
3. 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.
4. 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





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

1. 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

FOR BID

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100 AVIATION DRIVE
MT VERNON, IL 62864

LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
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DESIGN BY: KNL 3/25/2022
DRAWN BY: CWS 3/28/2022
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

GROUNDING DETAILS

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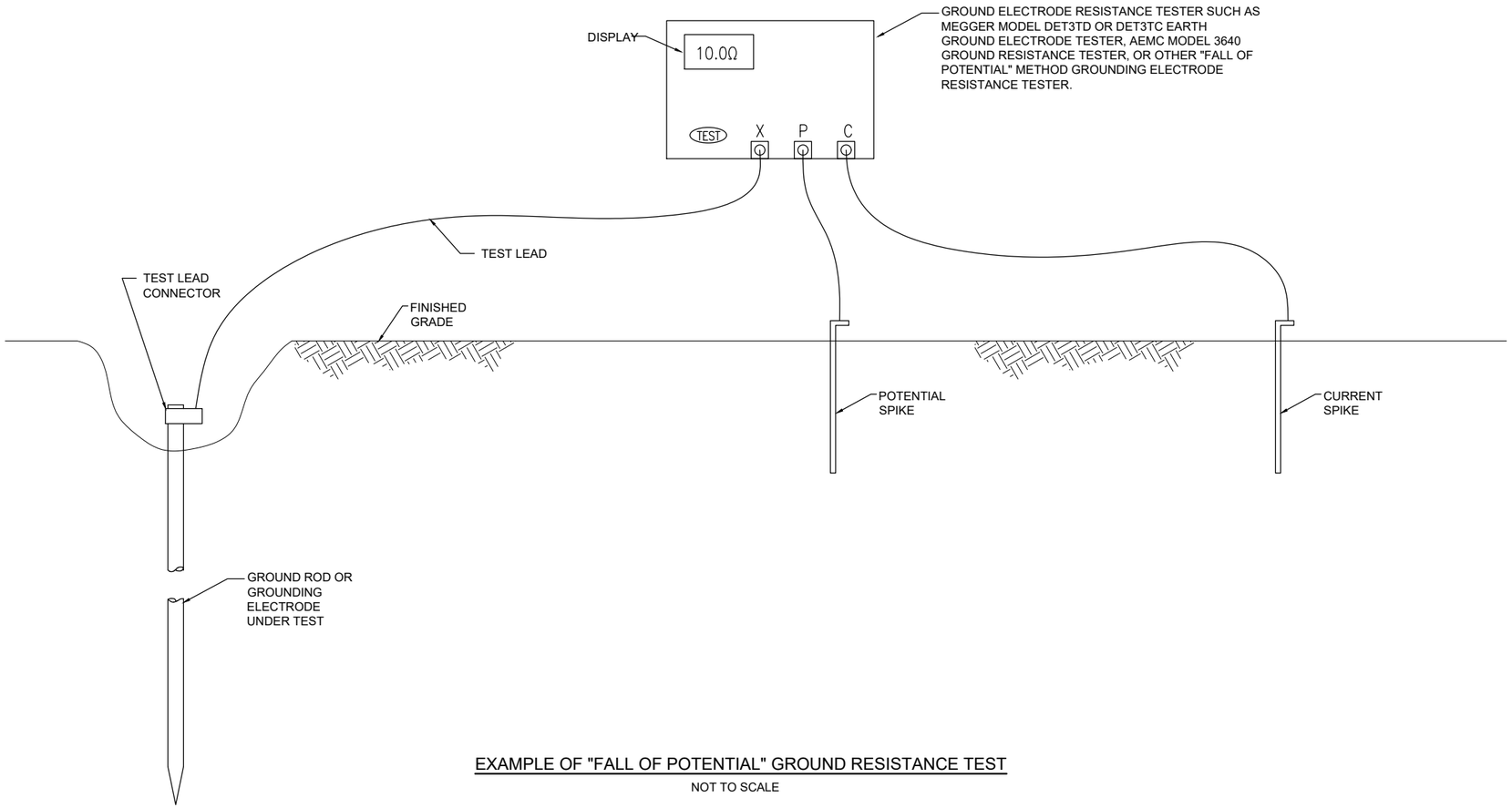

EXAMPLE OF "FALL OF POTENTIAL" GROUND RESISTANCE TEST

NOT TO SCALE

NOTES

1. CONTRACTOR SHALL TEST AND RECORD THE RESISTANCE FOR EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING ELECTRODE SYSTEMS. IF GROUND RESISTANCE EXCEEDS 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.

2. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, SPLICE CAN AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, 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.

3. GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

4. RECORD SITE CONDITIONS DURING TESTS.

5. "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

FOR BID

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DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

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DESIGN BY: KNL 3/25/2022
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SHEET TITLE

GROUND RESISTANCE TESTING DETAILS

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GROUNDING NOTES

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND FAA-STD-019f (LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT). THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:

1. FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING (UNLESS DETAILED OTHERWISE HEREIN). GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.

2. CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. ALSO REFER TO EOR-47643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS WHERE APPLICABLE. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER.

3. ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.

4. ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR APPROVED EQUAL.

5. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2020 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.

6. METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT

7. ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, DOSSERT CORPORATION, ILSCO CORPORATION, PENN-UNION CORPORATION, THOMAS & BETTS, OR APPROVED EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.

8. ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.

9. PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.

10. EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2020 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

11. ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2020 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2020 NEC 250-102.

12. IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.

13. PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.

14. EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.

15. ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, DOSSERT CORPORATION, ILSCO CORPORATION, PENN-UNION CORPORATION, THOMAS & BETTS, OR APPROVED EQUAL.

16. BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.

17. BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.

18. INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.

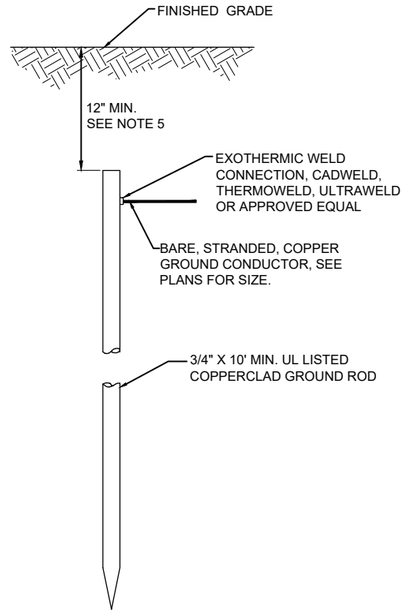
19. IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2020 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.

20. NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT UNTIL ALL POWER IS REMOVED FROM EQUIPMENT. WARN ALL PERSONNEL OF THE UNGROUNDED CONDITION OF THE EQUIPMENT. DISPLAY APPROPRIATE WARNING SIGNS, SUCH AS DANGER TAGS, TO WARN PERSONNEL OF THE POSSIBLE HAZARDS.

21. GROUNDING WORK AND MODIFICATIONS SHALL NOT BE PERFORMED DURING A THUNDERSTORM OR WHEN A THUNDERSTORM IS PREDICTED IN THE AREA

22. WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTIONS.

23. GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA FROM 100 PERCENT DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS AND THE STEEL PRODUCTS PROCUREMENT ACT.



10 FT. GROUND ROD

NOTES

1. TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
2. THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
3. COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
4. GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
5. TOP OF GROUND RODS FOR AIRFIELD LIGHT FIXTURES AND TAXI GUIDANCE SIGNS, SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
6. GROUND RODS FOR INDIVIDUAL SPLICE CANS SHALL BE 3/4-IN DIAMETER BY 10 FOOT LONG. WHERE GROUND RESISTANCE EXCEEDS 25 OHMS FURNISH AND INSTALL A SECOND GROUND ROD SPACED MINIMUM OF 10 FEET APART (ONE ROD LENGTH APART), AND CONNECT TO FIRST GND ROD.

GROUND RODS

NOT TO SCALE

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DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

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GROUNDING NOTES

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
M	MOTOR
#	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
XXX	EQUIPMENT, XXX = DEVICE DESCRIPTION
GND	GROUND BUS OR TERMINAL
S/N	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
N EM L	TRANSFER SWITCH
G	ENGINE GENERATOR SET

ELECTRICAL LEGEND - SCHEMATIC

	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
S*	STARTER COIL, * = STARTER NUMBER
OL	OVERLOAD RELAY CONTACT
CR*	CONTROL RELAY, * = CONTROL RELAY NUMBER
R*	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
OFF AUTO OX	2-POSITION SELECTOR SWITCH
OFF HAND AUTO XOO OOX	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
GND	GROUND BUS OR TERMINAL
S/N	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
P	S1 CUTOUT HANDLE REMOVED
I	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

ELECTRICAL ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
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 ABBREVIATIONS (CONTINUED)

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

AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS

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

NOTES:

1. 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.
2. KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING/CONSTRUCTION FOR USE AS A REFERENCE.
3. 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).
4. 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.
5. 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

6. SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
7. 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.
8. 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.
9. 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.
10. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE OR HANDHOLE.

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MVN
MT. VERNON OUTLAND AIRPORT

100 AVIATION DRIVE
MT VERNON, IL 62864

LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE	LICENSE
SIGNED: 4/22/2022	EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION	DES	DWN	REV

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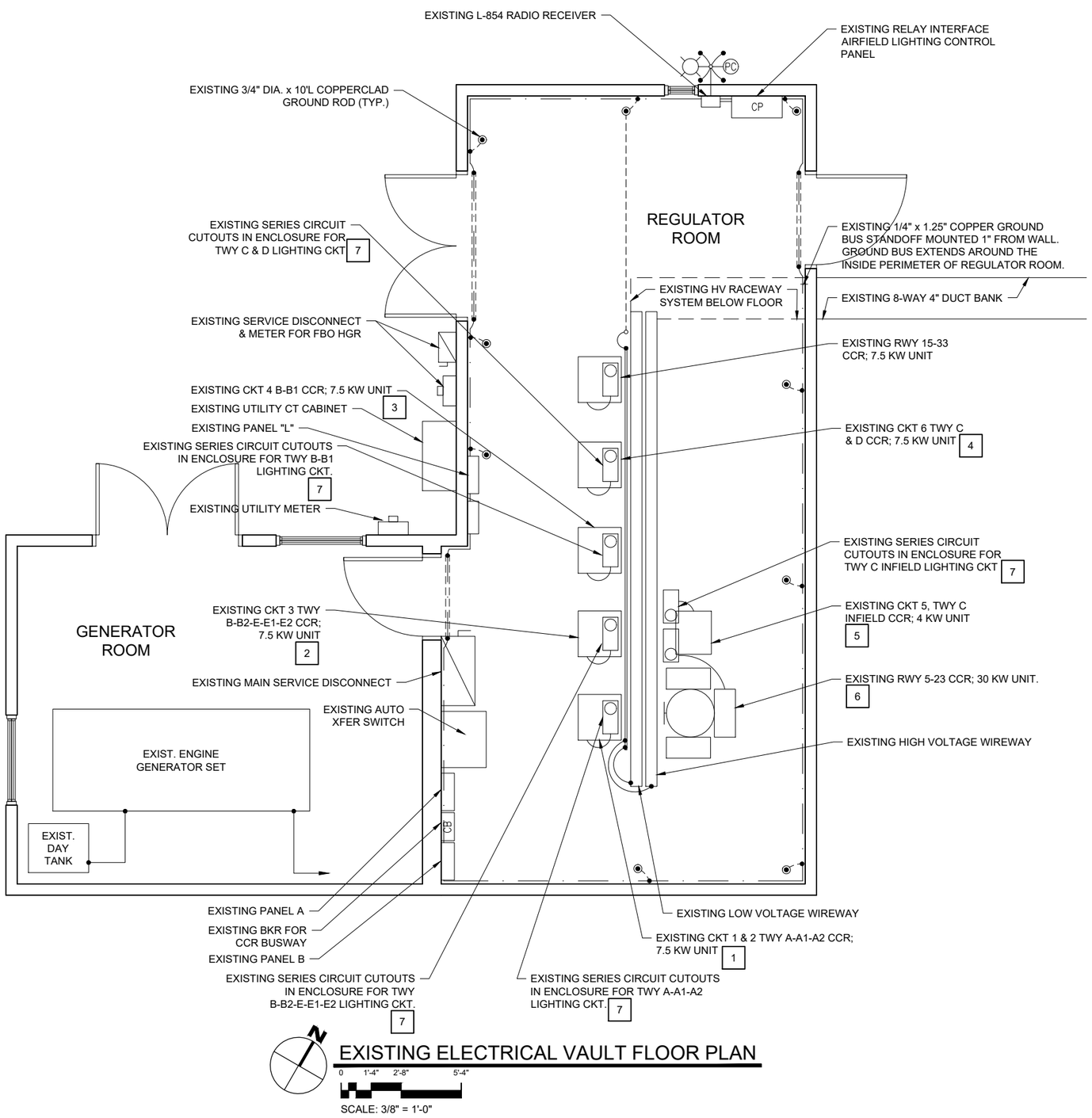
ELECTRICAL LEGEND AND ABBREVIATIONS



EXISTING ELECTRICAL VAULT FLOOR PLAN

SCALE: 3/8" = 1'-0"

GENERAL NOTES:

1. CAUTION THE AIRPORT ELECTRICAL VAULT HAS BEEN OBSERVED TO HAVE BROWN RECLUSE SPIDERS AND WASP NESTS. SPIDERS AND WASPS HAVE BEEN OBSERVED INSIDE ELECTRICAL EQUIPMENT AND ENCLOSURES.
2. CONTRACTOR SHALL COORDINATE WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS WITH THE AIRPORT DIRECTOR/MANAGER AND THE RESIDENT PROJECT REPRESENTATIVE. AND 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).
3. CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONATIONS.
4. 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.
5. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
6. EACH ACTIVE CCR SERVING THE RESPECTIVE WORK AREAS OF THE PROJECT, SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATION, ADDITIONS AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD LIGHTING REPLACEMENTS AND VAULT 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. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE PROJECT ENGINEER.
7. EXISTING SERIES CIRCUIT CUTOUTS DESIGNATED FOR REPLACEMENT SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT, ANY ITEMS NOT SALVAGED BY THE AIRPORT SHALL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE.

KEYED NOTES:

1. EXISTING CKT 1 & 2 TWY A-A1-A2 CCR SHALL BE REMOVED AND REPLACED WITH A NEW FERRORESONANT FAA L-828, CLASS 1; 6.6 AMP OUTPUT CURRENT, STYLE 1; THREE BRIGHTNESS STEPS, 7.5 KW, 208 VAC INPUT VOLTAGE CONSTANT CURRENT REGULATOR. THIS REGULATOR WILL SERVE NEW TAXIWAY "A" LIGHTING CIRCUIT.
2. EXISTING CKT 3 TWY B-B2-E-E1-E2 CCR SHALL BE REMOVED AND REPLACED WITH A NEW FERRORESONANT FAA L-828, CLASS 1; 6.6 AMP OUTPUT CURRENT, STYLE 1; THREE BRIGHTNESS STEPS, 7.5 KW, 208 VAC INPUT VOLTAGE CONSTANT CURRENT REGULATOR. THIS REGULATOR WILL SERVE NEW TAXIWAY "B" LIGHTING CIRCUIT.
3. EXISTING CKT 4 TWY B-B1 CCR TO REMAIN. THIS REGULATOR WILL SERVE NEW TAXIWAY "C" LIGHTING CIRCUIT.
4. EXISTING CKT 6 TWY C AND D CCR TO REMAIN, THIS REGULATOR WILL SERVE NEW TAXIWAY "D" LIGHTING CIRCUIT.
5. EXISTING CKT 5 TWY C INFIELD CCR TO REMAIN, THIS REGULATOR WILL SERVE TAXIWAY TAXIWAY "E" LIGHTING CIRCUIT.
6. EXISTING RWY 5-23 CCR TO REMAIN. REPLACEMENT CCR IS NOT IN CONTRACT.
7. EXISTING S-1 CUTOUTS FOR EACH TAXIWAY 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.

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.

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IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
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EXISTING ELECTRICAL VAULT FLOOR PLAN

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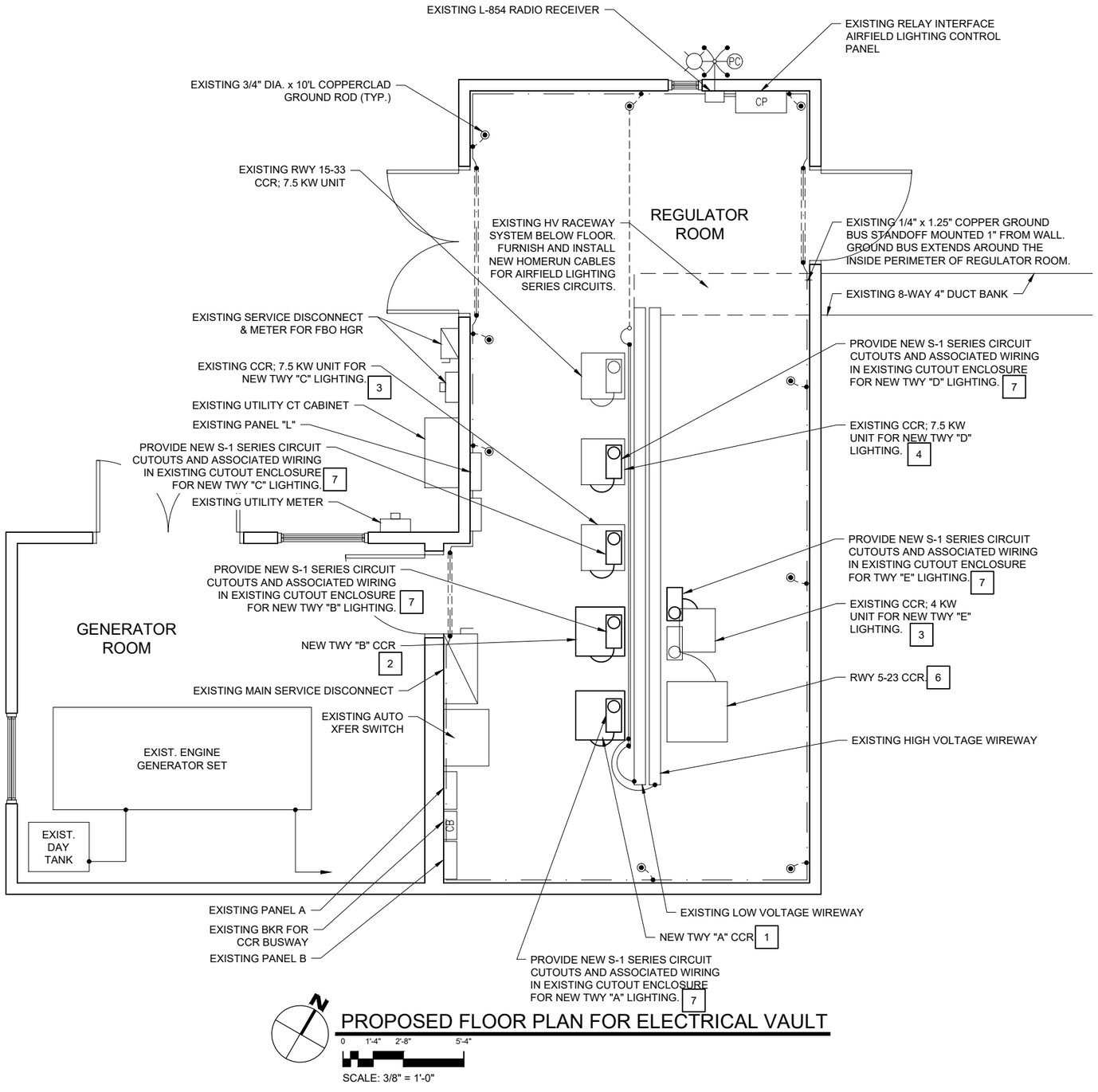

PROPOSED FLOOR PLAN FOR ELECTRICAL VAULT

0 1'-4" 2'-8" 5'-4"

SCALE: 3/8" = 1'-0"

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 CKT 1 & 2 TWY A-A1-A2 CCR SHALL BE REMOVED AND REPLACED WITH A NEW FERRORESONANT FAA L-828, CLASS 1; 6.6 AMP OUTPUT CURRENT, STYLE 1; THREE BRIGHTNESS STEPS, 7.5 KW, 208 VAC INPUT VOLTAGE CONSTANT CURRENT REGULATOR. THIS REGULATOR WILL SERVE NEW TAXIWAY "A" LIGHTING CIRCUIT.
2. EXISTING CKT 3 TWY B-B-E-E1-E2 CCR SHALL BE REMOVED AND REPLACED WITH A NEW FERRORESONANT FAA L-828, CLASS 1; 6.6 AMP OUTPUT CURRENT, STYLE 1; THREE BRIGHTNESS STEPS, 7.5 KW, 208 VAC INPUT VOLTAGE CONSTANT CURRENT REGULATOR. THIS REGULATOR WILL SERVE NEW TAXIWAY "B" LIGHTING CIRCUIT.
3. EXISTING CKT 4 TWY B-B1 CCR TO REMAIN. THIS REGULATOR WILL SERVE NEW TAXIWAY "C" LIGHTING CIRCUIT.
4. EXISTING CKT 6 TWY C AND D CCR TO REMAIN, THIS REGULATOR WILL SERVE NEW TAXIWAY "D" LIGHTING CIRCUIT.
5. EXISTING CKT 5 TWY C INFIELD CCR TO REMAIN, THIS REGULATOR WILL SERVE TAXIWAY TAXIWAY "E" LIGHTING CIRCUIT.
6. EXISTING RWY 5-23 CCR TO REMAIN. REPLACEMENT CCR IS NOT IN CONTRACT.
7. EXISTING S-1 CUTOUTS FOR EACH TAXIWAY 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.

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.

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IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

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		DES	DWN	REV

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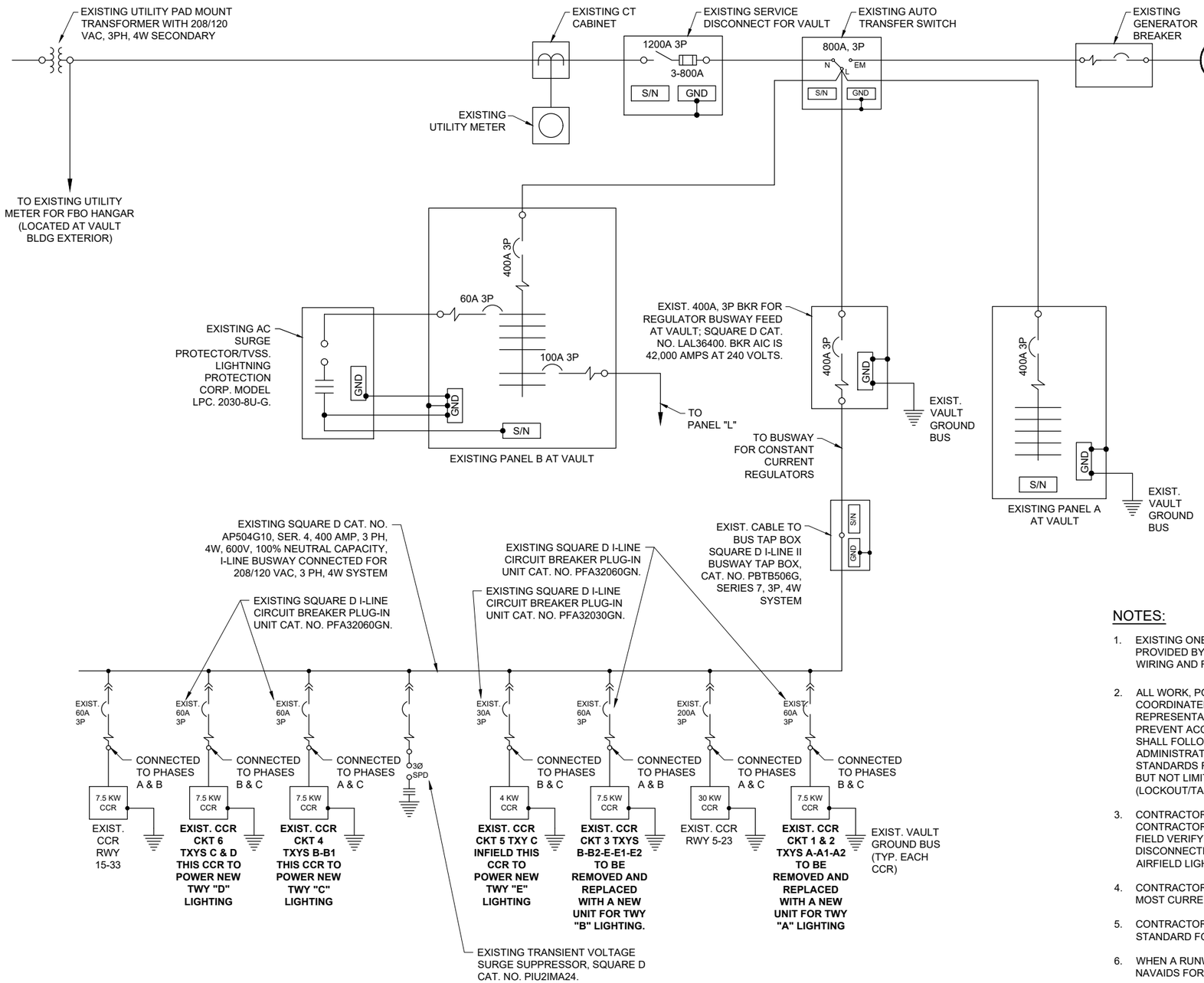
PROPOSED FLOOR PLAN FOR ELECTRICAL VAULT



EXISTING ELECTRICAL ONE LINE DIAGRAM FOR VAULT

NOTES:

1. 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.
2. 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).
3. 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.
4. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
5. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
6. WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
7. WHEN A TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING SHALL BE SHUT OFF.

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EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT

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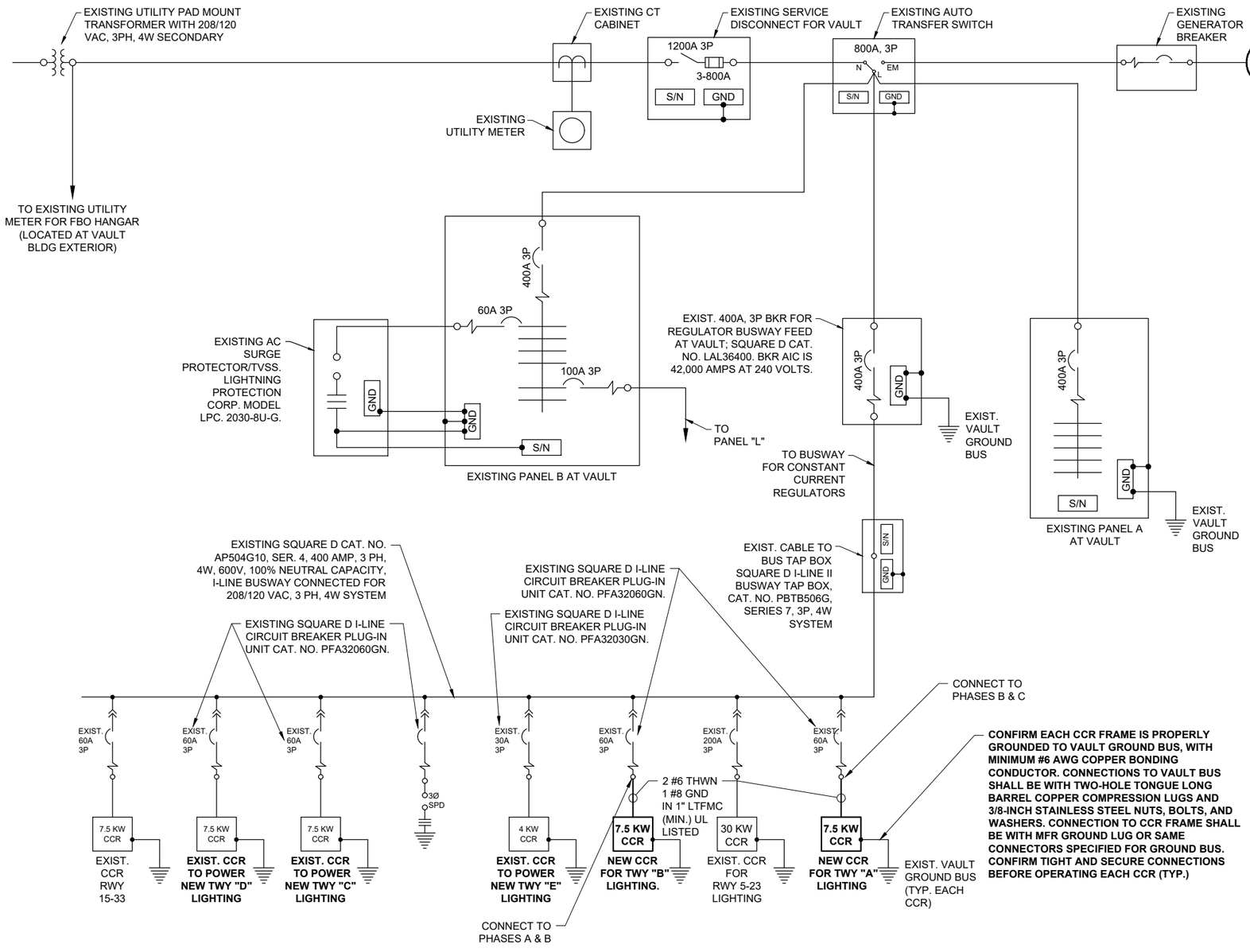

PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR TAXIWAYS

NOTES

1. ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).

2. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

3. ALL CONDUCTORS/WIRING SHALL BE COPPER.

4. 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

5. 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.

6. 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.

7. 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.

8. EQUIPMENT AND MATERIALS NOT LABELED AS "EXISTING" ARE NEW.

9. CONTRACTOR IS REQUIRED TO HAVE AN APPLICABLE ELECTRICAL CONTRACTOR LICENSE AND OBTAIN REQUIRED PERMITS FROM THE RESPECTIVE AUTHORITY OF JURISDICTION.

10. 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.

11. 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.

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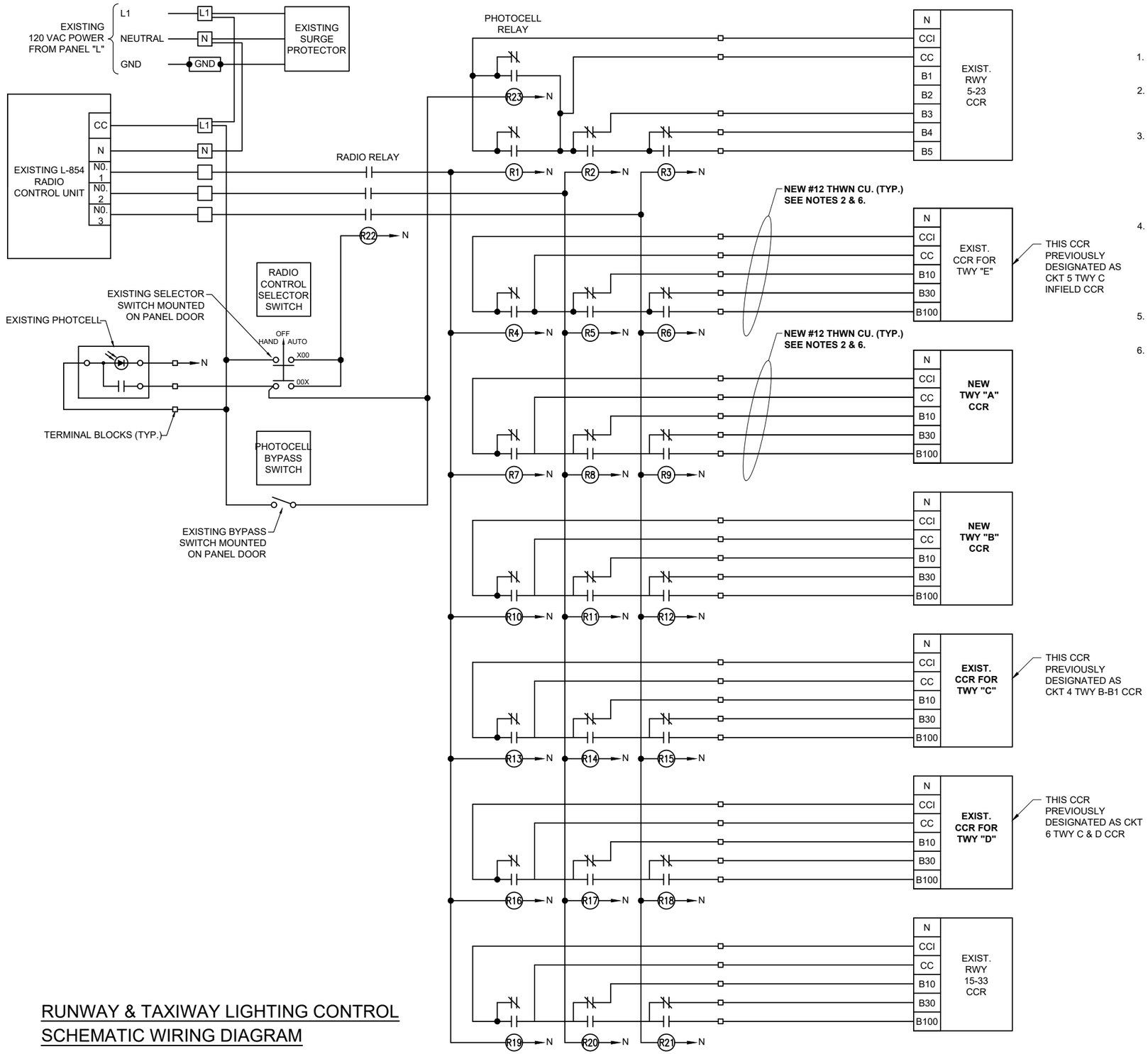
PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR TAXIWAYS



RUNWAY & TAXIWAY LIGHTING CONTROL SCHEMATIC WIRING DIAGRAM

NOTES:

1. RELAY INTERFACE CONTROL PANEL IS EXISTING, MANUFACTURED BY UNIVERSE, INC., NORMAL, IL..
2. EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE. ALL PANEL INTERIOR CONTROL CABLE SHALL BE MINIMIM 16 AWG, COPPER, 600 VOLT CABLE.
3. 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
4. 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
5. EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
6. 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%)

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MT VERNON, IL 62864

LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: JUNE 30, 2022
PROJECT NO: 21A0108D
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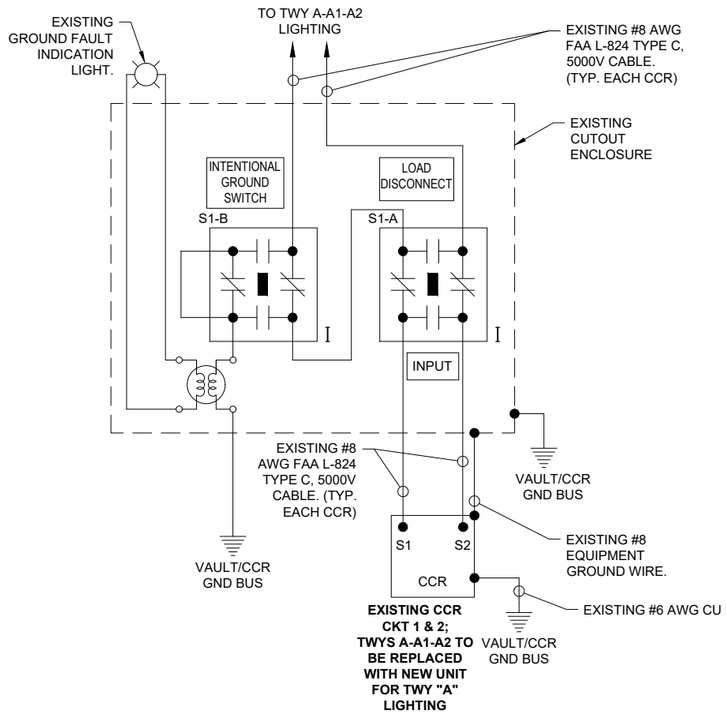
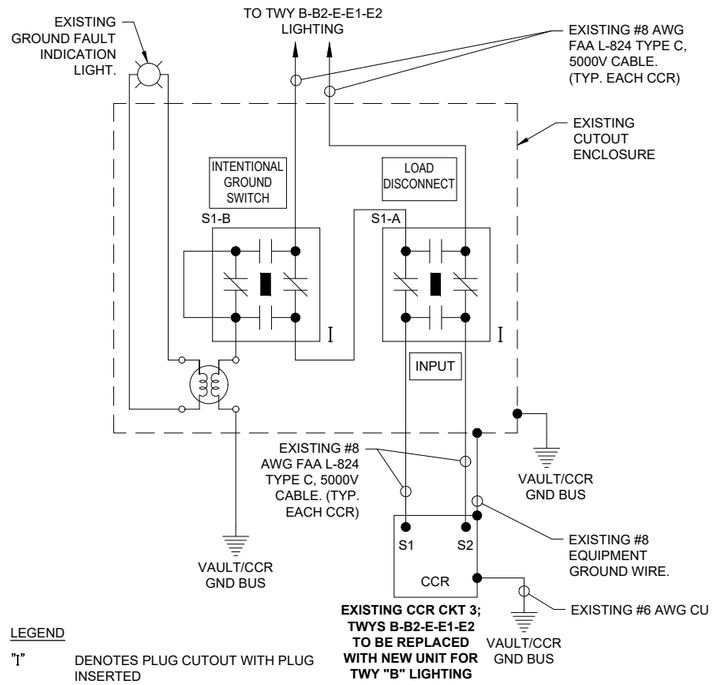
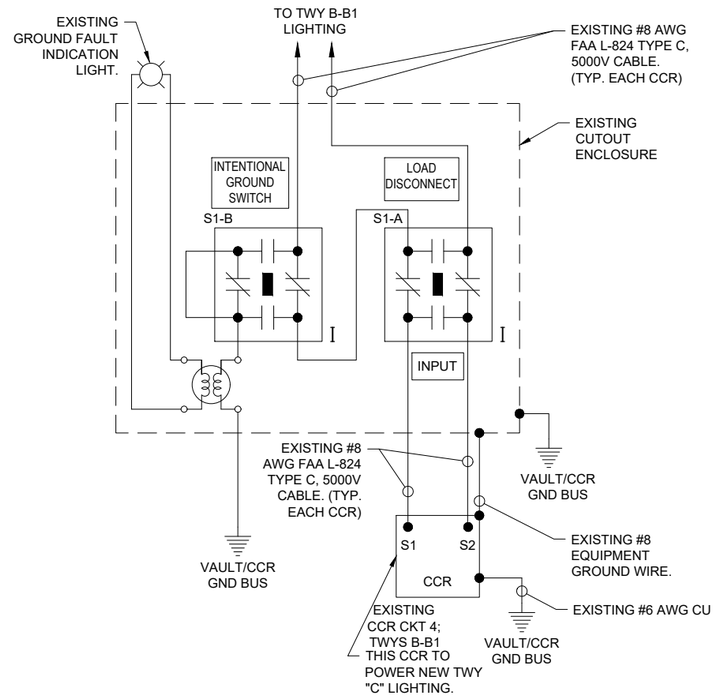
SHEET TITLE

RWY AND TWY LIGHTING CONTROL SCHEMATIC WIRING DIAGRAM







LEGEND

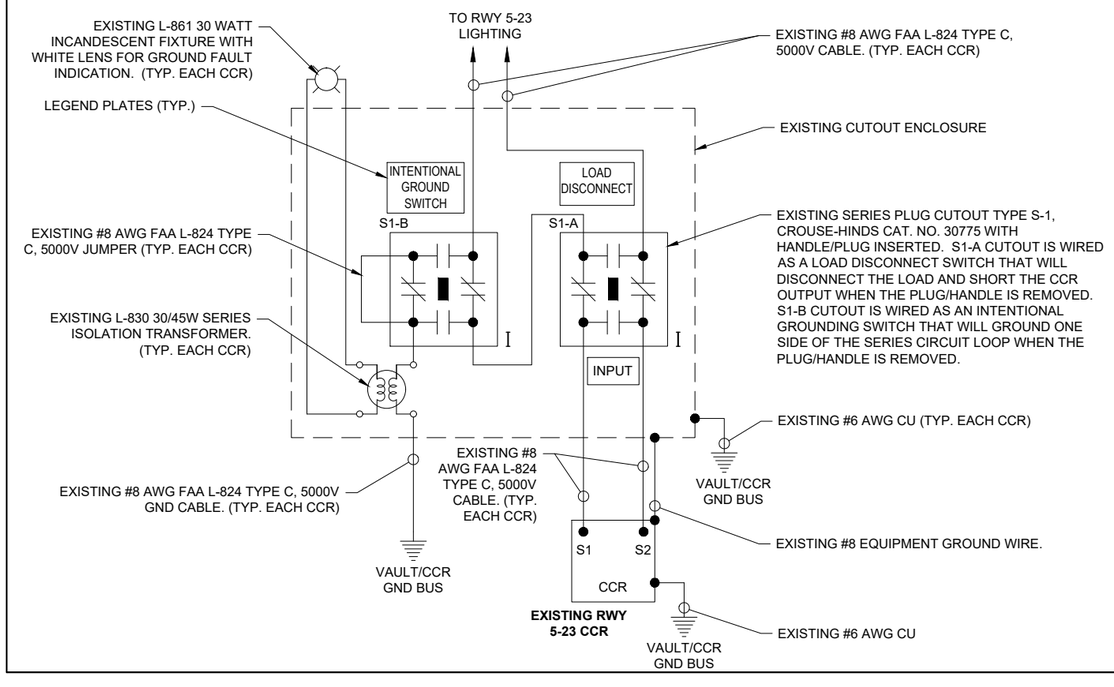
"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"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:

1. 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).
2. EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
3. 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.
4. IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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 MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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REVIEWED BY: BSS 4/20/2022

SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATICS RWY 5-23 & TAXIWAYS

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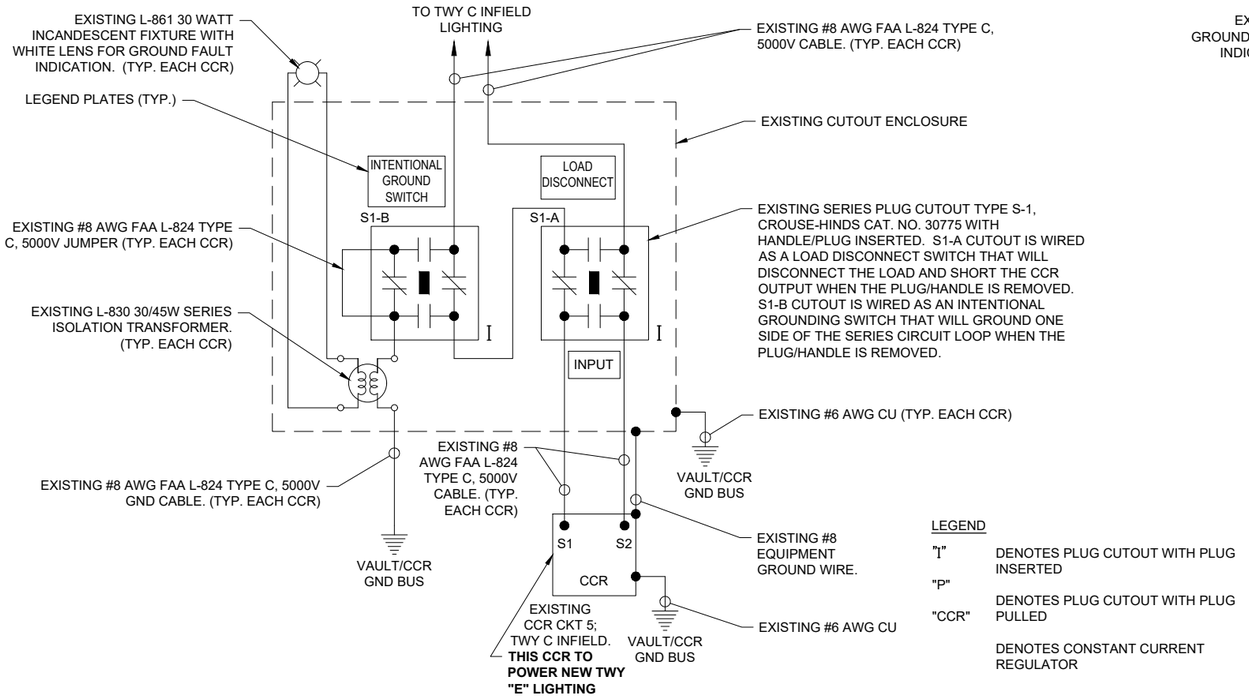
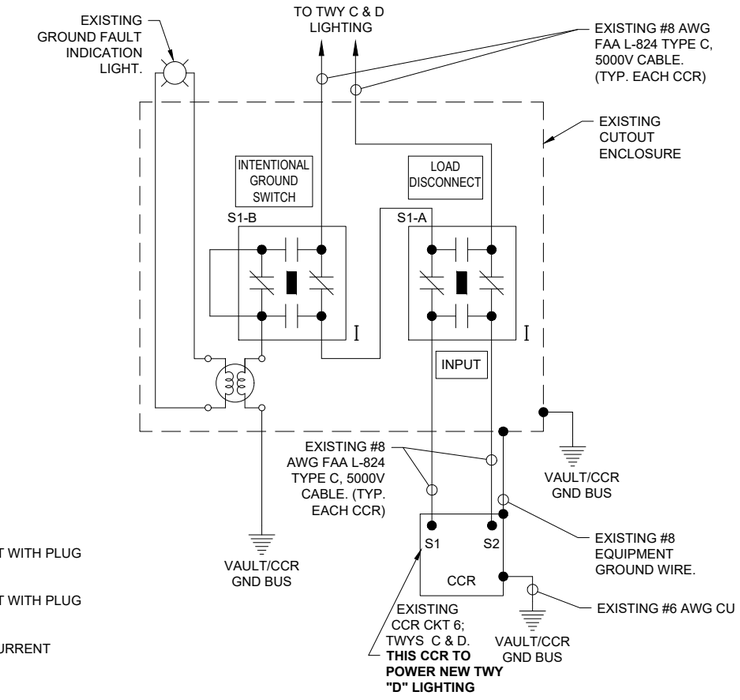
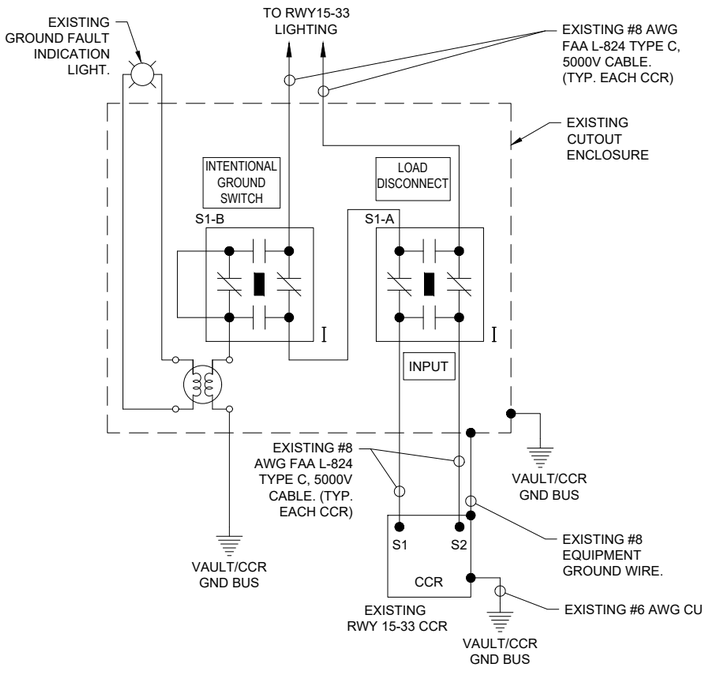


LEGEND

"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:

1. 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).
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9. 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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KEVIN N. LIGHTFOOT
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STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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DRAWN BY: CWS 3/28/2022
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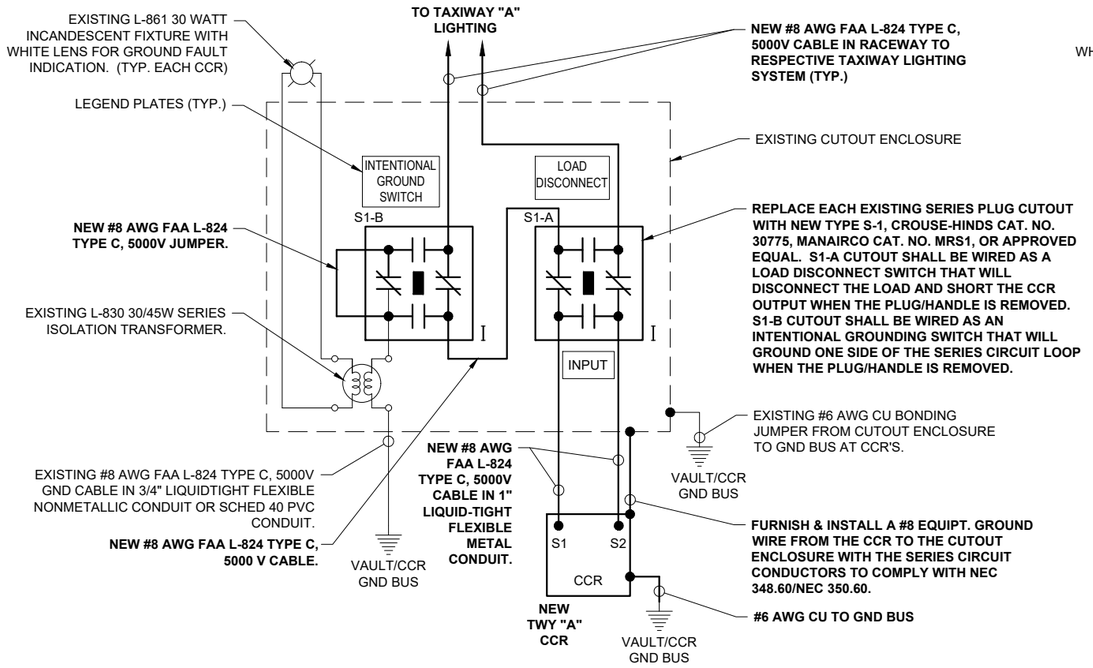
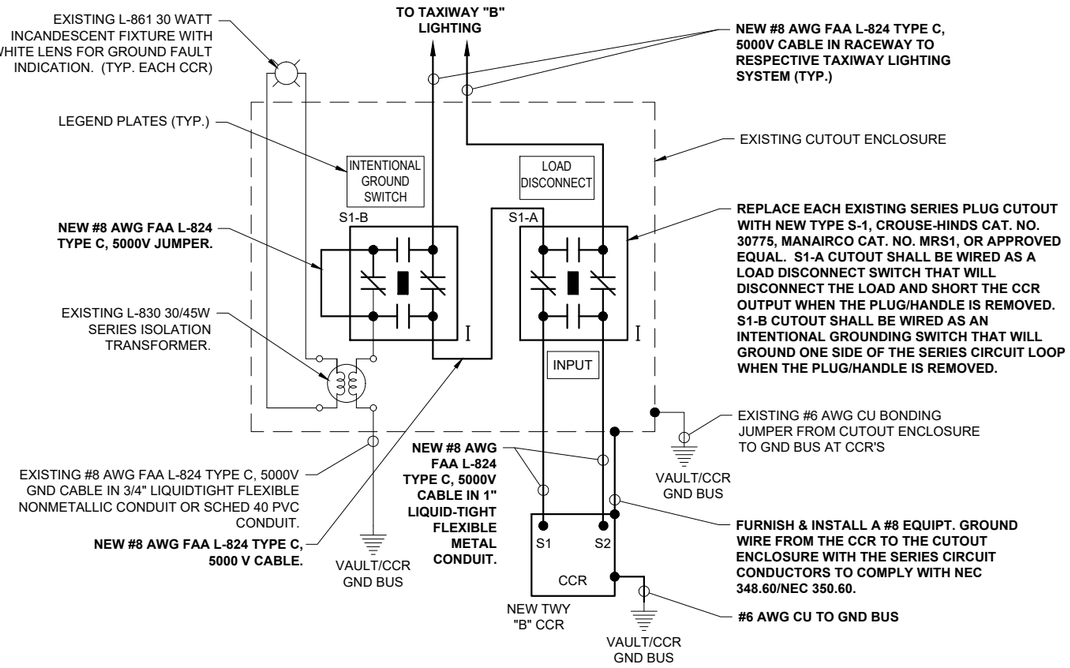
SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATICS RWY 15-33 & TAXIWAYS





PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR TAXIWAYS A & B

LEGEND

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

NOTES:

1. 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.
2. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION AND THE RUNWAY OR TAXIWAY SERVED.
3. 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.
4. 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
5. 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.
6. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
7. PROVIDE UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE.
8. BOND ALL REGULATORS TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER FOR EACH REGULATOR.

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REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

NO.	DATE	DESCRIPTION		
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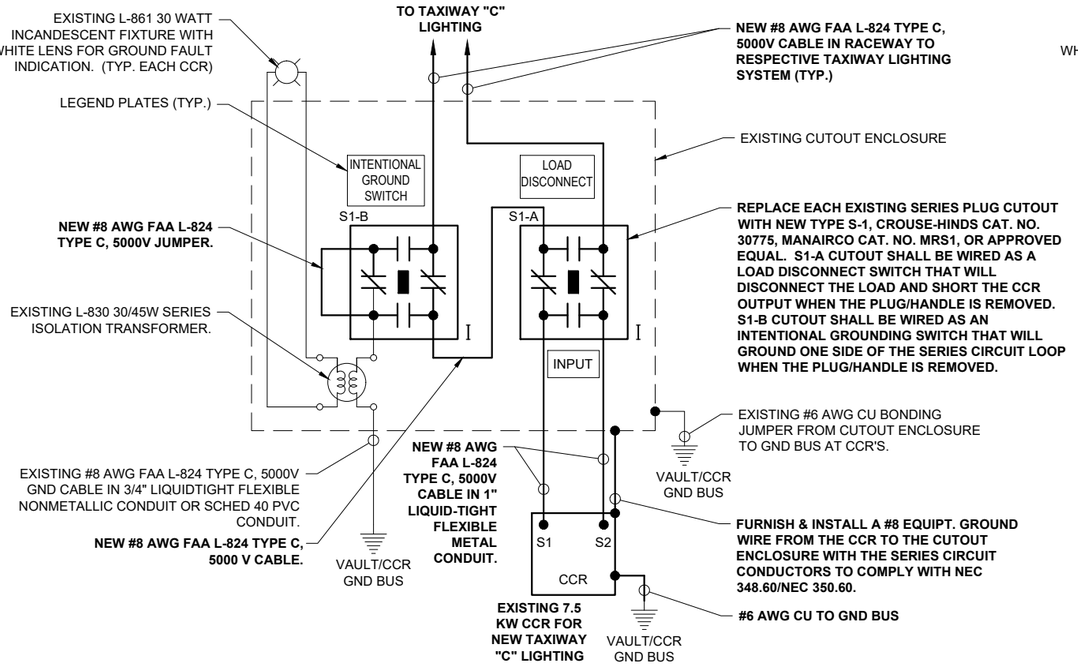
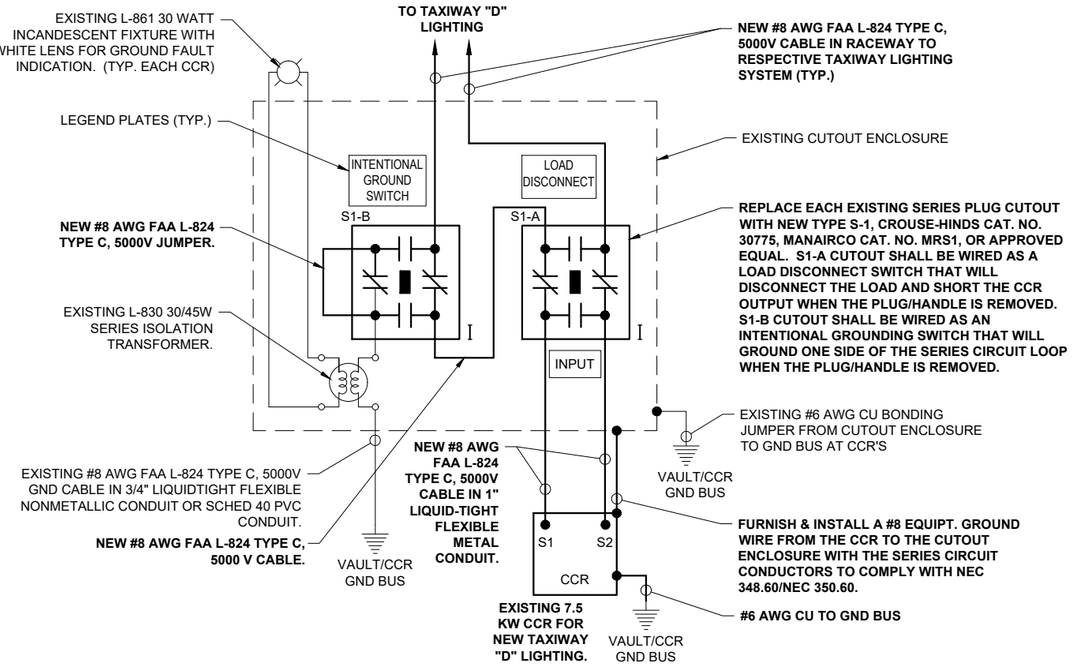
REVIEWED BY: BSS 4/20/2022

SHEET TITLE

PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR TAXIWAYS A & B





PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR TAXIWAYS C & D

LEGEND

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

NOTES:

1. 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.
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5. 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.
6. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
7. PROVIDE UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE.
8. BOND ALL REGULATORS TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER FOR EACH REGULATOR.

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ISSUE: JUNE 30, 2022
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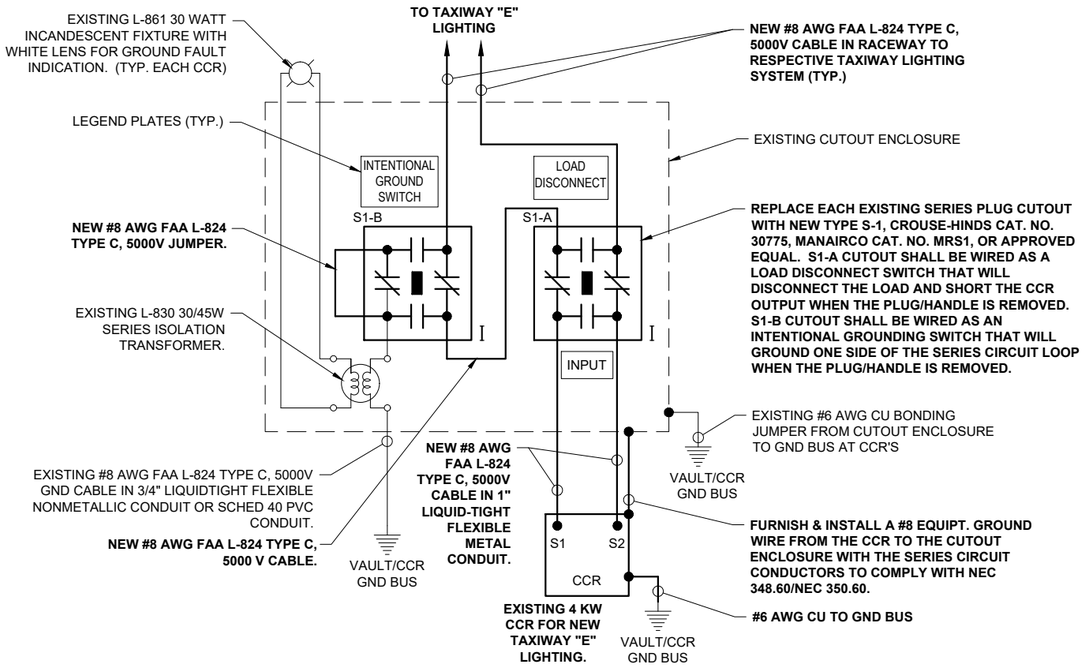
SHEET TITLE

PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR TAXIWAYS C & D



PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR TAXIWAY E

LEGEND

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

NOTES:

1. 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.
2. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION AND THE RUNWAY OR TAXIWAY SERVED.
3. 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.
4. 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
5. 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.
6. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
7. PROVIDE UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE.
8. BOND ALL REGULATORS TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER FOR EACH REGULATOR.

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LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

DATE SIGNED: 4/22/2022
LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

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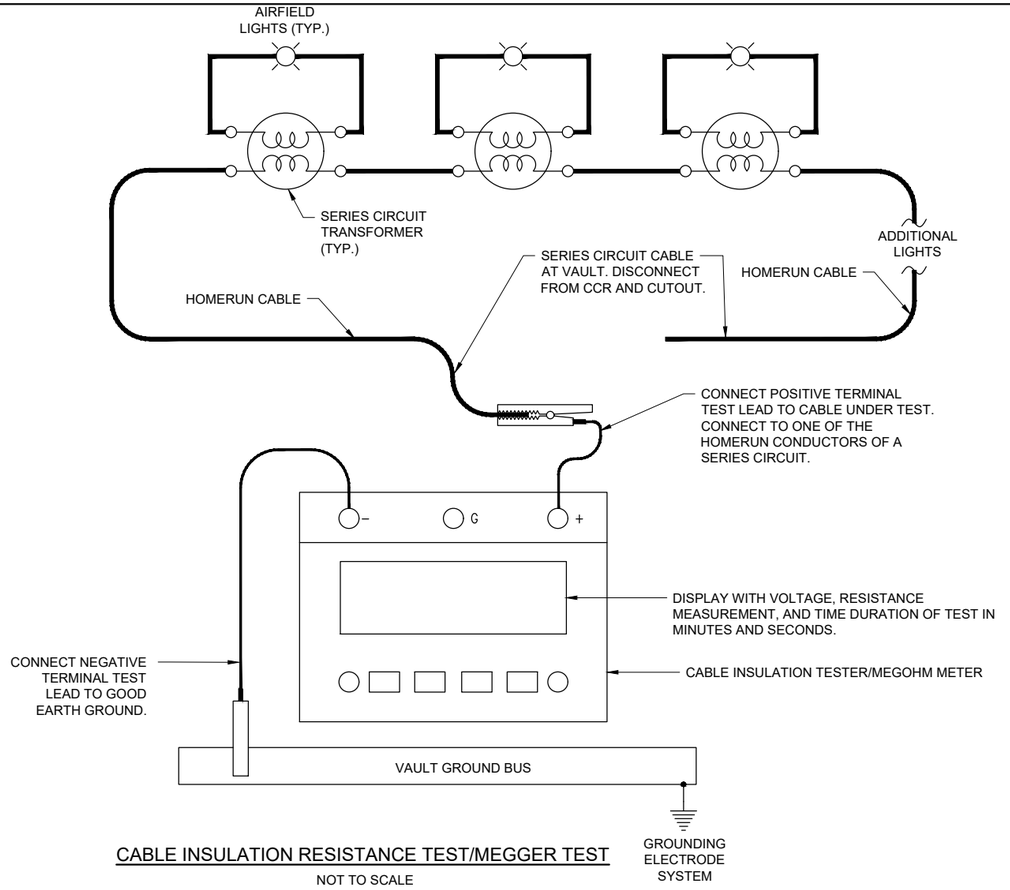
PROPOSED HIGH VOLTAGE WIRING SCHEMATICS FOR TAXIWAY E



CABLE INSULATION RESISTANCE TEST/MEGGER TEST

NOT TO SCALE

CABLE INSULATION RESISTANCE TEST (MEGGER TEST) NOTES

1. PRIOR TO BEGINNING EXCAVATIONS, AIRFIELD LIGHTING MODIFICATIONS, CABLE INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS, ALL EXISTING SERIES CIRCUIT LIGHTING CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE RESPECTIVE AIRPORT ELECTRICAL VAULT.

2. AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES, AND/OR OTHER WORK AND ADDITIONS HAVE BEEN COMPLETED ALL EXISTING SERIES CIRCUIT LIGHTING CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE RESPECTIVE AIRPORT ELECTRICAL VAULT.

3. THE CONTRACTOR IS RESPONSIBLE TO EMPLOY THE SERVICES OF PERSONNEL QUALIFIED, FAMILIAR WITH, AND TRAINED TO PERFORM THE RESPECTIVE TESTS, AND QUALIFIED TO WORK ON 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.

4. INSULATION RESISTANCE TESTING EQUIPMENT FOR USE WITH 5,000 VOLT SERIES CIRCUIT CABLES SHALL USE AN INSULATION RESISTANCE TESTER CAPABLE OF TESTING THE CABLES AT 5,000 VOLTS. OLDER SERIES CIRCUIT CABLES AND/OR CABLES IN POOR CONDITION MAY REQUIRE THE TEST VOLTAGE TO BE PERFORMED AT A VOLTAGE LOWER THAN 5,000 VOLTS (EXAMPLE 1,000 VOLTS, 500 VOLTS, OR LESS THAN 500 VOLTS). THE RESPECTIVE TEST VOLTAGE SHALL BE RECORDED FOR EACH CABLE INSULATION RESISTANCE TEST RESULT.

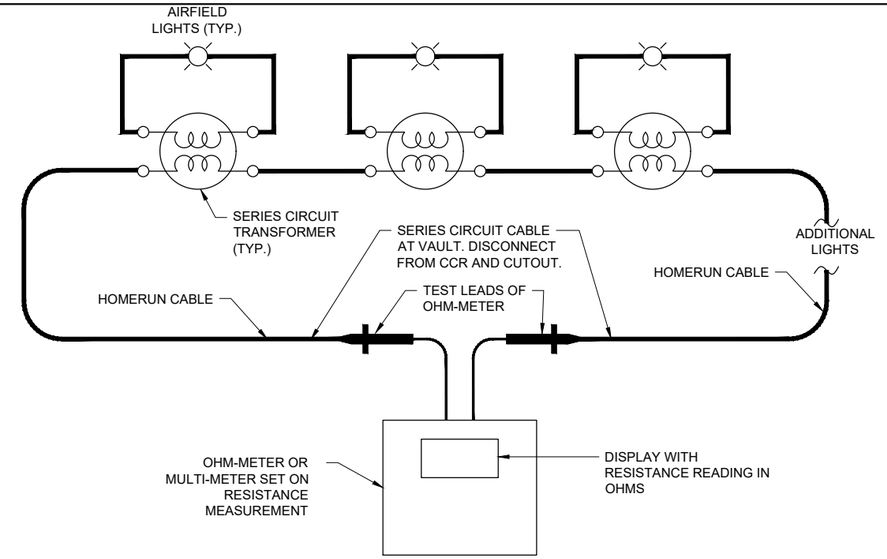
5. INSULATION RESISTANCE TESTING EQUIPMENT FOR USE WITH 600 VOLT RATED CABLES SHALL USE A 500 VOLT INSULATION RESISTANCE TESTER. THE RESPECTIVE TEST VOLTAGE SHALL BE RECORDED FOR EACH CABLE INSULATION RESISTANCE TEST RESULT.

6. IT IS RECOMMENDED TO USE THE SAME INSULATION RESISTANCE TEST EQUIPMENT THROUGHOUT THE PROJECT TO ENSURE RELIABLE COMPARATIVE READINGS AT THE BEGINNING OF THE PROJECT AND AT THE COMPLETION OF THE PROJECT.

7. DISCONNECT THE AIRFIELD LIGHTING SERIES CIRCUIT CABLES FROM THE CONSTANT CURRENT REGULATOR WHEN PERFORMING CABLE INSULATION RESISTANCE TESTS (MEGGER TESTS). TEST THE CABLES THAT GO TO THE AIRFIELD FOR THE RESPECTIVE AIRFIELD LIGHTING SERIES CIRCUIT. CONNECT THE CABLE INSULATION RESISTANCE TESTER TO ONE OF THE AIRFIELD LIGHTING SERIES CIRCUIT CABLES AND TO A GOOD GROUND IN THE AIRPORT ELECTRICAL VAULT SUCH AS THE AIRPORT VAULT GROUND BUS. CONDUCT THE CABLE INSULATION RESISTANCE TEST ON EACH RESPECTIVE CABLE FOR NOT LESS THAN 90 SECONDS. RECORD THE TEST RESULTS AT THE END OF THE TIME DURATION FOR THE TEST.

8. FAA ADVISORY CIRCULAR 150/5340-26C MAINTENANCE OF AIRPORT VISUAL AID FACILITIES PROVIDES GUIDANCE ON INSULATION RESISTANCE TESTS. ALSO REFER TO THE USER MANUAL FOR THE RESPECTIVE CABLE INSULATION RESISTANCE TESTER. REASONABLY NEW SERIES CIRCUIT CABLES AND TRANSFORMERS WITH GOOD CONNECTIONS SHOULD READ 500 MEGA-OHMS TO 1,000 MEGA-OHMS OR HIGHER. THE READINGS SHOULD DECREASE WITH AGE. THE RESISTANCE VALUE DECLINES OVER THE SERVICE LIFE OF THE CIRCUIT; A 10-20 PERCENT DECLINE PER YEAR MAY BE CONSIDERED NORMAL. A YEARLY DECLINE OF 50 PERCENT (4 PERCENT MONTHLY) OR GREATER INDICATES THE EXISTENCE OF A PROBLEM, SUCH AS A HIGH RESISTANCE GROUND, SERIOUS 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.

9. BASED ON INFORMATION IN FAA AC NO. 150/5340-26C MAINTENANCE OF AIRPORT VISUAL AID FACILITIES, THE CABLE INSULATION RESISTANCE VALUE INEVITABLY DECLINES OVER THE SERVICE LIFE OF THE CIRCUIT; A 10-20 PERCENT DECLINE PER YEAR MAY BE CONSIDERED NORMAL. IN THE EVENT THAT THE CABLE INSULATION RESISTANCE READINGS HAVE DECLINED MORE THAN 2 PERCENT PER MONTH IT MIGHT INDICATE CABLE DAMAGE DUE TO LIGHTNING OR DAMAGE AS A RESULT OF CONTRACTOR OPERATIONS. WHERE THE CABLE INSULATION RESISTANCE READINGS HAVE DECLINED MORE THAN 2 PERCENT PER MONTH OVER THE PROJECT CONSTRUCTION DURATION AS A RESULT OF CONTRACTOR OPERATIONS, CONTRACTOR WILL NEED TO INVESTIGATE, ADDRESS, AND REPAIR THE RESPECTIVE CABLE CIRCUITS.



MEASURE RESISTANCE OF SERIES CIRCUIT LOOP.

NOT TO SCALE

SERIES CIRCUIT LOOP RESISTANCE MEASUREMENT NOTES

1. PRIOR TO BEGINNING EXCAVATIONS, AIRFIELD LIGHTING MODIFICATIONS, CABLE INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS, THE RESPECTIVE SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT.

2. AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES, AND/OR OTHER WORK AND ADDITIONS HAVE BEEN COMPLETED THE RESPECTIVE SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT.

3. ALL EXISTING SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT. THE RESISTANCE OF THE SERIES CIRCUIT LOOP WITH CONNECTIONS USING #8 AWG COPPER CONDUCTOR SHOULD BE APPROXIMATELY 0.8 TO 1 OHM PER THOUSAND FEET OF CABLE LENGTH. THE RESISTANCE OF THE SERIES CIRCUIT LOOP WITH CONNECTIONS USING #6 AWG COPPER CONDUCTOR SHOULD BE APPROXIMATELY 0.5 TO 0.7 OHM PER THOUSAND FEET OF CABLE LENGTH. THE NUMBER OF SERIES CIRCUIT TRANSFORMERS AND CONNECTIONS WILL AFFECT THE OVERALL RESISTANCE OF THE SERIES CIRCUIT LOOP AND THEREFORE THE MEASUREMENTS MIGHT BE SLIGHTLY HIGHER THAN THE CALCULATED RESISTANCE FOR THE RESPECTIVE LENGTH OF CABLE.

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REPLACE MEDIUM INTENSITY TAXIWAY LIGHTS (MITL) ON ALL TAXIWAYS ON THE AIRFIELD

IDA No: MVN-4950
SBG No. 3-17-SBGP-TBD
Contract No. MV067

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SERIES CIRCUIT CABLE TESTING DETAILS

LEGEND PLATE SCHEDULE

DEVICE	LABEL
TAXIWAY "A" CCR	TAXIWAY A LIGHTING CCR
TAXIWAY "A" SERIES CIRCUIT CUTOUT ENCLOSURE	TAXIWAY A LIGHTING CUTOUTS
TAXIWAY "B" CCR	TAXIWAY B LIGHTING CCR
TAXIWAY "B" SERIES CIRCUIT CUTOUT ENCLOSURE	TAXIWAY B LIGHTING CUTOUTS
TAXIWAY "C" CCR	TAXIWAY C LIGHTING CCR
TAXIWAY "C" SERIES CIRCUIT CUTOUT ENCLOSURE	TAXIWAY C LIGHTING CUTOUTS
TAXIWAY "D" CCR	TAXIWAY D LIGHTING CCR
TAXIWAY "D" SERIES CIRCUIT CUTOUT ENCLOSURE	TAXIWAY D LIGHTING CUTOUTS
TAXIWAY "E" CCR	TAXIWAY E LIGHTING CCR
TAXIWAY "E" SERIES CIRCUIT CUTOUT ENCLOSURE	TAXIWAY E LIGHTING CUTOUTS

NOTES:

1. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.

2. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "ARC-FLASH HAZARD WARNING".

"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".

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LEGEND PLATE SCHEDULES