



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No: 3-17-SBGP-156/162/171

Contract No.: JA040

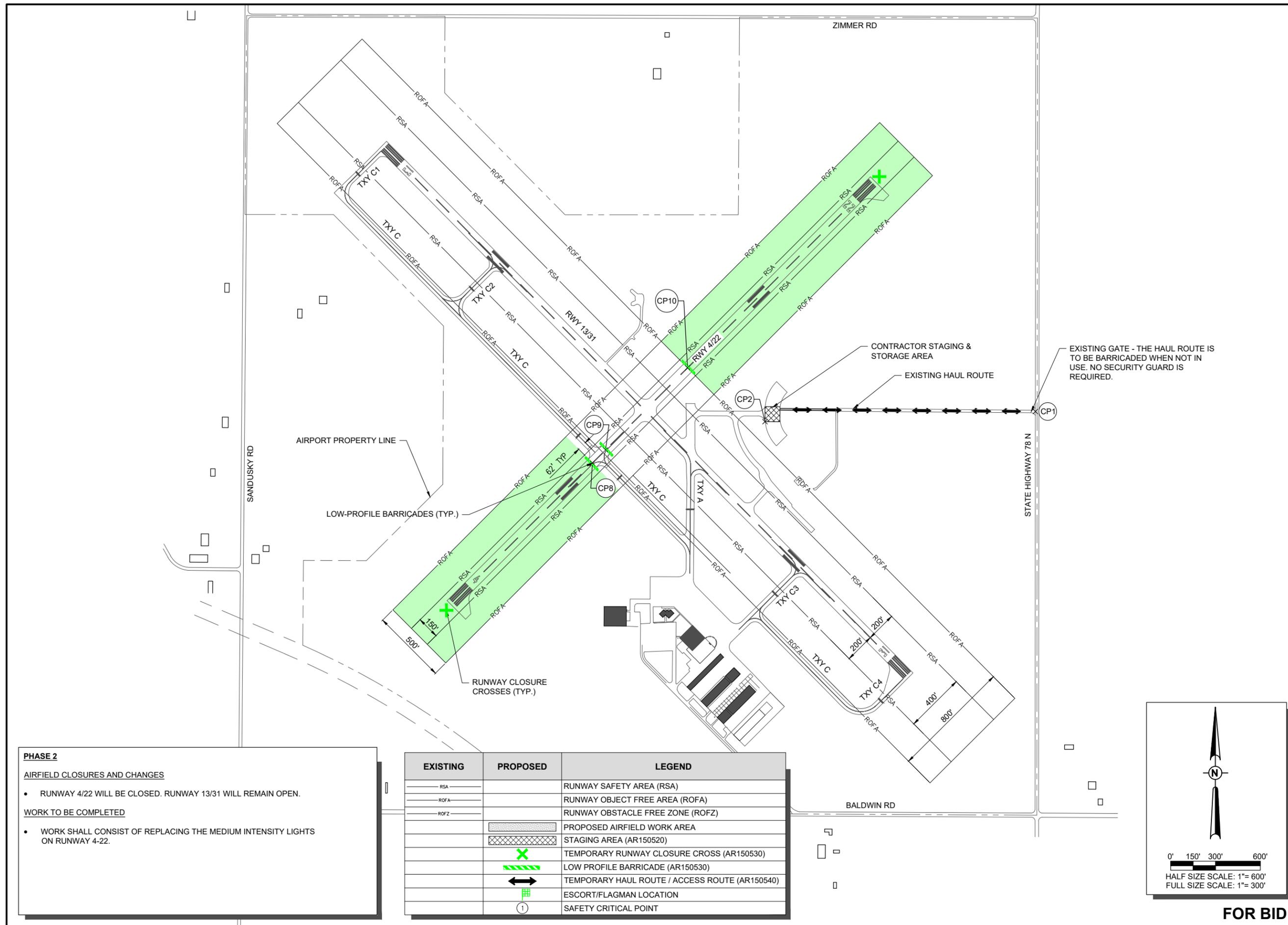
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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: C-104-CSPP.DWG
DESIGN BY: JMO 5/4/2022
DRAWN BY: HLE 5/4/2022
REVIEWED BY: JMO 6/8/2022

SHEET TITLE

SAFETY PLAN - PHASE 2



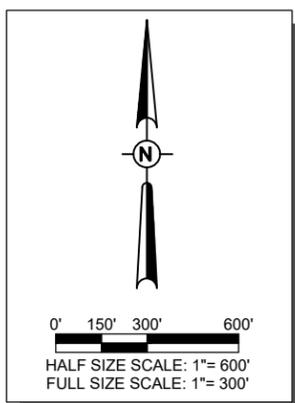
PHASE 2
AIRFIELD CLOSURES AND CHANGES

- RUNWAY 4/22 WILL BE CLOSED. RUNWAY 13/31 WILL REMAIN OPEN.

WORK TO BE COMPLETED

- WORK SHALL CONSIST OF REPLACING THE MEDIUM INTENSITY LIGHTS ON RUNWAY 4-22.

| EXISTING | PROPOSED | LEGEND |
|----------|---------------------|--|
| — RSA | — | RUNWAY SAFETY AREA (RSA) |
| — ROFA | — | RUNWAY OBJECT FREE AREA (ROFA) |
| — ROFZ | — | RUNWAY OBSTACLE FREE ZONE (ROFZ) |
| | [Hatched Box] | PROPOSED AIRFIELD WORK AREA |
| | [Cross-hatched Box] | STAGING AREA (AR150520) |
| | [Green X] | TEMPORARY RUNWAY CLOSURE CROSS (AR150530) |
| | [Green Zigzag] | LOW PROFILE BARRICADE (AR150530) |
| | [Double Arrow] | TEMPORARY HAUL ROUTE / ACCESS ROUTE (AR150540) |
| | [Green Grid] | ESCORT/FLAGMAN LOCATION |
| | [Circle with 1] | SAFETY CRITICAL POINT |



FOR BID

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ISSUE: JUNE 10, 2022

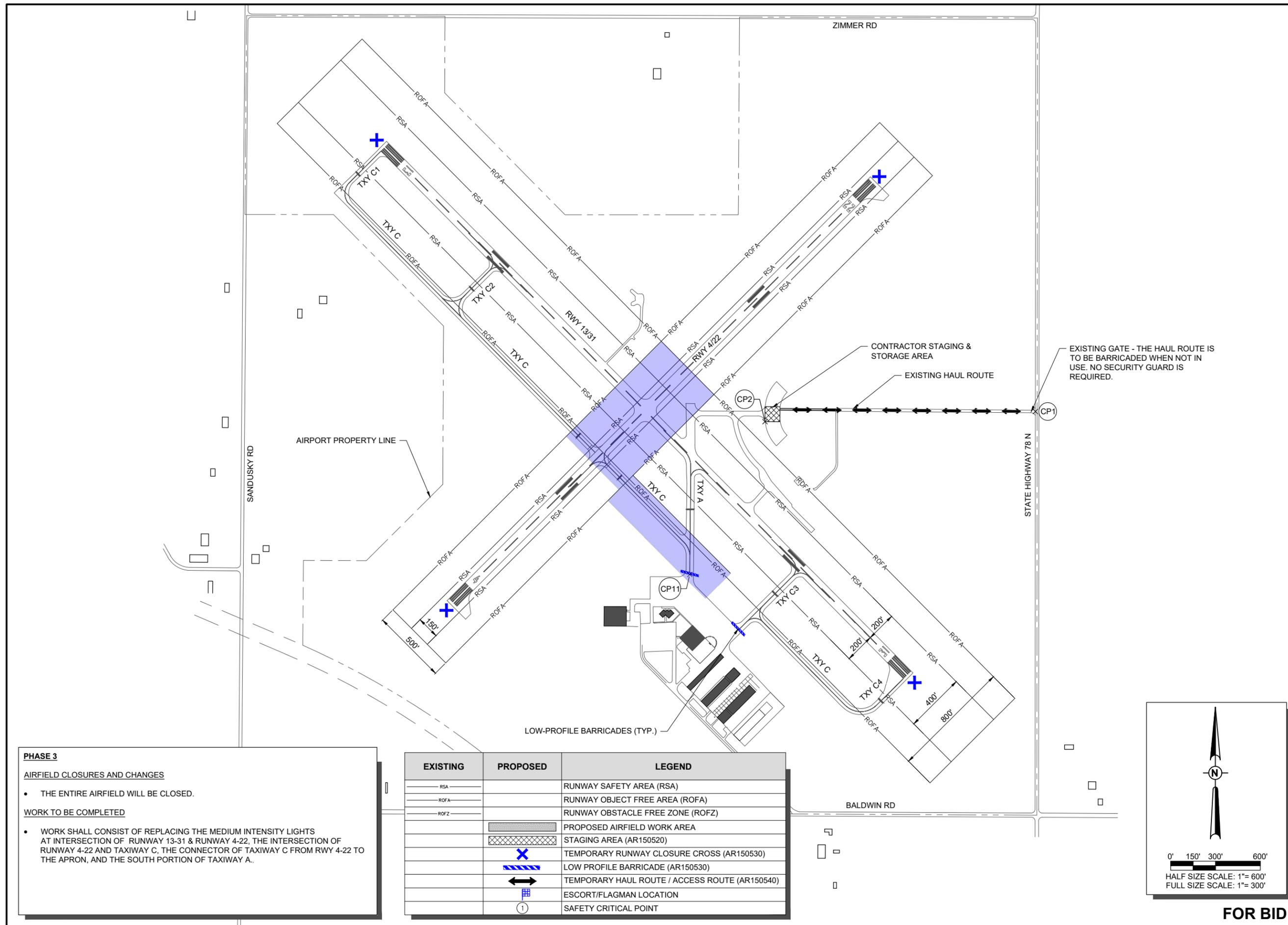
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SHEET TITLE

SAFETY PLAN - PHASE 3



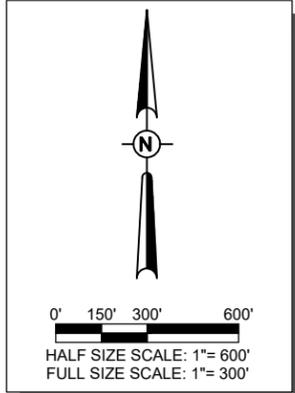
PHASE 3
AIRFIELD CLOSURES AND CHANGES

- THE ENTIRE AIRFIELD WILL BE CLOSED.

WORK TO BE COMPLETED

- WORK SHALL CONSIST OF REPLACING THE MEDIUM INTENSITY LIGHTS AT INTERSECTION OF RUNWAY 13-31 & RUNWAY 4-22, THE INTERSECTION OF RUNWAY 4-22 AND TAXIWAY C, THE CONNECTOR OF TAXIWAY C FROM RWY 4-22 TO THE APRON, AND THE SOUTH PORTION OF TAXIWAY A.

| EXISTING | PROPOSED | LEGEND |
|----------|----------|--|
| --- | --- | RUNWAY SAFETY AREA (RSA) |
| --- | --- | RUNWAY OBJECT FREE AREA (ROFA) |
| --- | --- | RUNWAY OBSTACLE FREE ZONE (ROFZ) |
| --- | --- | PROPOSED AIRFIELD WORK AREA |
| --- | --- | STAGING AREA (AR150520) |
| --- | --- | TEMPORARY RUNWAY CLOSURE CROSS (AR150530) |
| --- | --- | LOW PROFILE BARRICADE (AR150530) |
| --- | --- | TEMPORARY HAUL ROUTE / ACCESS ROUTE (AR150540) |
| --- | --- | ESCORT/FLAGMAN LOCATION |
| --- | --- | SAFETY CRITICAL POINT |



FOR BID

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SAFETY NOTES

- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER/TECHNICIAN AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE CONSTRUCTION SAFETY AND PHASING PLAN SHEETS.
- NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE AIRPORT MANAGER RESERVES THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
- PRIOR TO ACCESSING THE AIRFIELD, ANY DESIGNATED CONTRACTOR OR SUBCONTRACTOR EMPLOYEES WHO WILL BE OPERATING OR ESCORTING A VEHICLE ON AN ACTIVE AREA OF THE AIRFIELD MUST BE FAMILIAR WITH THE "FAA GUIDE TO GROUND VEHICLE OPERATIONS", AND KEEP A HARD COPY IN THE VEHICLE FOR REFERENCE. THE GUIDE CAN BE FOUND AT: https://www.faa.gov/airports/runway_safety/media/Ground_Vehicle_Guide_Proof_Final.pdf
- NO CONSTRUCTION VEHICLES SHALL BE DRIVEN ACROSS ANY ACTIVE (OPEN) AIRFIELD PAVEMENT AREA WITHOUT AN APPROPRIATE ESCORT. CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL NOT BE PERMITTED WITHIN 250' OF RWY 13/31 AND/OR 125' OF RWY 4/22 (DISTANCES MEASURED FROM ACTIVE CENTERLINES) UNLESS CLOSED OR OTHERWISE NOTED. CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL ALSO NOT BE PERMITTED WITHIN 65.5' OF ANY ACTIVE AIRPORT TAXIWAY CENTERLINE OR APRON UNLESS OTHERWISE NOTED.
- CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRE-CONSTRUCTION CONFERENCE.
- ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' OF ANY ACTIVE RUNWAY, WITHIN 65.5' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE RESIDENT ENGINEER/TECHNICIAN) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
- CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION", LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
- OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
- NO CONSTRUCTION EQUIPMENT GREATER THAN 25' TALL WILL BE PERMITTED ON THE AIRPORT WITHOUT THE APPROVAL OF THE AIRPORT MANAGER AND ADDITIONAL AIRSPACE APPROVAL BY THE FAA. AIRSPACE APPROVALS REQUIRE CONSIDERABLE LEAD TIME AND SHOULD BE REQUESTED WELL IN ADVANCE.
- NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER NO FLARE POTS ARE ALLOWED ON THE PROJECT.
- SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEP, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- CONTRACTOR SHALL TAKE MEASURES TO AVOID TRACKING BITUMINOUS TACK COAT ASSOCIATED WITH PAVING PROJECTS ONTO ADJACENT PAVEMENT AREAS, ESPECIALLY GROOVED RUNWAY PAVEMENTS, UNLESS SUFFICIENT PROTECTION HAS BEEN APPLIED. HEAVY TRACKING OR DAMAGE TO ADJACENT PAVEMENTS AND GROOVED SURFACES MAY BE CAUSE FOR STOPPING THE WORK UNTIL ACCEPTABLE PROTECTION OR CHANGE IN WORK METHODS HAS BEEN PROVIDED.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND RESIDENT ENGINEER/TECHNICIAN. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS. STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE RESIDENT ENGINEER/TECHNICIAN.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.

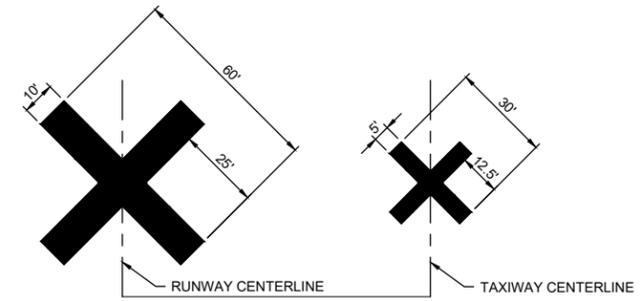
- THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN.
- CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING MEASURES TO CONTROL OR AVOID CREATING ATTRACTANTS TO WILDLIFE. MEASURES MAY INCLUDE CONTINUOUSLY REMOVING ANY WASTE OR LOOSE MATERIALS, PLACEMENT OF MATERIALS IN APPROPRIATE STORAGE CONTAINERS, PROPERLY MAINTAINING FENCES AND GATES TO PREVENT ACCESS, AND PREVENTING PONDING OF WATER THROUGHOUT THE SITE.
- UNLESS SPECIFIED OTHERWISE, COST FOR SAFETY, STAGING, AND TRAFFIC MAINTENANCE ITEMS IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.
- THE CONTRACTOR SHALL HAVE THE SAFETY PLAN COMPLIANCE DOCUMENT (SPCD), AS DETAILED IN THE SPECIAL PROVISIONS, SUBMITTED AND APPROVED PRIOR TO BEING ISSUED "NOTICE TO PROCEED".
- ALL RUNWAY/TAXIWAY CLOSURES SHALL BE COORDINATED WITH AIRPORT MANAGEMENT A MINIMUM OF 7 DAYS BEFORE THE DESIRED CLOSING TIME TO ALLOW FOR THE PROPER COORDINATION. AIRPORT MANAGEMENT HAS COMPLETE AUTHORITY IN DETERMINING WHEN THE RUNWAY/TAXIWAY MAY BE CLOSED.
- RUNWAY/TAXIWAY CLOSURE PROCEDURES:
 - CONTACT THE AIRPORT MANAGEMENT OR ASSIGNED REPRESENTATIVE A MINIMUM OF 7 DAYS BEFORE THE DESIRED CLOSING TIME.
 - ISSUANCE OF NOTAM AND DEACTIVATION OF THE APPLICABLE AIRFIELD LIGHTING AND NAVAIDS BY THE AIRPORT MANAGEMENT AND/OR FAA.
 - PLACEMENT OF CROSSES AND BARRICADES.
 - ONLY AT THE TIME THAT ALL OF THE ABOVE ARE COMPLETED MAY ANY CONSTRUCTION OPERATIONS BEGIN WITHIN THE RUNWAY/TAXIWAY AIR OPERATIONS AREA.

RUNWAY/TAXIWAY RE-OPENING PROCEDURES:

- ENSURE ALL PERSONNEL, EQUIPMENT AND MATERIALS ARE CLEAR OF THE AIR OPERATIONS AREA.
- INSPECT THE AREA FOR LOOSE OR TRACKED DEBRIS, PAVEMENT DROP-OFFS, AND OPEN TRENCHES.
- CONTACT AIRPORT MANAGEMENT OR REPRESENTATIVE FOR FINAL INSPECTION OF THE AREA.
- REMOVE BARRICADES AND CROSSES.
- ACTIVATION OF THE AIRFIELD LIGHTING AND NAVAIDS AND CANCELLATION OF THE NOTAM BY THE AIRPORT MANAGEMENT AND/OR FAA.

BARRICADE NOTES

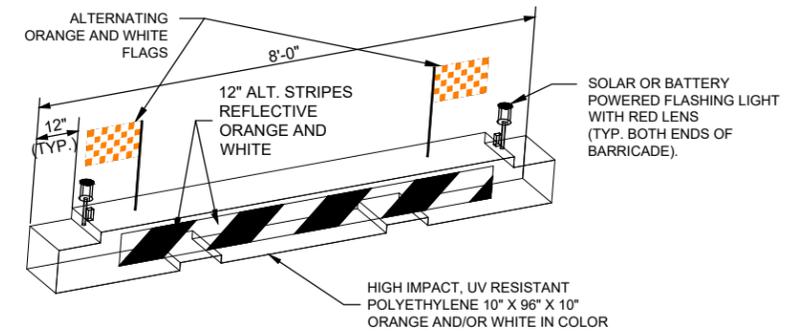
- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- BARRICADES SHALL BE INTERLOCKED END TO END OVER THE LENGTH OF THE PAVEMENT WHERE PROTECTING OPEN RUNWAYS, AND SPACED END TO END A MAXIMUM OF 4 FEET IN OTHER ALL OTHER AREAS. BARRICADES ARE TO BE SET BACK FROM THE ACTIVE RUNWAY OR TAXIWAY CENTERLINE THE DISTANCE AS SHOWN ON THE PLANS.
- CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
- THE ONLY COLOR COMBINATION ON BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING BARRICADES SHALL BE INCLUDED AS AN INCIDENTAL COST TO THE CONTRACT, UNLESS OTHERWISE NOTED.



TEMPORARY CLOSURE CROSS DETAIL

NOT TO SCALE

- TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE "AVIATION YELLOW"
- TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, DOUBLE-LAYERED SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.
- TEMPORARY "CLOSED RUNWAY" MARKINGS SHALL BE PLACED OVER THE RUNWAY DESIGNATION NUMBERS UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER/TECHNICIAN.
- COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE INCLUDED AS AN INCIDENTAL COST TO THE CONTRACT, UNLESS OTHERWISE NOTED.



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.



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JACKSONVILLE MUNICIPAL AIRPORT
1956 Baldwin Rd
Jacksonville, Illinois 62650
Telephone: 217.243.5824
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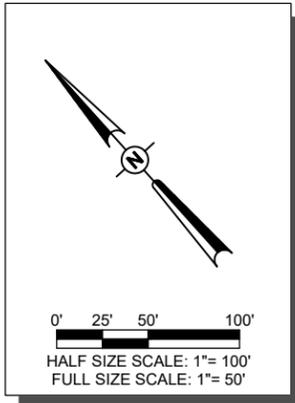
SAFETY PLAN NOTES AND DETAILS

FOR BID

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.



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JAA
Airport Authority

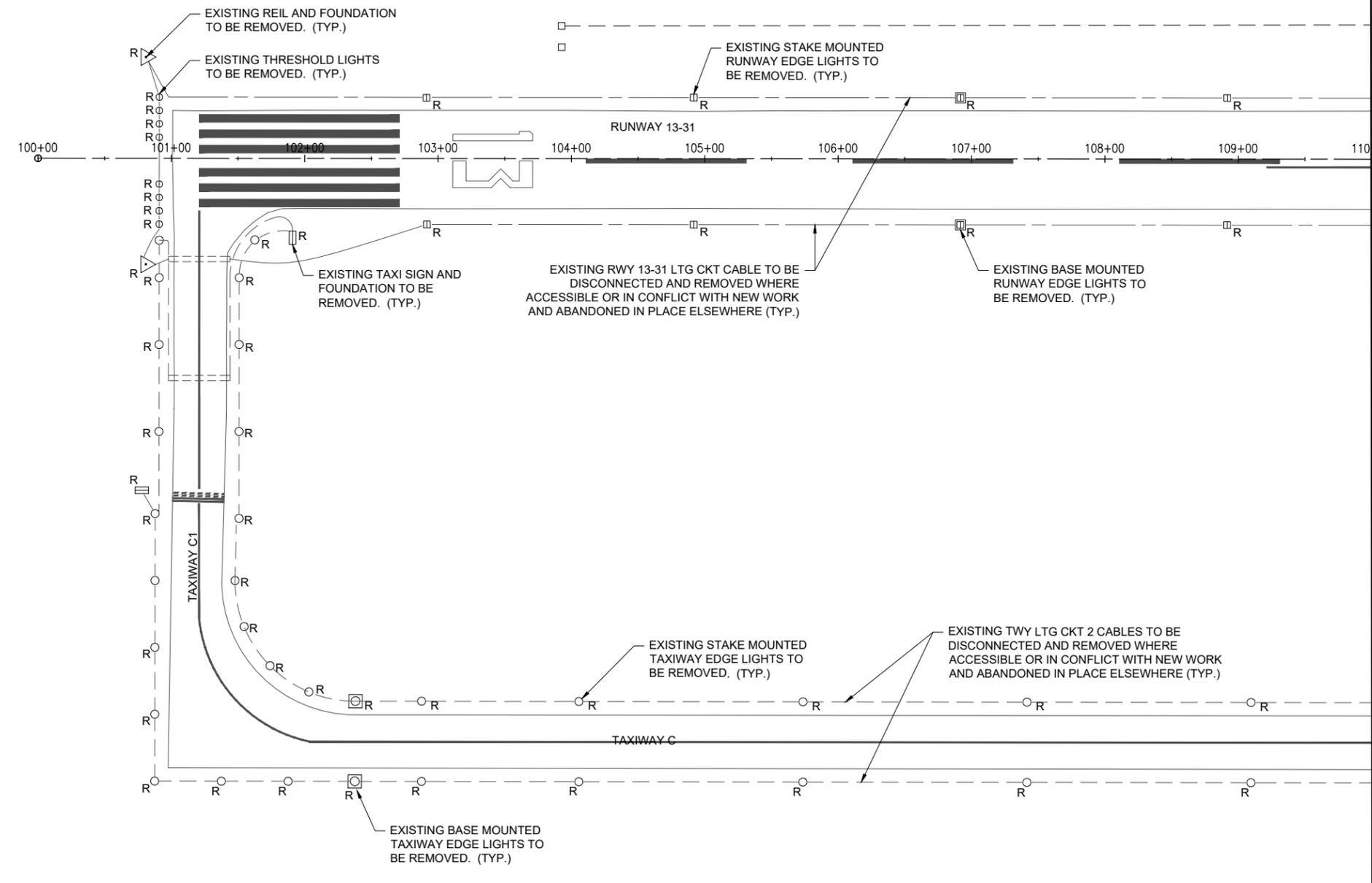
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ELECTRICAL NOTES:

REMOVAL OF EXISTING AIRFIELD LIGHTS, TAXI SIGNS, NAVAIDS, REILS, WIND CONES, BASES, JUNCTION STRUCTURES, FOUNDATIONSM CABLES, DUCTS, AND ASSOCIATED MATERIALS WILL BE PAID FOR UNDER ITEM AR800476 REMOVE AIRFIELD LIGHTING PER LUMP SUM

LEGEND

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



Kevin N. Lightfoot

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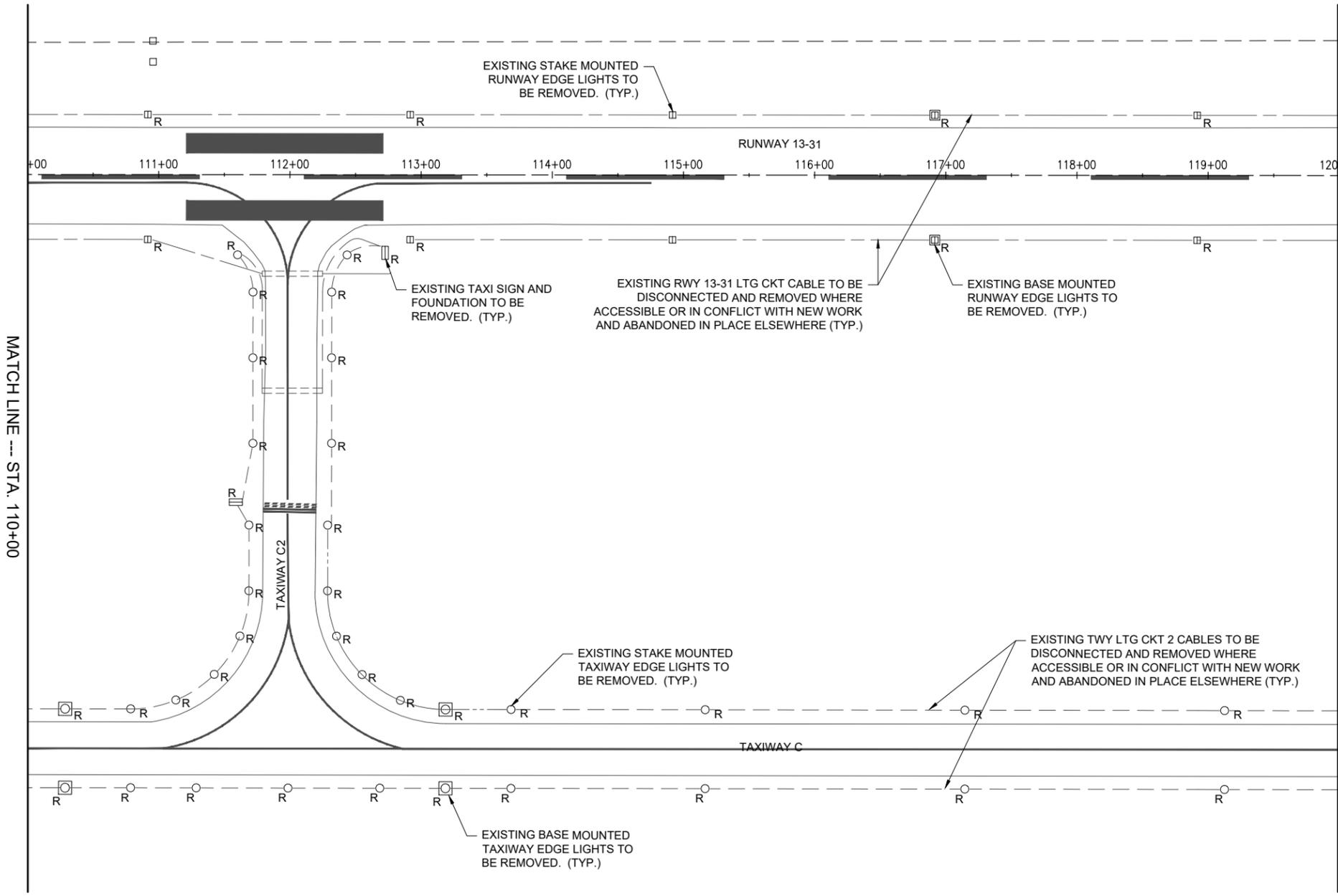
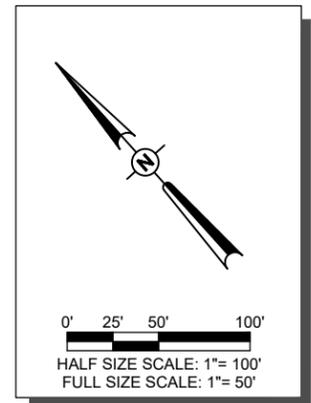
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DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING ELECTRICAL PLAN - SHEET 1

FOR BID



ELECTRICAL NOTES:

REMOVAL OF EXISTING AIRFIELD LIGHTS, TAXI SIGNS, NAVAIDS, REILS, WIND CONES, BASES, JUNCTION STRUCTURES, FOUNDATIONS, CABLES, DUCTS, AND ASSOCIATED MATERIALS WILL BE PAID FOR UNDER ITEM AR800476 REMOVE AIRFIELD LIGHTING PER LUMP SUM

LEGEND

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



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-101-PLN.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING ELECTRICAL PLAN - SHEET 2

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No: 3-17-SBGP-156/162/171

Contract No.: JA040

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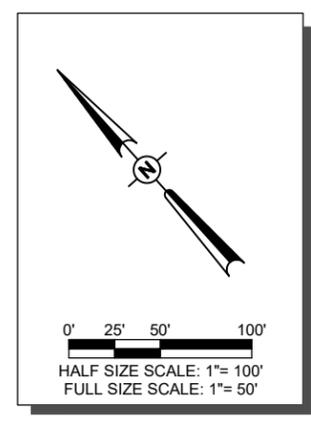
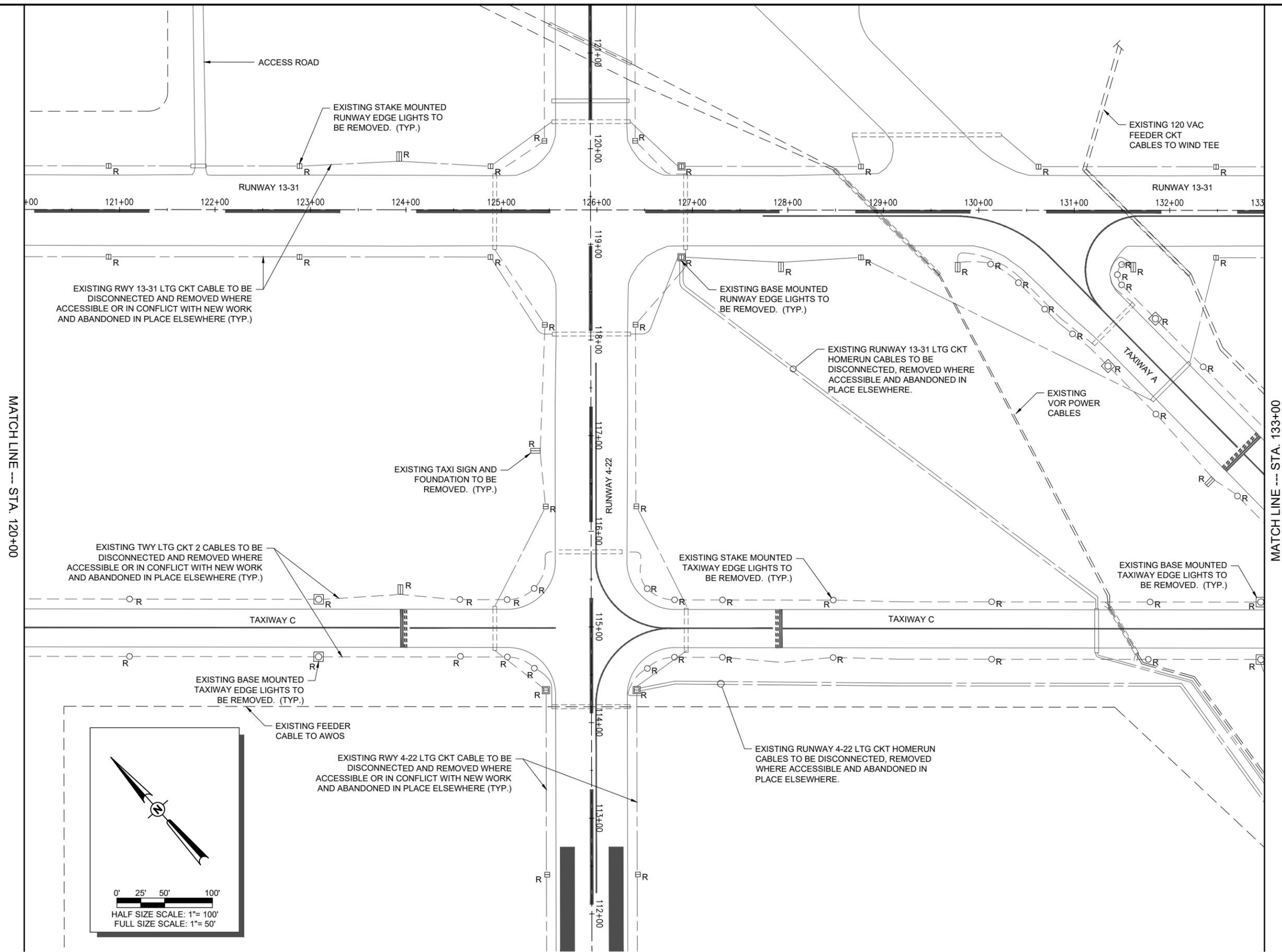
| NO. | DATE | DESCRIPTION | | |
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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
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DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING ELECTRICAL PLAN - SHEET 3

FOR BID

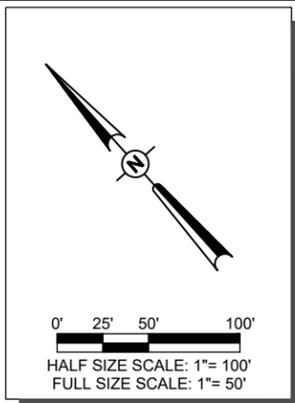
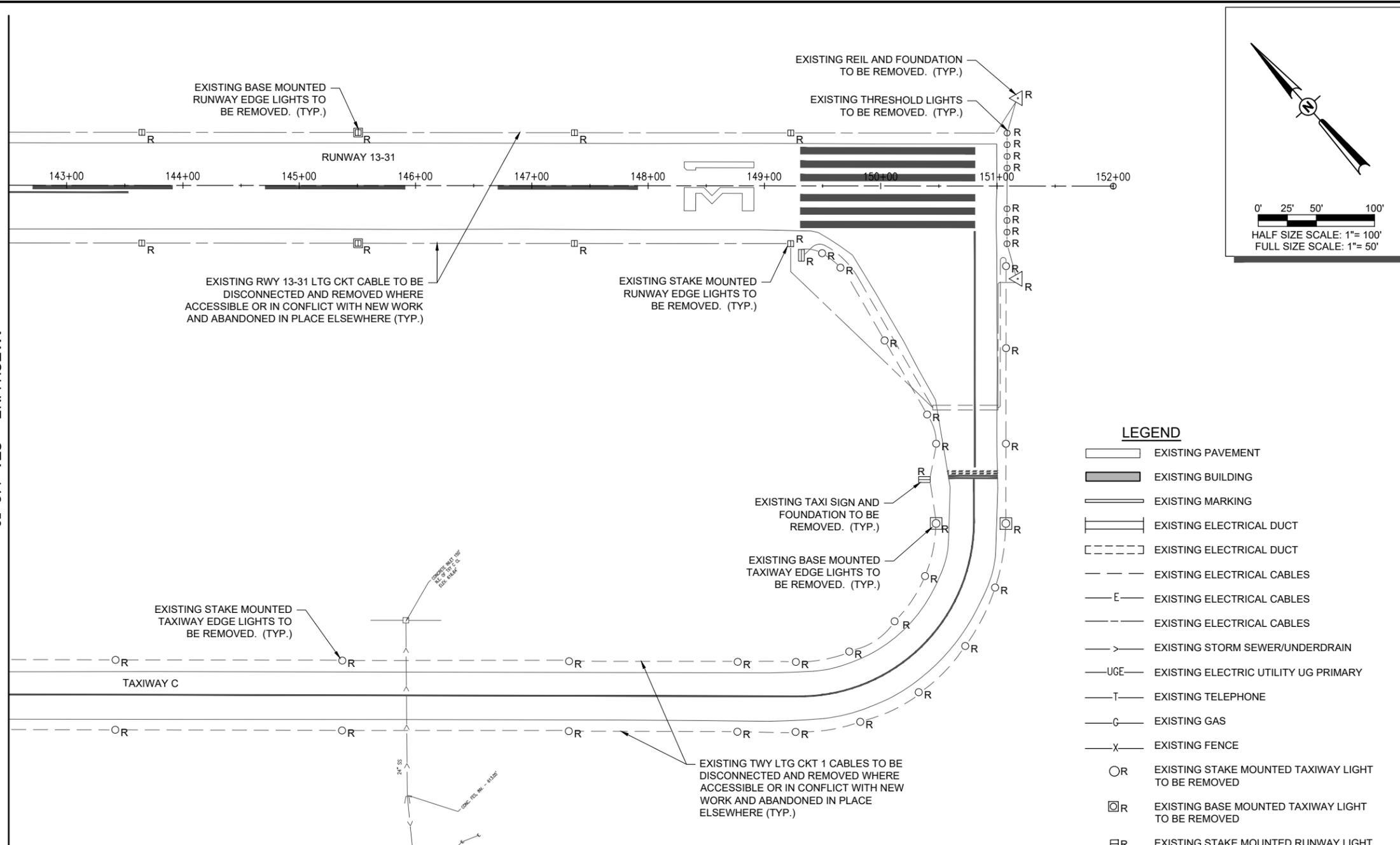


MATCH LINE --- STA. 120+00

MATCH LINE --- STA. 133+00

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MATCH LINE --- STA. 142+50



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



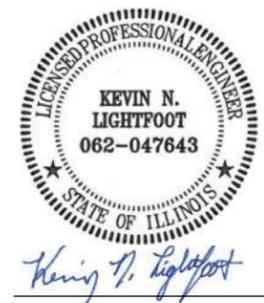
Offices Nationwide
 www.hanson-inc.com

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

Illinois Licensed
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JACKSONVILLE MUNICIPAL AIRPORT
 1956 Baldwin Rd
 Jacksonville, Illinois 62650
 Telephone: 217.243.5824
 Fax: 217.243.7954



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
 SBGP No:
 3-17-SBGP-156/162/171

Contract No.: JA040

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ISSUE: JUNE 10, 2022
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 DESIGN BY: KNL 4/2/2022
 DRAWN BY: CWS 4/4/2022
 REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING ELECTRICAL PLAN - SHEET 5

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

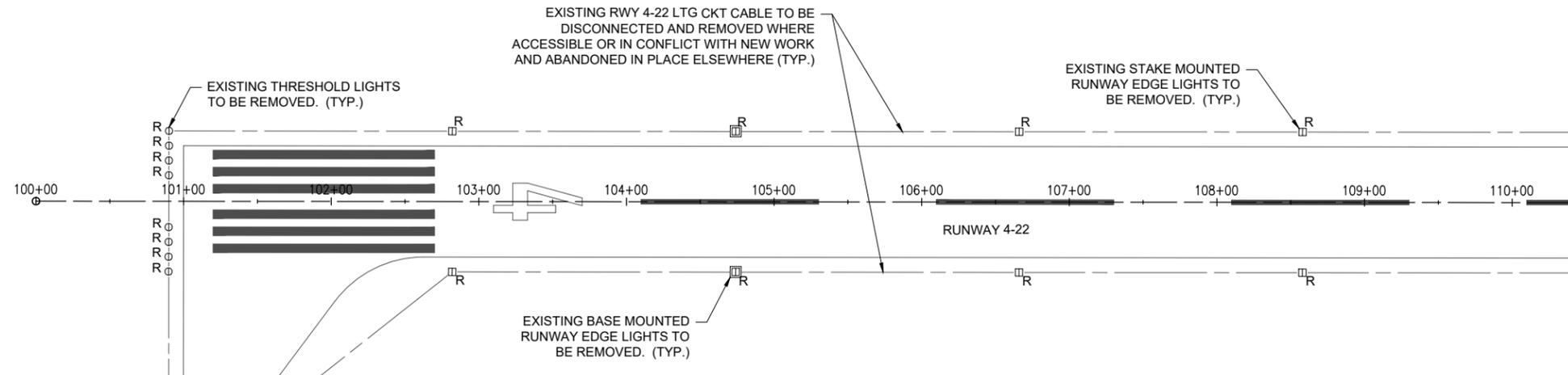
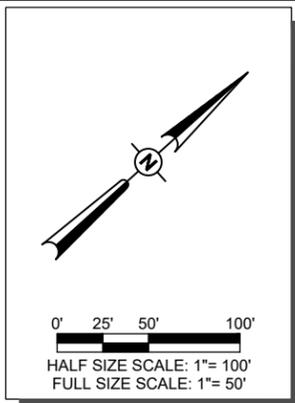
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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-101-PLN.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

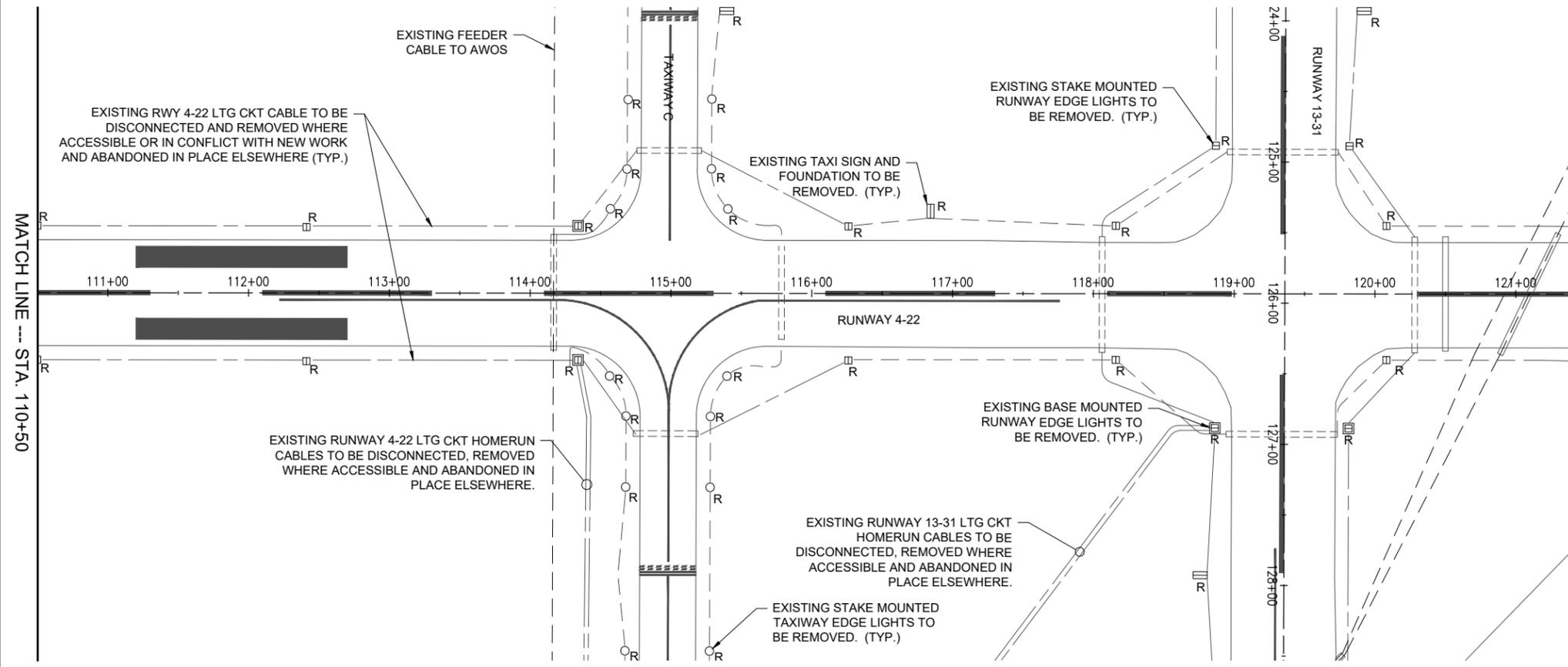
SHEET TITLE

EXISTING ELECTRICAL PLAN - SHEET 6



MATCH LINE --- STA. 110+50

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



MATCH LINE --- STA. 110+50

MATCH LINE --- STA. 121+50

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

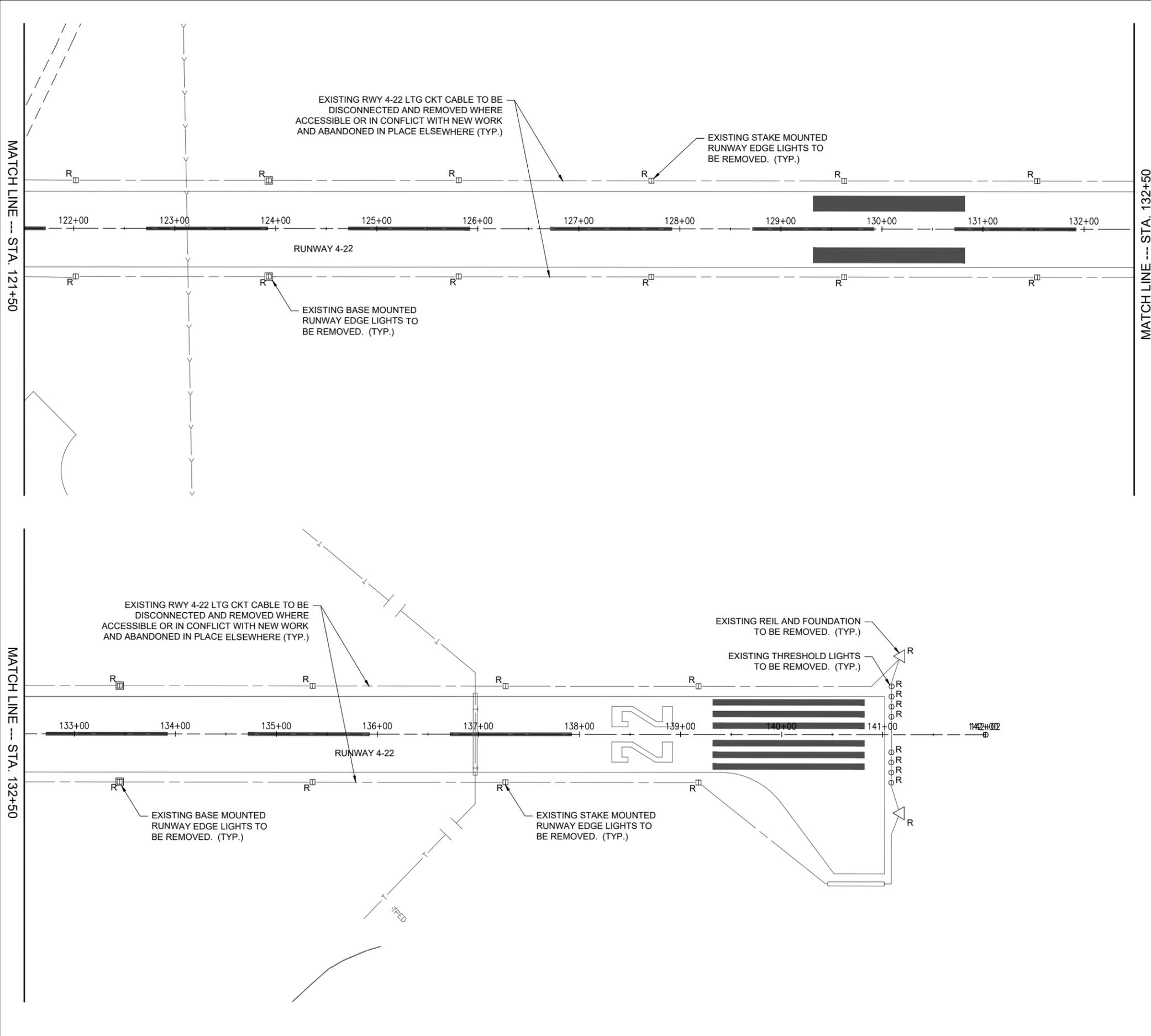
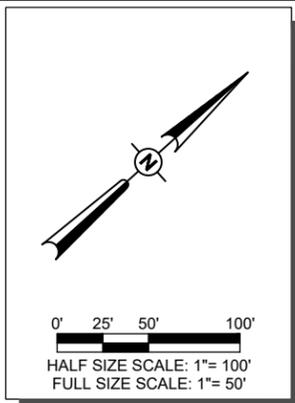
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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-101-PLN.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING ELECTRICAL PLAN - SHEET 7



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

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

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IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

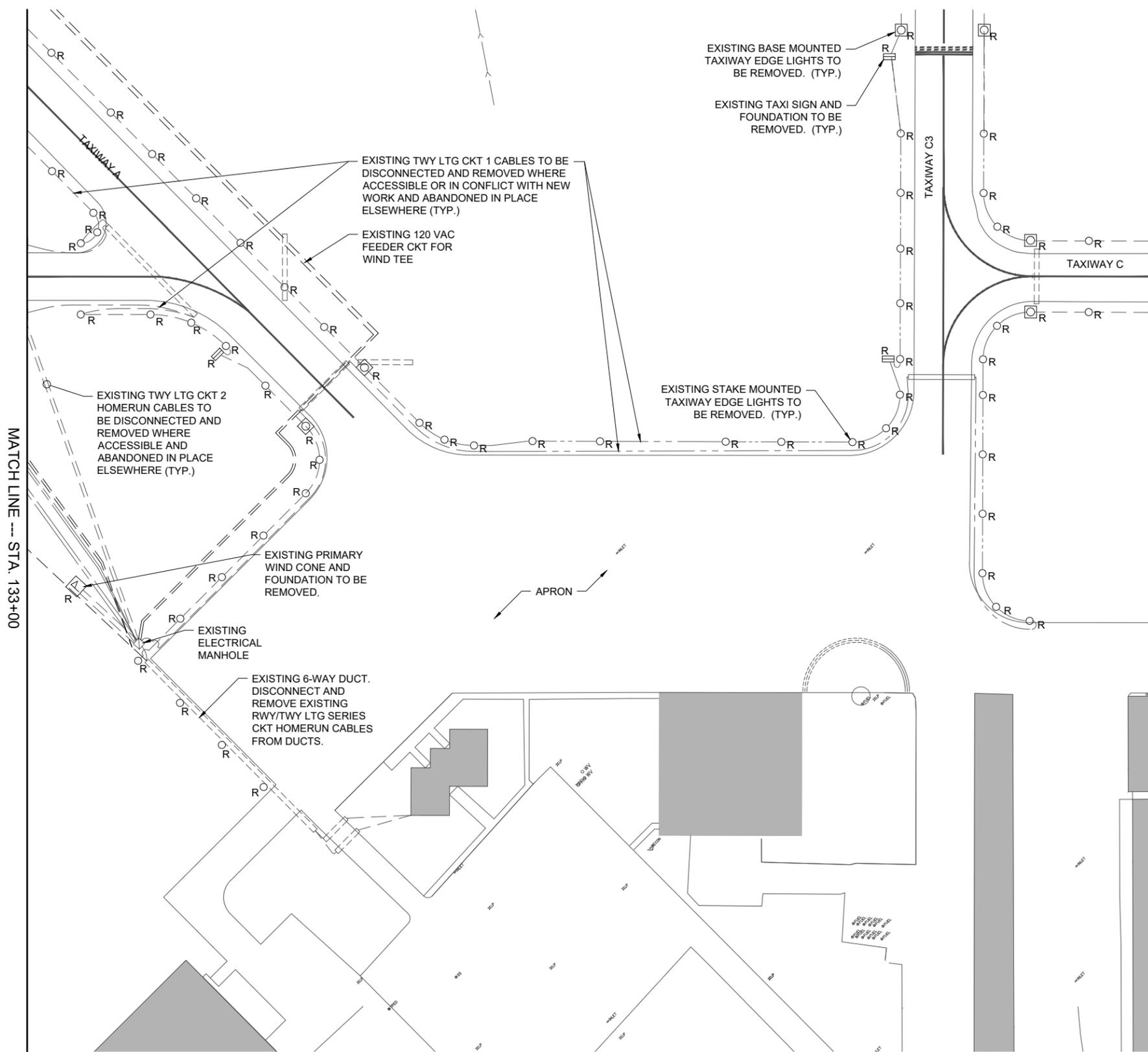
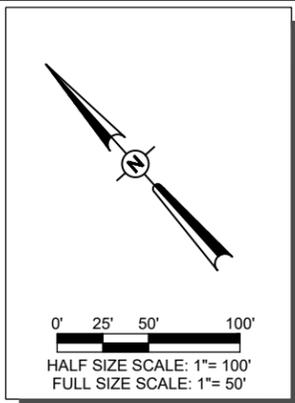
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REVIEWED BY: KNL 6/8/2022

SHEET TITLE

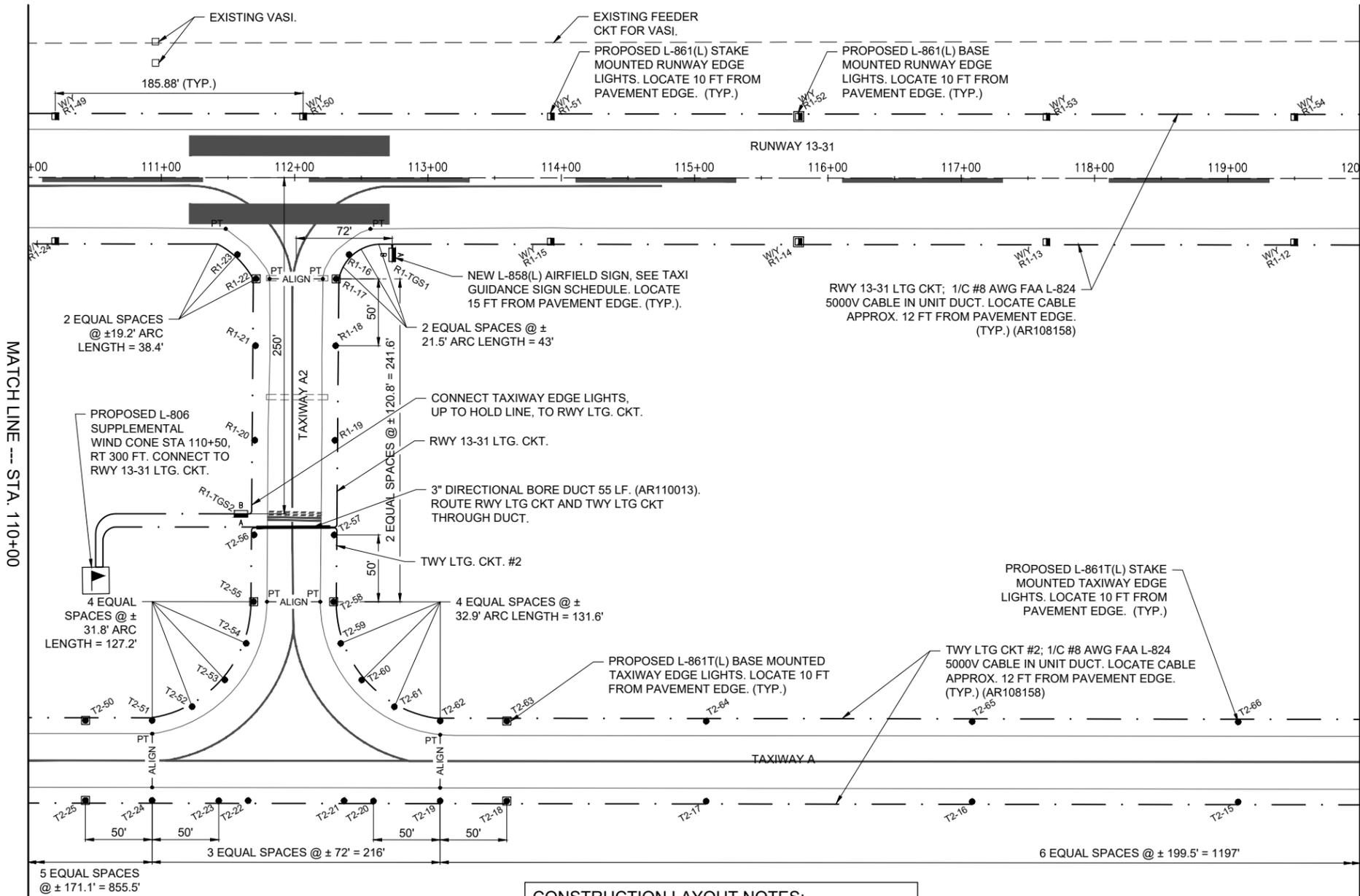
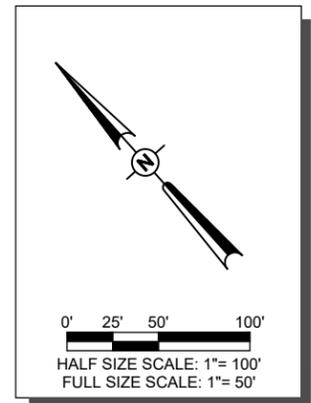
EXISTING ELECTRICAL PLAN - SHEET 8



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

MATCH LINE --- STA. 133+00

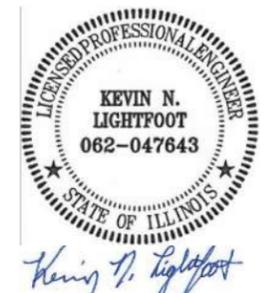
MATCH LINE --- STA. 142+50



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

CONSTRUCTION LAYOUT NOTES:

RUNWAY AND TAXIWAY EDGE LIGHT SPACING WAS LAID OUT BY DESIGNERS WITH AVAILABLE RECORD DRAWINGS AND LIMITED SURVEY IN ORDER TO PROVIDE THE CORRECT NUMBER OF FIXTURES ALONG EACH TANGENT PAVEMENT SECTION. WHEN DIMENSIONS ARE IDENTIFIED AS APPROXIMATE (+ OR -), THE CONTRACTOR SHALL VERIFY AND REESTABLISH THE 'PT' POINT OF EACH CURVE SHOWN ON THE LIGHT LAYOUT PLANS. ONCE APPROVED BY THE ENGINEER, THE TANGENT DISTANCES BETWEEN 'PT' POINTS SHALL BE USED TO EQUIDISTANTLY SPACE THE EDGE LIGHTS AT THE NUMBER OF SPACES SHOWN ON THE PLANS. NOTE THAT TAXIWAY EDGE LIGHTS HAVE ADDITIONAL FIXTURES INSTALLED 50' AHEAD OR BACK OF THE 'PT' POINT. THESE ADDITIONAL LIGHTS ARE INSTALLED INDEPENDENT OF THE AFOREMENTIONED SPACED LIGHTS.



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

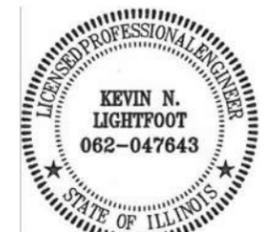
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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-102-PLN.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

PROPOSED ELECTRICAL PLAN - SHEET 2

FOR BID



Kevin N. Lightfoot

DATE: 6/10/2022 LICENSE: 11/30/2023
SIGNED: 6/10/2022 EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

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SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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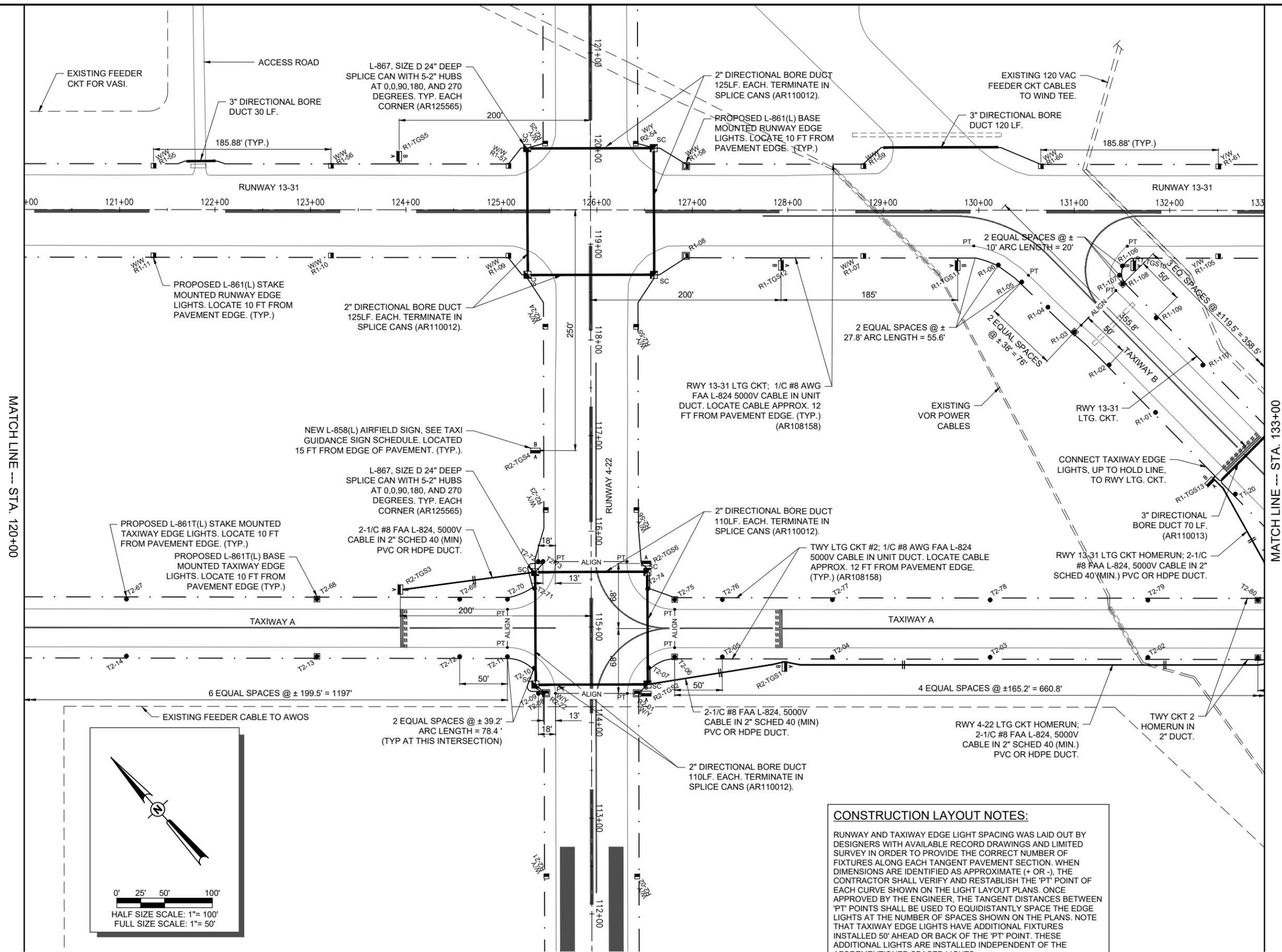
ISSUE: JUNE 10, 2022

PROJECT NO: 21A0121D
CAD FILE: E-102-PLN.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

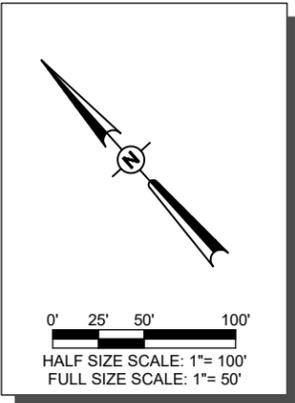
SHEET TITLE

PROPOSED ELECTRICAL PLAN - SHEET 3

FOR BID

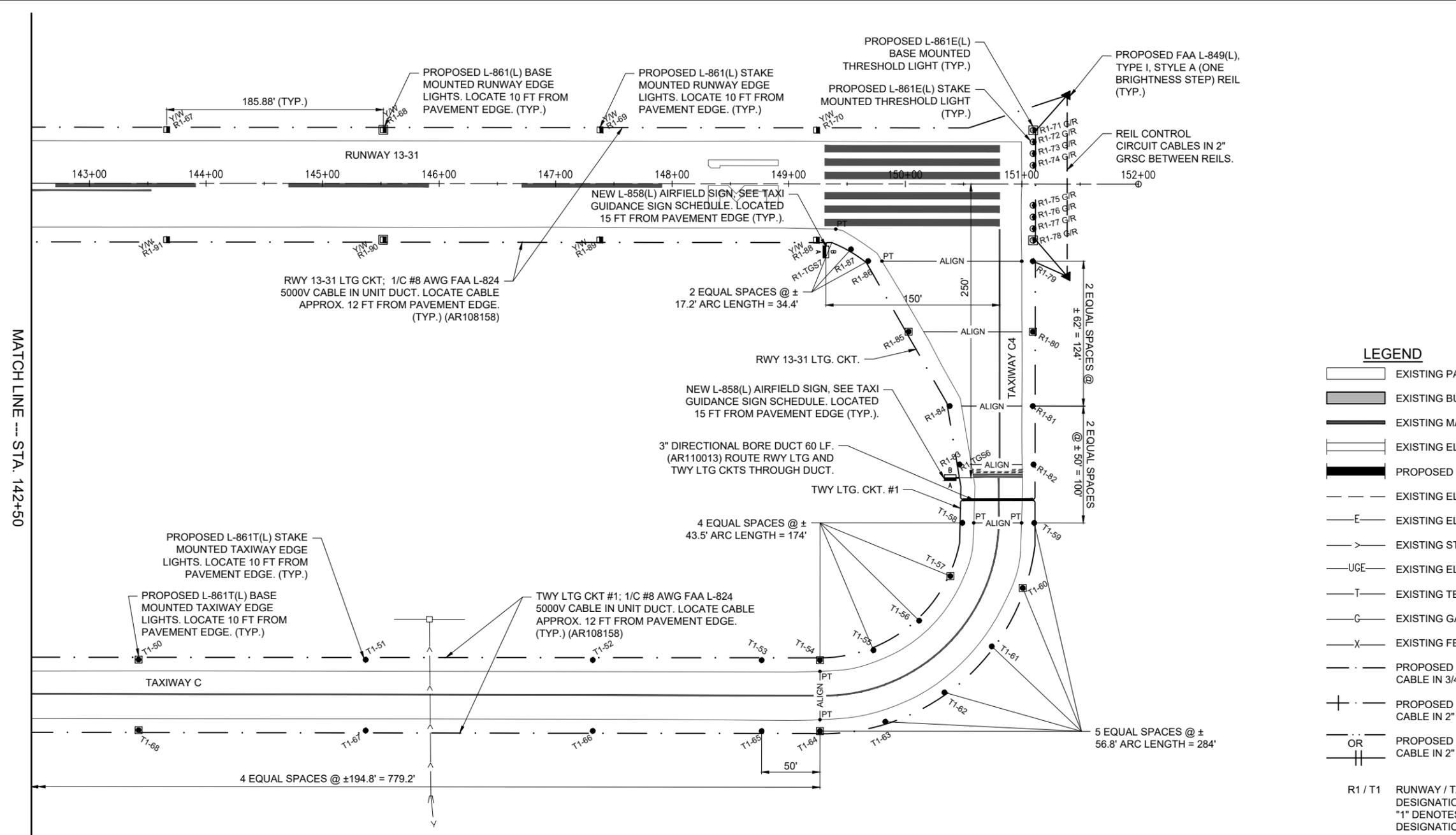
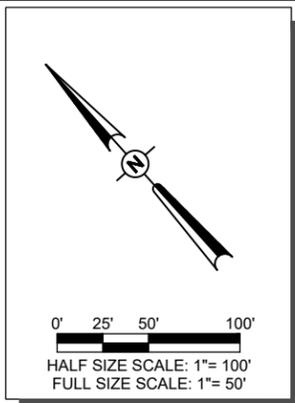


CONSTRUCTION LAYOUT NOTES:
RUNWAY AND TAXIWAY EDGE LIGHT SPACING WAS LAID OUT BY DESIGNERS WITH AVAILABLE RECORD DRAWINGS AND LIMITED SURVEY IN ORDER TO PROVIDE THE CORRECT NUMBER OF FIXTURES ALONG EACH TANGENT PAVEMENT SECTION. WHEN DIMENSIONS ARE IDENTIFIED AS APPROXIMATE (+ OR -), THE CONTRACTOR SHALL VERIFY AND REESTABLISH THE 'PT' POINT OF EACH CURVE SHOWN ON THE LIGHT LAYOUT PLANS. ONCE APPROVED BY THE ENGINEER, THE TANGENT DISTANCES BETWEEN 'PT' POINTS SHALL BE USED TO EQUIDISTANTLY SPACE THE EDGE LIGHTS AT THE NUMBER OF SPACES SHOWN ON THE PLANS. NOTE THAT TAXIWAY EDGE LIGHTS HAVE ADDITIONAL FIXTURES INSTALLED 50' AHEAD OR BACK OF THE 'PT' POINT. THESE ADDITIONAL LIGHTS ARE INSTALLED INDEPENDENT OF THE FOREMENTIONED SPACED LIGHTS.



MATCH LINE --- STA. 120+00

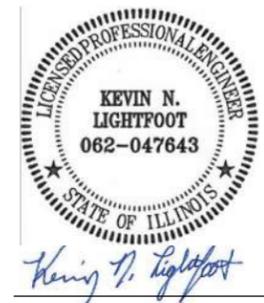
MATCH LINE --- STA. 133+00



- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
 - EXISTING ELECTRICAL CABLES
 - EXISTING STORM SEWER/UNDERDRAIN
 - EXISTING ELECTRIC UTILITY UG PRIMARY
 - EXISTING TELEPHONE
 - EXISTING GAS
 - EXISTING FENCE
 - PROPOSED 1/2 #8 AWG, FAA L-824, 5000 VOLT CABLE IN 3/4" (MIN.) UNIT DUCT
 - PROPOSED 1/2 #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
 - PROPOSED 2-1/2 #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
 - R1 / T1** RUNWAY / TAXIWAY LIGHTING CIRCUIT DESIGNATION. "RT" DENOTES RUNWAY/TAXIWAY "1" DENOTES RESPECTIVE TAXIWAY CKT DESIGNATION.
 - PROPOSED STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED STAKE MOUNTED RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED RUNWAY/TAXI GUIDANCE SIGN
 - EXISTING ELECTRICAL SPLICE CAN / HANDHOLE
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - PROPOSED WIND CONE
 - POINT OF TANGENCY

CONSTRUCTION LAYOUT NOTES:

RUNWAY AND TAXIWAY EDGE LIGHT SPACING WAS LAID OUT BY DESIGNERS WITH AVAILABLE RECORD DRAWINGS AND LIMITED SURVEY IN ORDER TO PROVIDE THE CORRECT NUMBER OF FIXTURES ALONG EACH TANGENT PAVEMENT SECTION. WHEN DIMENSIONS ARE IDENTIFIED AS APPROXIMATE (+ OR -), THE CONTRACTOR SHALL VERIFY AND REESTABLISH THE 'PT' POINT OF EACH CURVE SHOWN ON THE LIGHT LAYOUT PLANS. ONCE APPROVED BY THE ENGINEER, THE TANGENT DISTANCES BETWEEN 'PT' POINTS SHALL BE USED TO EQUIDISTANTLY SPACE THE EDGE LIGHTS AT THE NUMBER OF SPACES SHOWN ON THE PLANS. NOTE THAT TAXIWAY EDGE LIGHTS HAVE ADDITIONAL FIXTURES INSTALLED 50' AHEAD OR BACK OF THE 'PT' POINT. THESE ADDITIONAL LIGHTS ARE INSTALLED INDEPENDENT OF THE AFOREMENTIONED SPACED LIGHTS.



DATE: 6/10/2022 LICENSE: 11/30/2023
SIGNED: EXPIRES:
REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

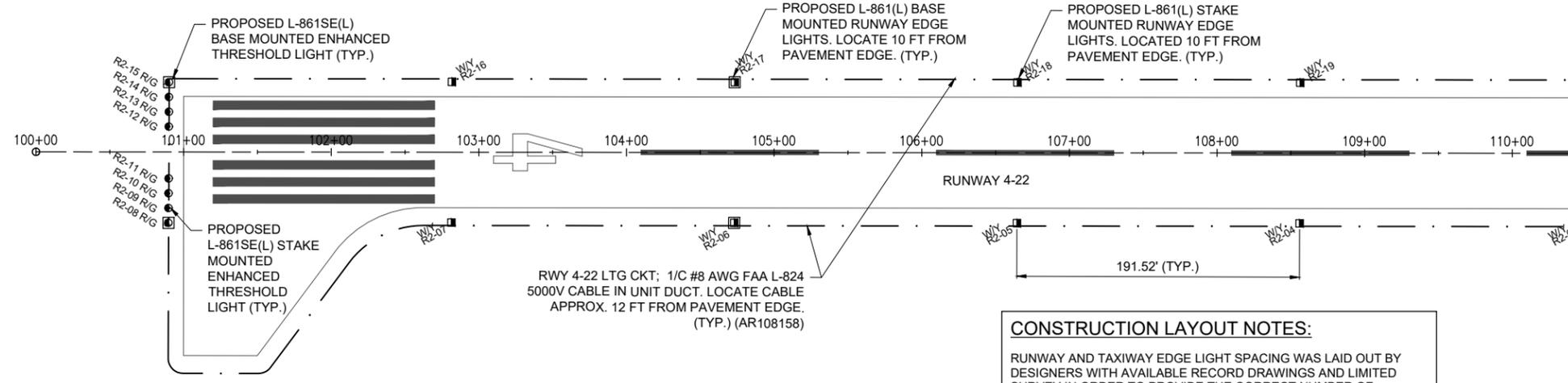
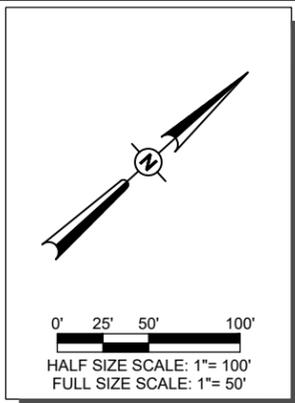
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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-102-PLN.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

PROPOSED ELECTRICAL PLAN - SHEET 5

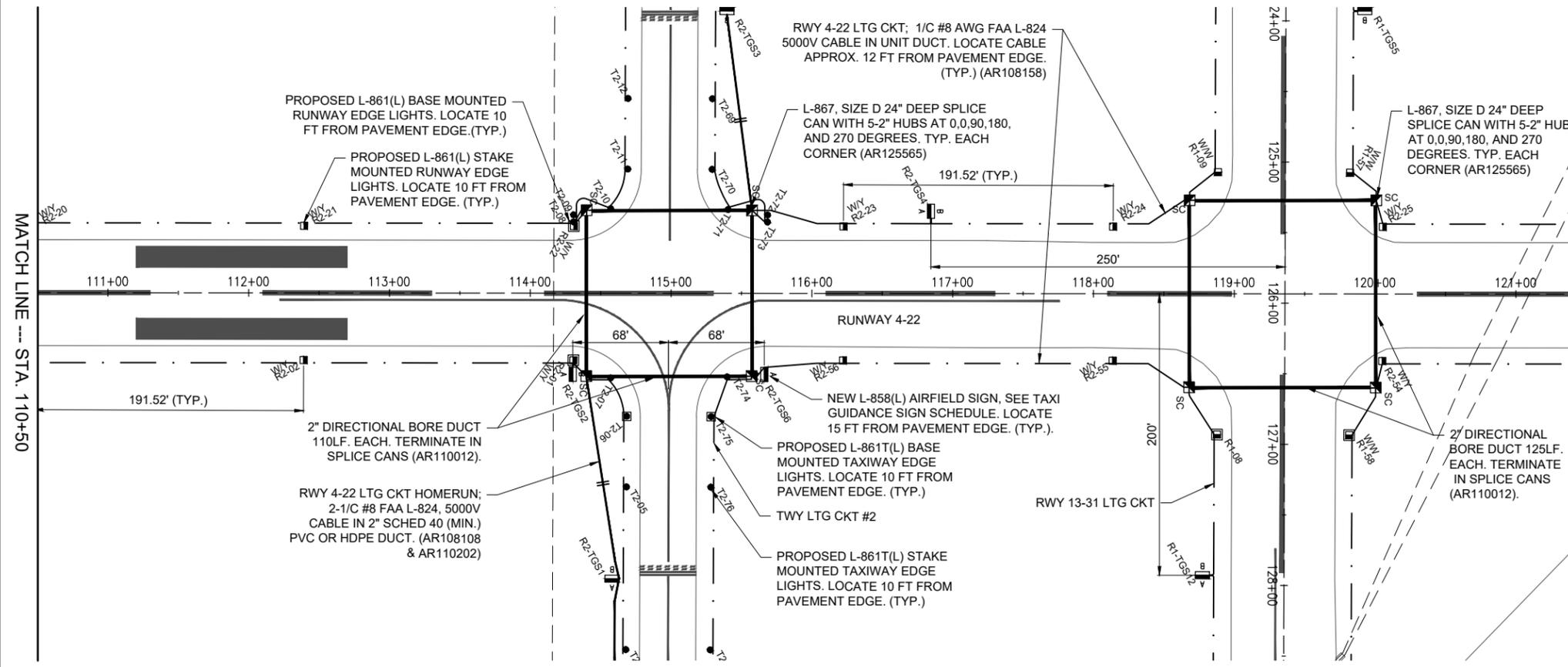
FOR BID



CONSTRUCTION LAYOUT NOTES:

RUNWAY AND TAXIWAY EDGE LIGHT SPACING WAS LAID OUT BY DESIGNERS WITH AVAILABLE RECORD DRAWINGS AND LIMITED SURVEY IN ORDER TO PROVIDE THE CORRECT NUMBER OF FIXTURES ALONG EACH TANGENT PAVEMENT SECTION. WHEN DIMENSIONS ARE IDENTIFIED AS APPROXIMATE (+ OR -), THE CONTRACTOR SHALL VERIFY AND REESTABLISH THE 'PT' POINT OF EACH CURVE SHOWN ON THE LIGHT LAYOUT PLANS. ONCE APPROVED BY THE ENGINEER, THE TANGENT DISTANCES BETWEEN 'PT' POINTS SHALL BE USED TO EQUIDISTANTLY SPACE THE EDGE LIGHTS AT THE NUMBER OF SPACES SHOWN ON THE PLANS. NOTE THAT TAXIWAY EDGE LIGHTS HAVE ADDITIONAL FIXTURES INSTALLED 50' AHEAD OR BACK OF THE 'PT' POINT. THESE ADDITIONAL LIGHTS ARE INSTALLED INDEPENDENT OF THE FOREMENTIONED SPACED LIGHTS.

- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
 - EXISTING ELECTRICAL CABLES
 - EXISTING STORM SEWER/UNDERDRAIN
 - EXISTING ELECTRIC UTILITY UG PRIMARY
 - EXISTING TELEPHONE
 - EXISTING GAS
 - EXISTING FENCE
 - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT 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.
 - PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
 - R1 / T1 RUNWAY / TAXIWAY LIGHTING CIRCUIT DESIGNATION. "R/T" DENOTES RUNWAY/TAXIWAY "1" DENOTES RESPECTIVE TAXIWAY CKT DESIGNATION.
 - PROPOSED STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED STAKE MOUNTED RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED RUNWAY/TAXI GUIDANCE SIGN
 - EXISTING ELECTRICAL SPLICE CAN / HANDHOLE
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - PROPOSED WIND CONE
 - POINT OF TANGENCY



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

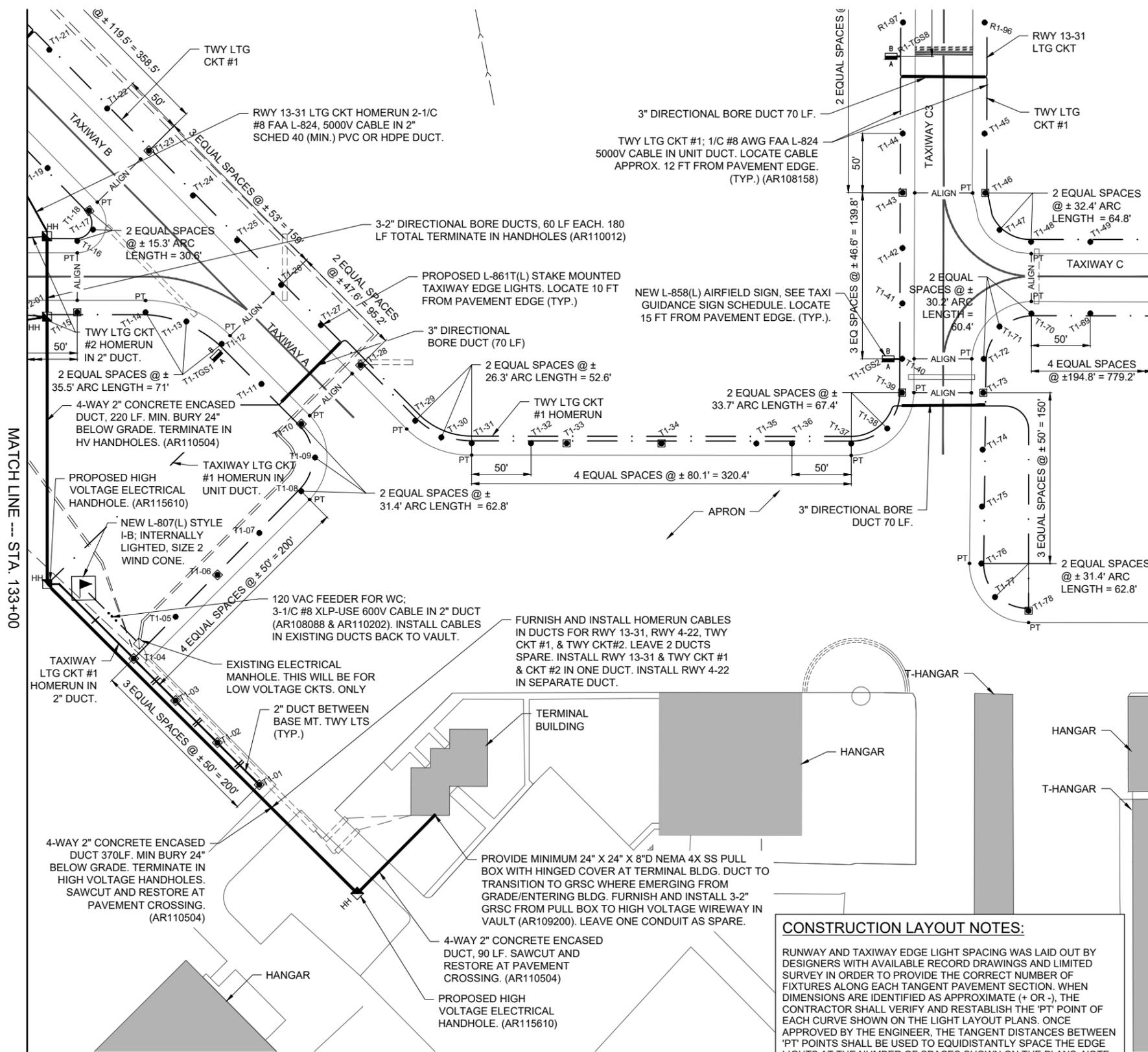
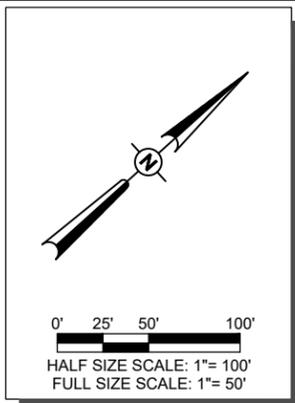
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SHEET TITLE

PROPOSED ELECTRICAL PLAN - SHEET 6

FOR BID



- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
 - EXISTING ELECTRICAL CABLES
 - EXISTING STORM SEWER/UNDERDRAIN
 - EXISTING ELECTRIC UTILITY UG PRIMARY
 - EXISTING TELEPHONE
 - EXISTING GAS
 - EXISTING FENCE
 - PROPOSED 1/2" #8 AWG, FAA L-824, 5000 VOLT CABLE IN 3/4" (MIN.) UNIT DUCT
 - PROPOSED 2-1/2" #8 AWG, FAA L-824, 5000 VOLT CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT.
- R1 / T1 RUNWAY / TAXIWAY LIGHTING CIRCUIT DESIGNATION. "R/T" DENOTES RUNWAY/TAXIWAY "1" DENOTES RESPECTIVE TAXIWAY CKT DESIGNATION.
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED STAKE MOUNTED RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED RUNWAY/TAXI GUIDANCE SIGN
 - EXISTING ELECTRICAL SPLICE CAN / HANDHOLE
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - PROPOSED WIND CONE
 - POINT OF TANGENCY

CONSTRUCTION LAYOUT NOTES:

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DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023
Kevin N. Lightfoot

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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REVIEWED BY: KNL 6/8/2022

SHEET TITLE

PROPOSED ELECTRICAL PLAN - SHEET 8

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

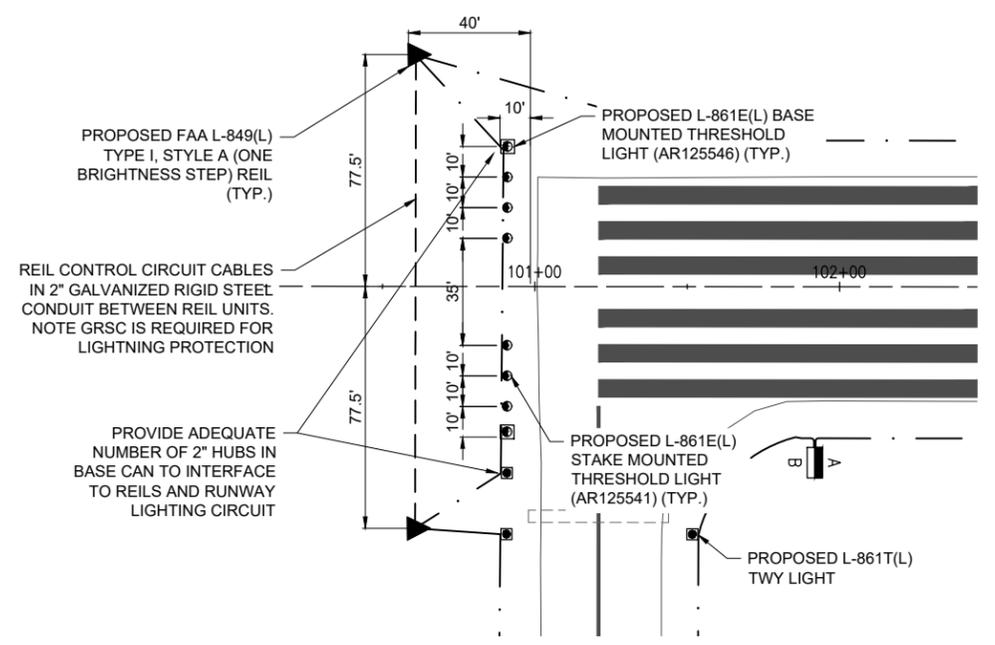
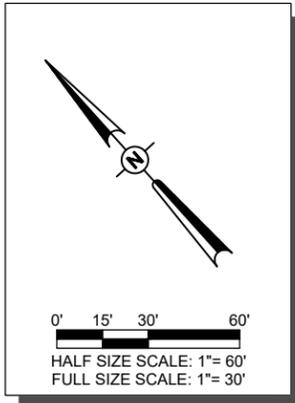
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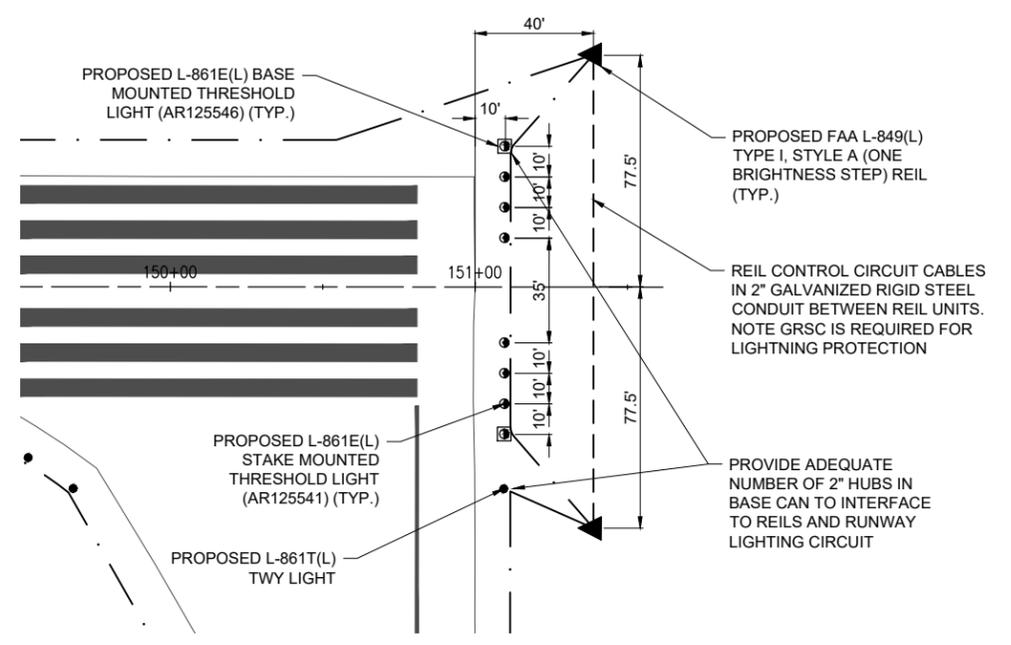
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PROJECT NO: 21A0121D
CAD FILE: E-103-PLN.DWG
DESIGN BY: KNL 5/10/2022
DRAWN BY: CWS 5/10/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

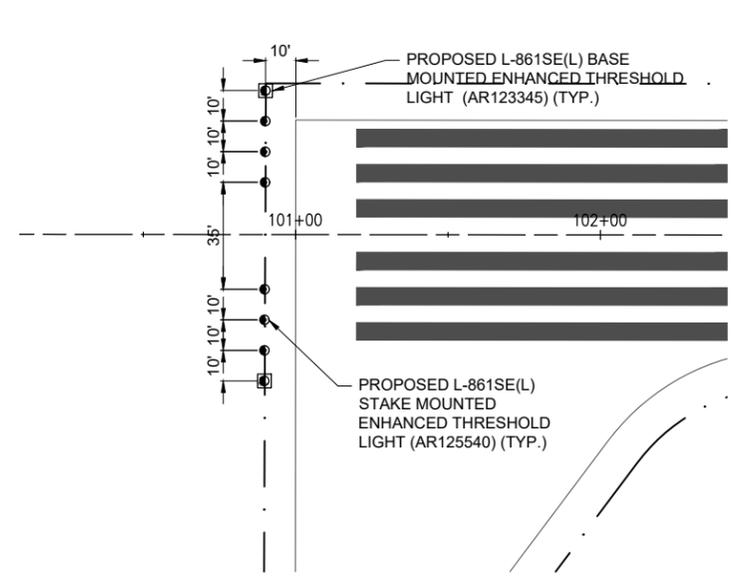
PROPOSED RUNWAY THRESHOLD ELECTRICAL PLANS



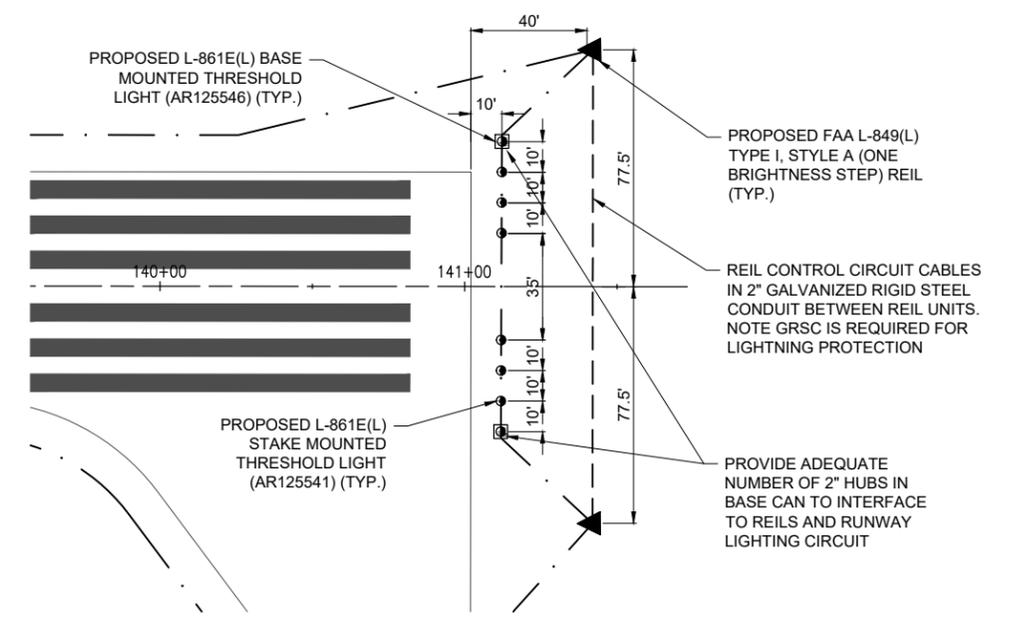
RUNWAY 13 END THRESHOLD



RUNWAY 31 END THRESHOLD



RUNWAY 4 END THRESHOLD / TURNAROUND



RUNWAY 22 END THRESHOLD / TURNAROUND

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FOR BID



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

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IDA No: IJX-4880
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3-17-SBGP-156/162/171

Contract No.: JA040

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DESIGN BY: KNL 5/1/2022
DRAWN BY: CWS 5/6/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

TAXI GUIDANCE SIGN SCHEDULE AND NOTES

NOTES:

- THE PROPOSED RUNWAY/TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-44 (CURRENT ISSUE IN EFFECT) AND BE FAA-APPROVED FOR TYPE L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).
- ALL SIGNS SHALL BE FURNISHED WITH TETHERS. TETHERS SHALL BE 3/16" STAINLESS STEEL AIRCRAFT CABLE WITH A FORMED EYE ON BOTH ENDS. THE TETHER EYE SHALL BE ATTACHED TO THE SIGN AND BASE BY BEING SANDWICHED BETWEEN TWO STAINLESS STEEL FENDER WASHERS, WITH A 1/2" MINIMUM STAINLESS STEEL BOLT. THE TETHER SHALL BE OF SUFFICIENT LENGTH TO HAVE A MINIMUM OF 6" OF SLACK WHEN ATTACHED BETWEEN THE SIGN AND THE SIGN BASE. THE TETHERS AND BONDING CONDUCTORS SHALL BE OF SUFFICIENT LENGTH TO ALLOW THE FRANGIBLE COUPLINGS TO OPERATE WITHOUT RESTRICTIONS AND TO ALLOW THE POWER CABLE TO DISCONNECT IF THE SIGN FALLS OVER. PROVIDE 3" ± 1/2" SLACK IN TETHER AND ALL TETHERS SHALL BE THE SAME LENGTH.
- ALL SIGNS SHALL BE ORIENTATED SUCH THAT THE LONGITUDINAL CENTERLINE OF THE SIGN IS PERPENDICULAR TO THE RESPECTIVE TAXIWAY/RUNWAY CENTERLINE, UNLESS NOTED OTHERWISE.
- ALL MANDATORY SIGNS (SIZE 1) SHALL BE LOCATED 15' OFF THE EDGE OF FULL STRENGTH PAVEMENT, (UNLESS DETAILED OTHERWISE) AND ALIGNED WITH THE FRONT EDGE OF THE FIRST YELLOW STRIPE (FURTHEST FROM THE RUNWAY) OF THE HOLD POSITION MARKING UNLESS SHOWN OTHERWISE FOR A RESPECTIVE SIGN. CONFIRM LOCATIONS WITH THE PROJECT ENGINEER.
- RUNWAY EXIT/TAXIWAY ENTRANCE SIGNS (TAXIWAY GUIDANCE SIGNS TO DEFINE THE THROAT OR ENTRANCE INTO THE INTERSECTING TAXIING ROUTE) OR RUNWAY EXIT/TAXIWAY ENTRANCE LIGHTS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY CIRCUIT TO BE ILLUMINATED WHEN THE RUNWAY EDGE LIGHTS ARE ON TO COMPLY WITH FAA AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION", AND/OR FAA AC 150/5340-30J PART 2.5.3.4.
- HOLDING POSITION SIGNS FOR RUNWAYS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY SERIES CIRCUIT TO BE ILLUMINATED WHEN THE ASSOCIATED RUNWAY LIGHTS ARE ILLUMINATED TO COMPLY WITH FAA AC150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION".
- CONCRETE STEEL REINFORCEMENT SHALL BE TYPE ASTM A615 OR A706 GRADE 60 WELDED STEEL WIRE FABRIC SHALL CONFORM TO AASHTO M55 OR AASHTO M221. ALL REINFORCEMENT SHALL HAVE A 3" MINIMUM CONCRETE COVER. REINFORCEMENT MAY BE ADJUSTED TO MISS INTERFERENCES. CONCRETE SHALL CONFORM TO ITEM 610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
- SEE SPECIFICATION ITEM L-125 FOR ADDITIONAL REQUIREMENTS ON TAXI GUIDANCE SIGNS.
- CONTRACTOR SHALL TEST THE EARTH GROUND RESISTANCE FOR THE GROUND ROD AT EACH RUNWAY/TAXI GUIDANCE SIGN

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

| SIGN NUMBER | LOCATION | PROPOSED | | GROUND RESISTANCE | REMARKS |
|-------------|--|----------|--------|-------------------|--|
| | | SIDE A | SIDE B | | |
| R1-TGS1 | RUNWAY 31 INTERSECTION WITH TAXIWAY A2 | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS2 | TAXIWAY A2 INTERSECTION WITH RUNWAY 13-31 AT HOLD LINE | | | | NEW SIGN TYPE: L-858L(R/L) LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS3 | RUNWAY 31 INTERSECTION WITH TAXIWAY A1 | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS4 | TAXIWAY A1 INTERSECTION WITH RUNWAY 13 AT HOLD LINE | | | | NEW SIGN TYPE: L-858L(R/L) LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS5 | RUNWAY 13 INTERSECTION WITH RUNWAY 22-4 | | | | NEW SIGN TYPE: L-858R(L) MANDATORY HOLDING POSITION SIGN FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS6 | TAXIWAY C4 INTERSECTION WITH RUNWAY 31 AT HOLD LINE | | | | NEW SIGN TYPE: L-858L(R/L) LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS7 | RUNWAY 13 INTERSECTION WITH TAXIWAY C4 | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS8 | TAXIWAY C3 INTERSECTION WITH RUNWAY 13-31 AT HOLD LINE | | | | NEW SIGN TYPE: L-858L(R/L) LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS9 | RUNWAY 13 INTERSECTION WITH TAXIWAY C3 | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS10 | RUNWAY 31 INTERSECTION WITH TAXIWAY B | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS11 | TAXIWAY B INTERSECTION WITH RUNWAY 13-31 AT HOLD LINE | | | | NEW SIGN TYPE: L-858L(R/L) LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS12 | RUNWAY 13 INTERSECTION WITH TAXIWAY B | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R1-TGS13 | RUNWAY 31 INTERSECTION WITH RUNWAY 4-22 | | | | NEW SIGN TYPE: L-858R(L) MANDATORY HOLDING POSITION SIGN FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 13-31 LIGHTING CIRCUIT. |
| R2-TGS1 | TAXIWAY A INTERSECTION WITH RUNWAY 4-22 AT HOLD LINE | | | | NEW SIGN TYPE: L-858R(L) MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 4-22 LIGHTING CIRCUIT. |
| R2-TGS2 | RUNWAY 4 INTERSECTION WITH TAXIWAY A | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 4-22 LIGHTING CIRCUIT. |
| R3-TGS3 | TAXIWAY A INTERSECTION WITH RUNWAY 22-4 AT HOLD LINE | | | | NEW SIGN TYPE: L-858L(R/L) LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 4-22 LIGHTING CIRCUIT. |
| R2-TGS4 | RUNWAY 4 INTERSECTION WITH RUNWAY 13-31 | | | | NEW SIGN TYPE: L-858R(L) LOCATION/MANDATORY HOLDING POSITION SIGN FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 4-22 LIGHTING CIRCUIT. |
| R2-TGS5 | RUNWAY 22 INTERSECTION WITH RUNWAY 31-13 | | | | NEW SIGN TYPE: L-858R(L) MANDATORY HOLDING POSITION SIGN FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 4-22 LIGHTING CIRCUIT. |
| R2-TGS6 | RUNWAY 22 INTERSECTION WITH TAXIWAY A | | | | NEW SIGN TYPE: L-858Y(L) RUNWAY EXIT SIGN. CONNECT TO RUNWAY 4-22 LIGHTING CIRCUIT. |
| T1-TGS1 | TAXIWAY A NORTH OF APRON AND SOUTH OF INTERSECTION WITH TAXIWAY C | | | | NEW SIGN TYPE: L-858Y(L) OUTBOARD DESTINATION SIGN WITH INBOARD DESTINATION SIGN ON BACK SIDE. CONNECT TO TAXIWAY LIGHTING CIRCUIT NO. 1 LIGHTING CIRCUIT. |
| T1-TGS2 | TAXIWAY C3 NORTHEAST OF APRON AND PRIOR TO INTERSECTION WITH TAXIWAY C | | | | NEW SIGN TYPE: L-858Y(L) OUTBOARD DESTINATION SIGN WITH INBOARD DESTINATION SIGN ON BACK SIDE. CONNECT TO TAXIWAY LIGHTING CIRCUIT NO. 1 LIGHTING CIRCUIT. |

FOR BID



Kevin N. Lightfoot

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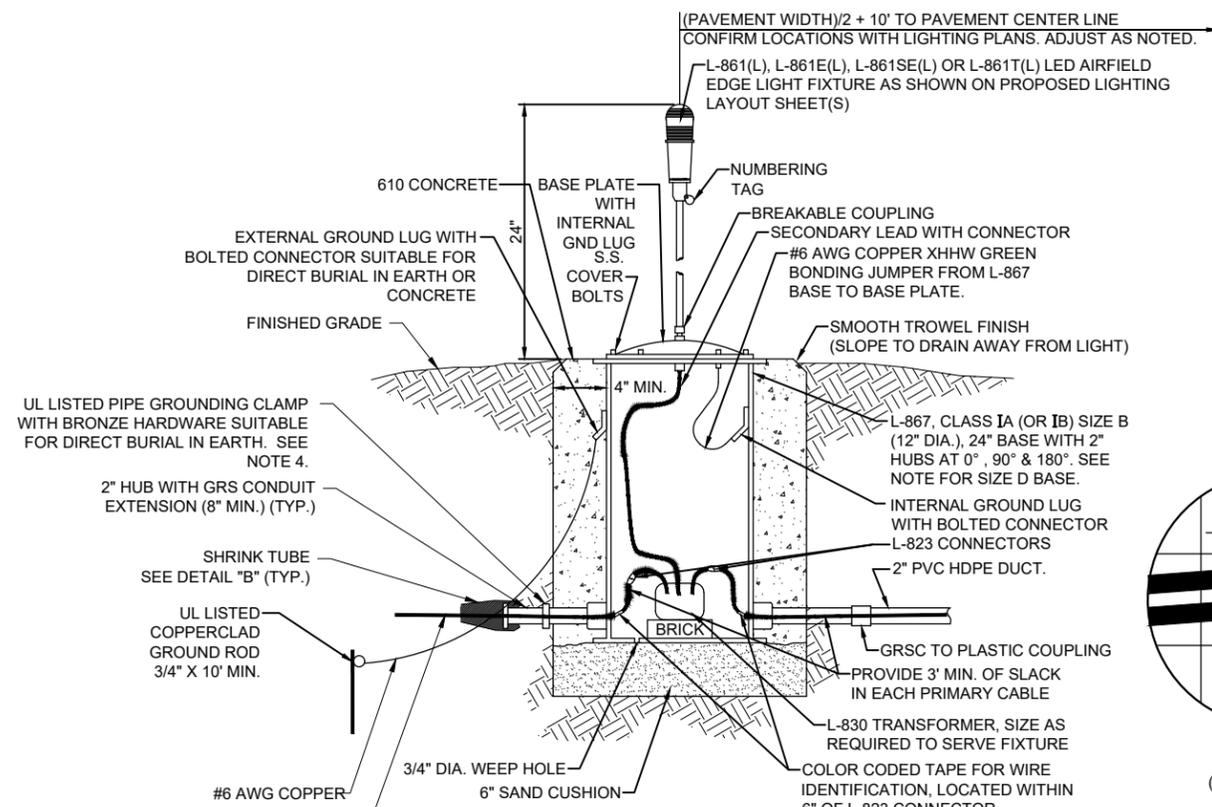
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SHEET TITLE

AIRFIELD LIGHT DETAILS

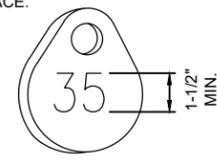
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MEDIUM INTENSITY AIRFIELD EDGE LIGHT - BASE MOUNTED

(NOT TO SCALE)

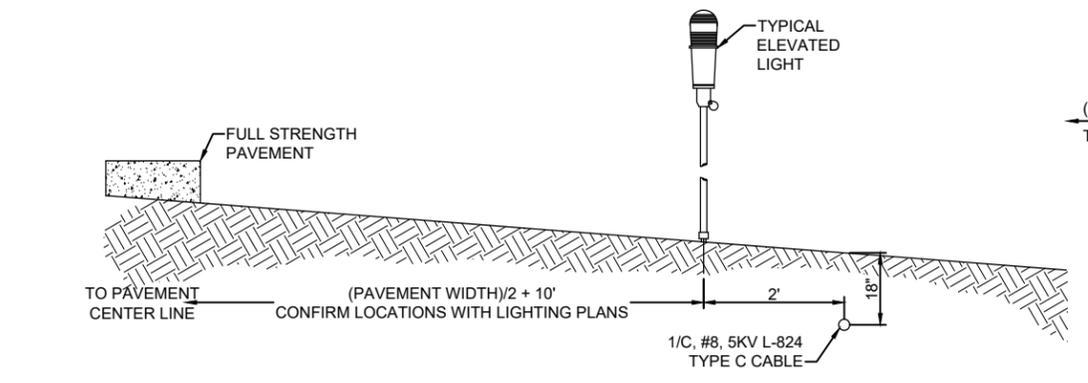
WHERE NOTED ON THE PLANS PROVIDE SIZE D (16 IN. NOMINAL DIAMETER) LIGHT BASE WITH 2" HUBS AT 0, 90, 180 AND 270 DEGREES TO ACCOMMODATE CONDUIT, DUCT, AND CABLE INTERFACE.



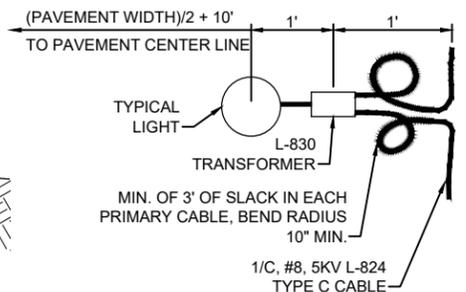
NUMBERING TAG DETAIL

(NOT TO SCALE)

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.



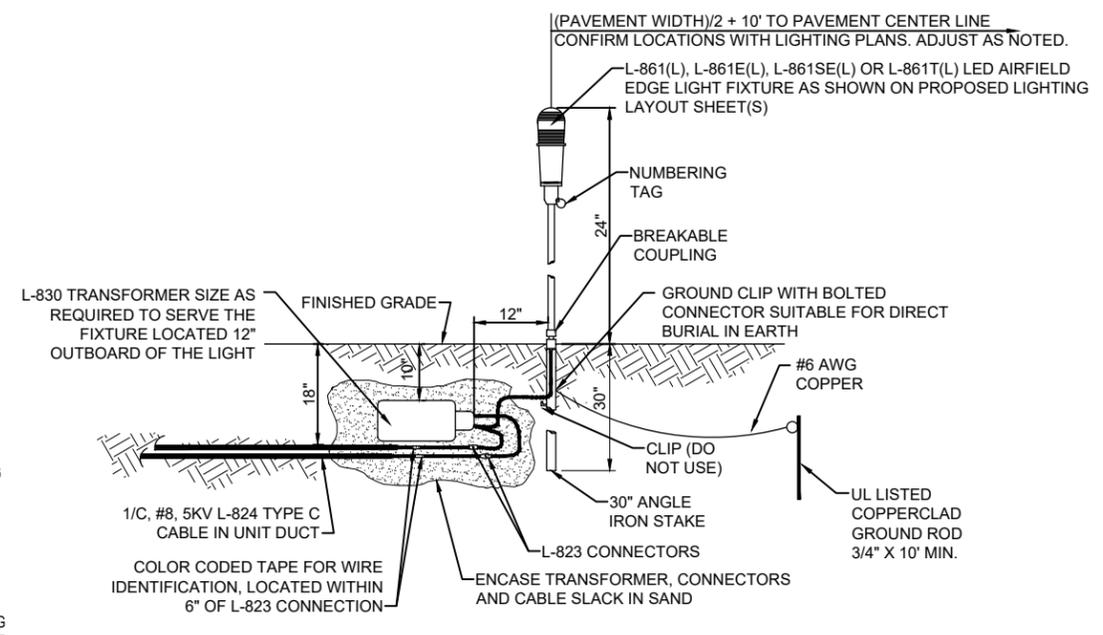
PROFILE VIEW



PLAN VIEW

LIGHT AND CABLE INSTALLATION DETAIL

(NOT TO SCALE)



MEDIUM INTENSITY AIRFIELD EDGE LIGHT - STAKE MOUNTED

(NOT TO SCALE)

NOTES:

- SEE ELECTRICAL NOTES SHEETS.
- SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING.
- SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
- WHERE GROUND LUGS ARE NOT ACCESSIBLE ON BASE CANS, PROVIDE A UL LISTED PIPE GROUND CLAMP RATED FOR DIRECT BURIAL IN EARTH AND BOND TO THE METAL CONDUIT EXTENSION TO PROVIDE GROUND PATH TO LIGHT BASE.
- THE PROPOSED AIRFIELD LIGHT FIXTURES SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-46 (CURRENT ISSUE(S) IN EFFECT) AND BE FAA APPROVED FOR TYPE L-861(L) RUNWAY EDGE LIGHTS, L-861E(L) OR L-861SE(L) THRESHOLD LIGHTS AND 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.
- 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.
- PRIOR TO INSTALLING THE AIRFIELD LIGHT FIXTURES, APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, BREAKABLE COUPLING, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- SERIES CIRCUIT ISOLATION TRANSFORMERS FOR THE AIRFIELD LIGHTING SHALL BE MANUFACTURED TO FAA SPECIFICATION AC 150/5345-47, (CURRENT EDITION IN EFFECT), AND SHALL BE FAA-APPROVED (ETL/INTERTEK TESTING SERVICES-CERTIFIED). SERIES CIRCUIT TRANSFORMER SHALL BE PROPERLY SIZED FOR THE RESPECTIVE AIRFIELD LIGHTING DEVICE, AND SHALL BE AS RECOMMENDED BY THE RESPECTIVE EQUIPMENT MANUFACTURER. CONFIRM PROPER TRANSFORMER SELECTION AND SIZING WITH THE RESPECTIVE EQUIPMENT MANUFACTURER.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING AND SPLICE CANS SHALL BE IN ACCORDANCE WITH ITEM 610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
- IDENTIFICATION TAGS SHALL BE ATTACHED TO EACH AIRFIELD LIGHT FIXTURE.
- PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, RUBBER AND PLASTIC ELECTRICAL TAPES SHALL BE SCOTCH ELECTRICAL TAPE NUMBERS 130C LINERLESS RUBBER SPLICING TAPE (2" WIDE) AND 88 (1.5" WIDE) RESPECTIVELY, AS MANUFACTURED THE MINNESOTA MINING AND MANUFACTURING COMPANY, OR EQUIVALENT.

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



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

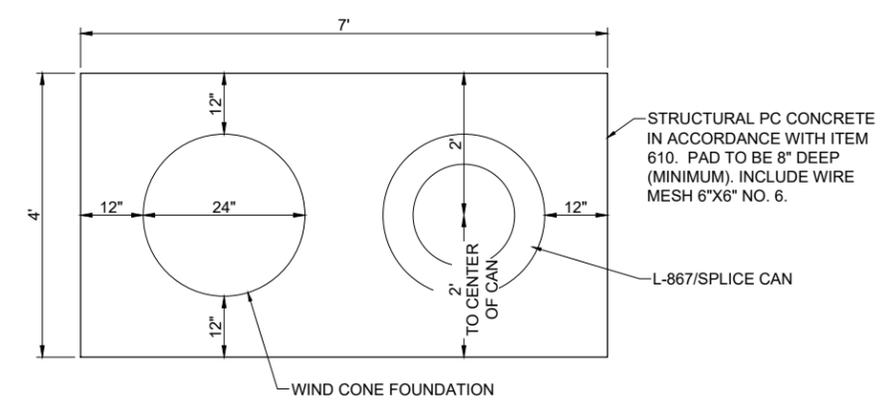
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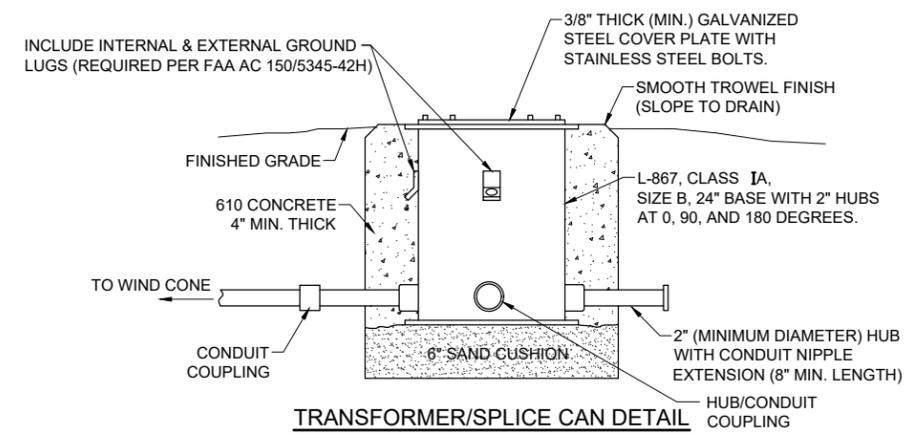
ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-503-DETL.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

L-807 WIND CONE DETAILS

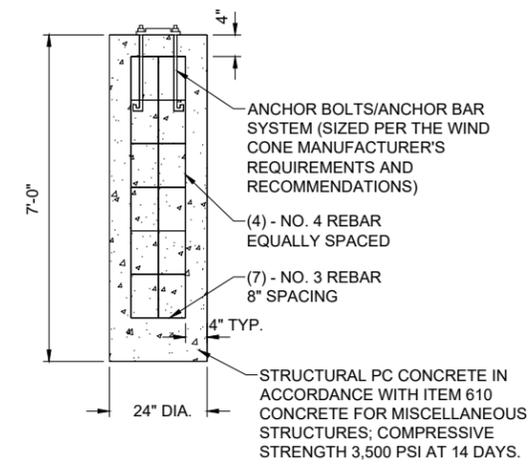


CONCRETE PAD PLAN VIEW
(NOT TO SCALE)

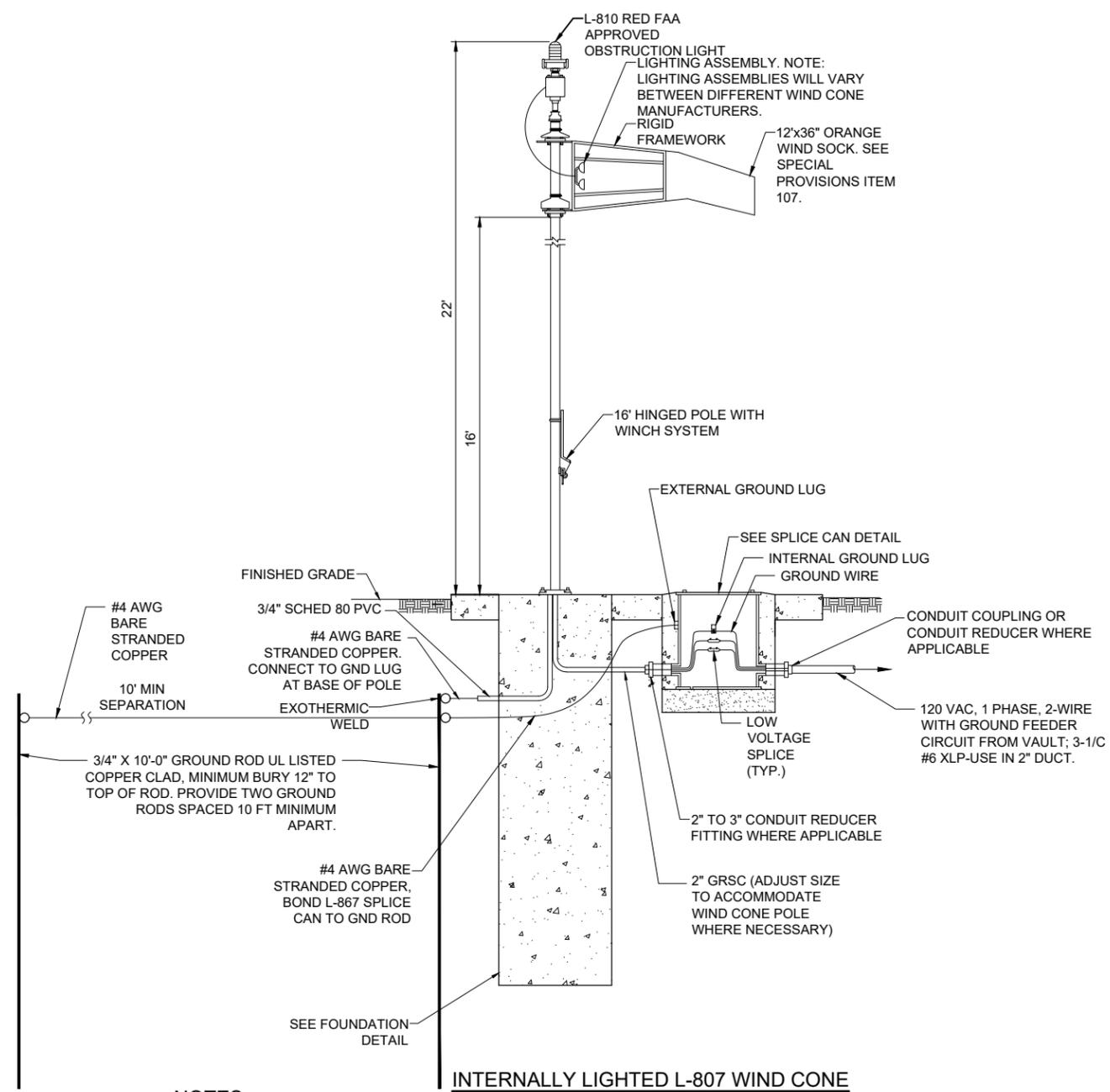


TRANSFORMER/SPLICE CAN DETAIL
(NOT TO SCALE)

- NOTES:**
1. INCLUDE INTERNAL AND EXTERNAL GROUND LUGS.
 2. L-867 CAN FOR WIND CONE SHALL HAVE 2" HUB AT 0°, 2" HUB AT 90°, AND 2" HUB AT 180°. 3" HUBS ARE ALSO ACCEPTABLE.



FOUNDATION DETAIL
(NOT TO SCALE)

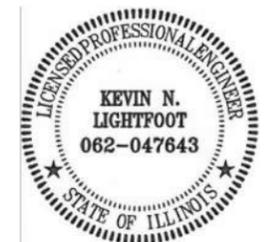


INTERNALLY LIGHTED L-807 WIND CONE
(NOT TO SCALE)

NOTES

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, INSTALLING, OR RECONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
3. WIND CONE SHALL BE FAA APPROVED IN ACCORDANCE WITH FAA AC 150/5345-27 (CURRENT ISSUE IN EFFECT), TYPE L-807(L); WITH LIGHT EMITTING DIODE ILLUMINATION, STYLE I-B; INTERNALLY LIGHTED, SIZE 2; 12 FEET IN LENGTH BY 36-INCH IN THROAT DIAMETER SUITABLE FOR OPERATION ON A 120 VAC, 1 PHASE, 2-WIRE POWER SUPPLY. WIND SOCK SHALL BE ORANGE IN COLOR.
4. L-807(L) WIND CONE WILL BE PAID FOR UNDER ITEM AR107812 L-807 WC-12' INTERNALLY LIT PER EACH. SPLICE CAN FOR WIND CONE WILL BE INCIDENTAL TO THE RESPECTIVE WIND CONE PAY ITEM.
5. REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 OR ASTM A706, GRADE 60 AND SHALL BE MANUFACTURED FROM 100% DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS AND THE STEEL PRODUCTS PROCUREMENT ACT. INCLUDE CERTIFICATION OF 100% DOMESTIC STEEL WITH SHOP DRAWING SUBMITTAL.
6. FOR EACH GROUNDING ELECTRODE SYSTEM (GROUND ROD) THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUNDING SYSTEM WITH A INSTRUMENT THAT IS SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH GROUNDING ELECTRODE SYSTEM. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER.
7. RESTORE TURF AREAS AFFECTED BY WIND CONE INSTALLATION.

FOR BID



Kevin N. Lightfoot

DATE: 6/10/2022 LICENSE: 11/30/2023
SIGNED: 6/10/2022 EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

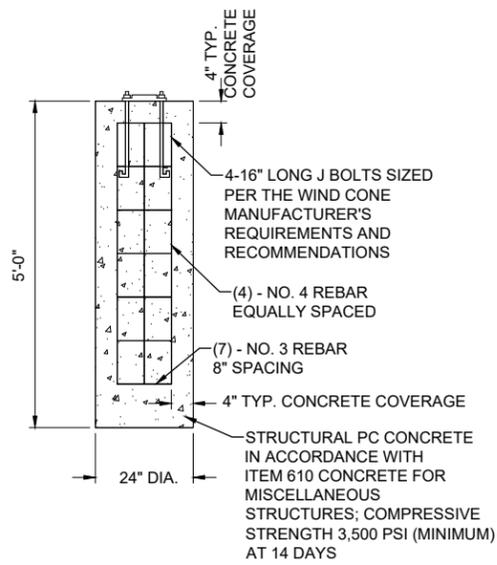
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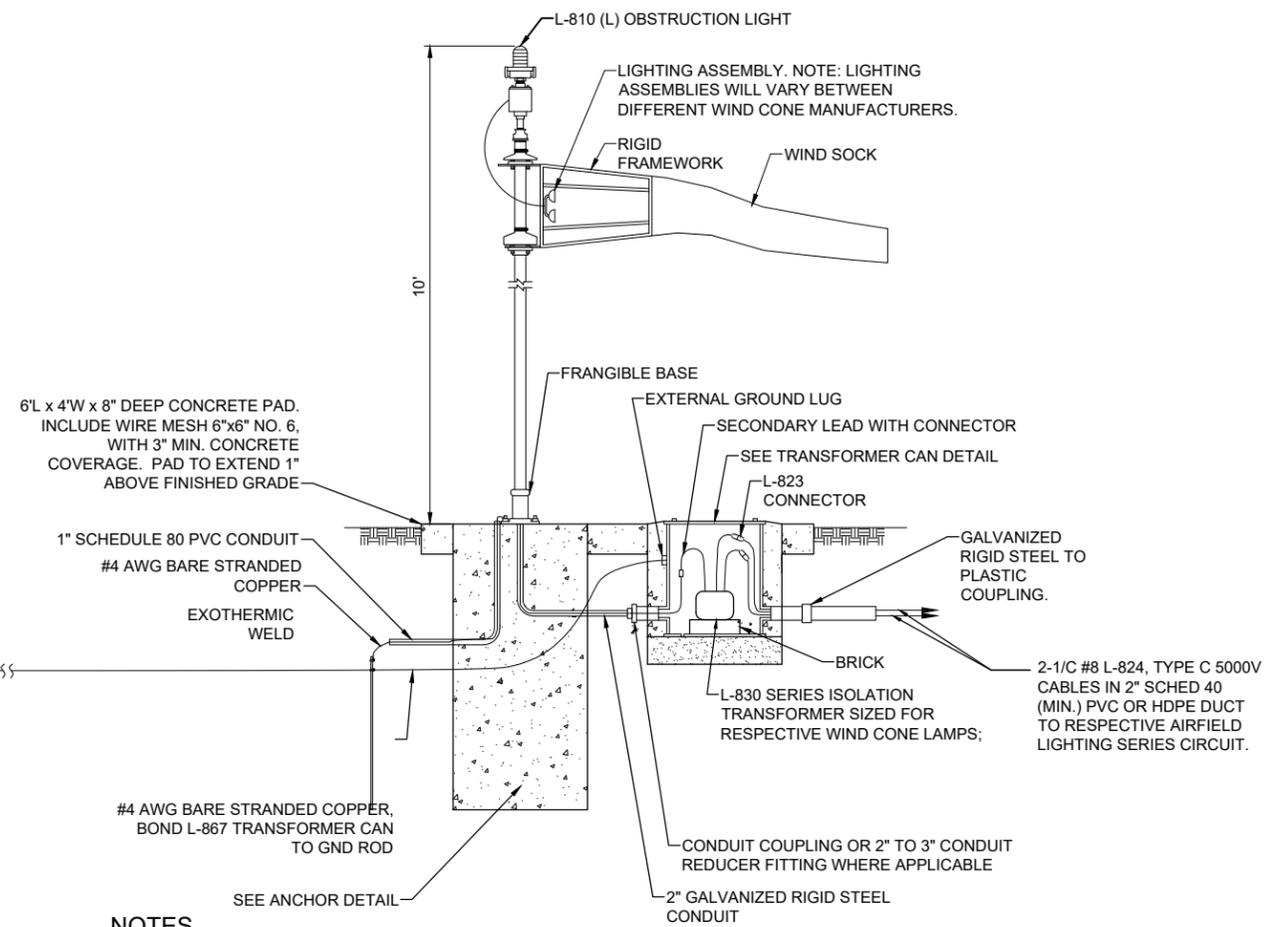
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PROJECT NO: 21A0121D
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DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

L-806 WIND CONE DETAILS



3/4" X 10' LONG UL LISTED COPPERCLAD GROUND ROD (TYP. FOR 2). GROUND RODS SHALL BE SPACED NOT LESS THAN ONE ROD LENGTH APART

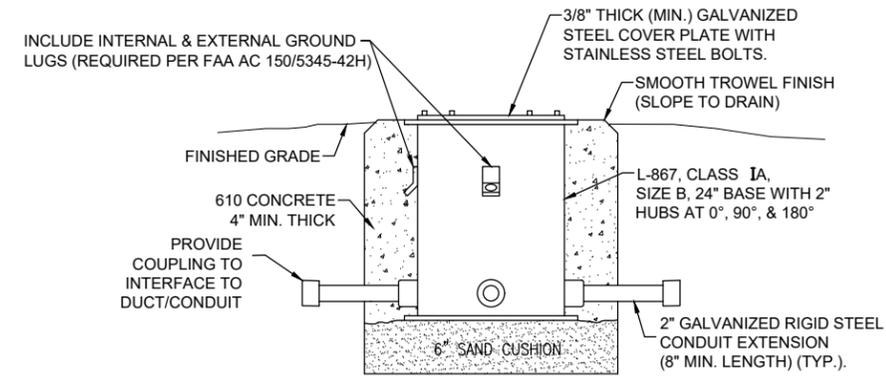


NOTES

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, INSTALLING, OR RECONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
- SUPPLEMENTAL WIND CONES SHALL BE FAA APPROVED TYPE L-806(L) WITH LIGHT EMITTING DIODE ILLUMINATION, STYLE I-B (INTERNALLY LIGHTED), SIZE 1 (18-INCH DIAMETER BY 8 FEET LONG), AND SUITABLE FOR 6.6 AMP SERIES CIRCUIT POWER. WIND CONES SHALL INCLUDE CONSTANT-BRIGHTNESS SERIES CIRCUIT POWER ADAPTER. SEE SPECIAL PROVISION SPECS. WIND CONES ARE HALI-BRITE PRODUCT NUMBER L806-S1-IN-66A-0N-5 WITH REPLACEMENT LAMP ASSEMBLY 9200-0039.
- THE RESPECTIVE RUNWAY LIGHTING CIRCUIT IS POWERED BY AN L-828, CLASS 1 - 6.6 AMP OUTPUT CURRENT, STYLE 1; 3 BRIGHTNESS STEPS CONSTANT CURRENT REGULATOR. COORDINATE WITH THE RESPECTIVE WIND CONE MANUFACTURER TO PROVIDE A COMPATIBLE AND PROPERLY SIZED SERIES ISOLATION TRANSFORMER FOR EACH WIND CONE.
- SUPPLEMENTAL L-806 WIND CONES WILL BE PAID FOR UNDER ITEM AR107508 L-806 WC 8' INTERNALLY LIT PER EACH. SPLICE/TRANSFORMER CANS FOR WIND CONE SERIES CIRCUIT TRANSFORMERS WILL BE INCIDENTAL TO THE RESPECTIVE WIND CONE PAY ITEM.
- REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706 GRADE 60 OR ASTM A615 GRADE 6 AND SHALL BE MANUFACTURED FROM 100% DOMESTIC STEEL. WELDED WIRE FABRIC SHALL CONFORM TO AASHTO M55, ASTM A82, OR ASTM A185 AND SHALL BE MANUFACTURED FROM 100% DOMESTIC STEEL.
- FOR EACH GROUNDING ELECTRODE SYSTEM (GROUND ROD) THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUNDING SYSTEM WITH A INSTRUMENT THAT IS SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH GROUNDING ELECTRODE SYSTEM. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN.
- RESTORE TURF AREAS AFFECTED BY WIND CONE INSTALLATION.

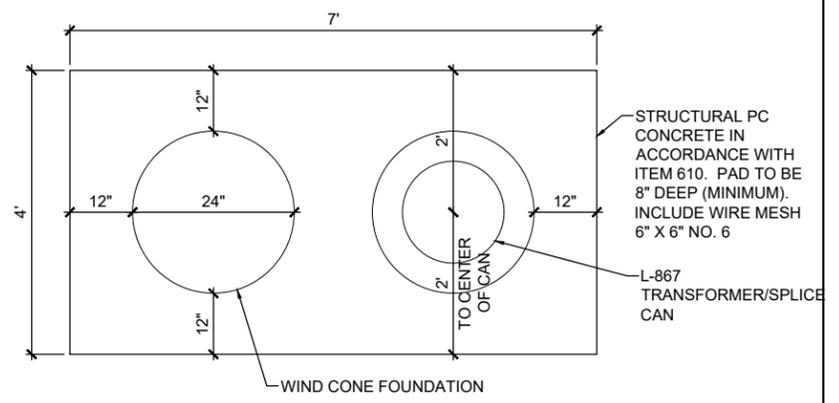
INTERNALLY LIGHTED L806 WIND CONE (SERIES CIRCUIT TYPE)

"NOT TO SCALE"



WIND CONE TRANSFORMER CAN DETAIL

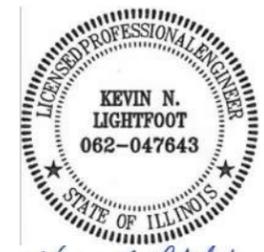
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CONCRETE PAD PLAN VIEW

"NOT TO SCALE"

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

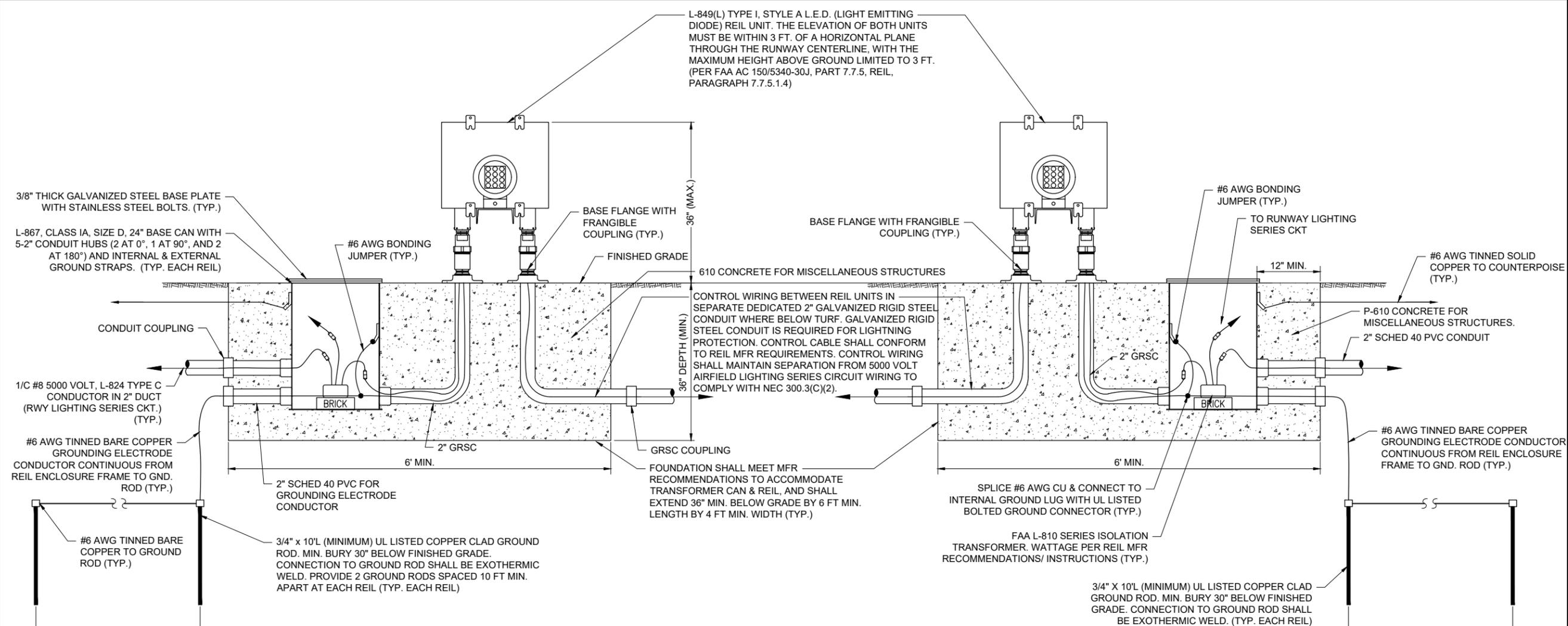
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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
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DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

REIL DETAILS AND NOTES



REIL INSTALLATION DETAIL
NOT TO SCALE

REIL NOTES

- REILS SHALL BE FAA APPROVED CONFORMING TO FAA AC 150/5345-51B "SPECIFICATION FOR DISCHARGE-TYPE FLASHING LIGHT EQUIPMENT", L-849(L) (LIGHT EMITTING DIODE) TYPE I REIL POWERED BY CONSTANT CURRENT 6.6 AMP POWER SUPPLY, STYLE A - UNIDIRECTIONAL, HIGH INTENSITY, ONE BRIGHTNESS STEP. SEE SPECIFICATION ITEM 125 FOR ADDITIONAL REQUIREMENTS ON REILS.
- REILS SHALL BE AIMED AT ANGLE 10 DEGREES VERTICALLY AND TOED OUT 15 DEGREES FROM THE LINE PARALLEL TO THE RUNWAY CENTERLINE. CONTRACTOR SHALL STENCIL HORIZONTAL AND VERTICAL AIMING ANGLES ON EACH REIL UNIT, BLACK LETTERING 1" HIGH OR SIZED TO FIT ON REIL HOUSING BACK SIDE.
- REILS FOR RUNWAY 13 END, 31 END, 4 END AND 22 END SHALL BE LOCATED LATERALLY 40 FEET FROM THE RUNWAY PAVEMENT EDGE AND LONGITUDINALLY 40 FEET DOWNWIND OF THE THRESHOLD. SPACE THE REIL LIGHT UNITS EQUALLY FROM THE RUNWAY CENTERLINE.
- ANY AND ALL TRENCHES AND DISTURBED AREAS WILL BE BACKFILLED AND RESTORED TO A SMOOTH GRADE AND SEEDED TO THE SATISFACTION OF THE ENGINEER. ALL TRENCH SETTLEMENT SHALL BE CORRECTED FOR A PERIOD OF ONE YEAR. RESTORATION, GRADING, SEEDING, AND MULCHING OF AREAS DISTURBED DURING THE REIL INSTALLATION AND ASSOCIATED CABLE WILL BE INCIDENTAL TO THE INSTALLATION OF THE REILS.
- GROUNDING FOR REILS. GROUNDING FOR REILS SHALL CONFORM TO THE RESPECTIVE REIL MANUFACTURER'S INSTALLATION INSTRUCTIONS, AS DETAILED ON THE PLANS, AND AS SPECIFIED HEREIN. FURNISH AND INSTALL TWO 3/4-INCH DIAMETER BY 10-FOOT LONG COPPER CLAD GROUND RODS AT EACH REIL UNIT. GROUND RODS SHALL BE BURIED 30" MINIMUM BELOW GRADE. BOND EACH REIL UNIT HOUSING AND THE REIL BASE CAN TO THE RESPECTIVE GROUND ROD IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WITH A #6 AWG BARE SOLID OR STRANDED (PER REIL MANUFACTURER REQUIREMENTS) COPPER GROUNDING ELECTRODE CONDUCTOR. ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD AS MANUFACTURED BY CADWELD, THERMOWELD, ULTRAWELD, OR APPROVED EQUAL. CONNECTIONS TO REIL UNIT FRAMES SHALL BE AS RECOMMENDED BY THE MANUFACTURER OR WITH UL LISTED GROUNDING CONNECTORS. CONNECTIONS TO THE BASE / TRANSFORMER CAN SHALL BE WITH UL LISTED BOLTED CONNECTOR OR ONE-HOLE COMPRESSION LUG & 3/8" STAINLESS STEEL BOLTS, NUTS, & WASHERS.
- PRIOR TO FINAL ACCEPTANCE AND ACTIVATION, THE COMPLETED REIL INSTALLATION WILL REQUIRE A FLIGHT CHECK TO BE SCHEDULED AND CONDUCTED BY THE FAA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE A REPRESENTATIVE PRESENT TO MAKE ANY NECESSARY ADJUSTMENTS IN THE INSTALLATION AND/OR AIMING OF THE REIL UNITS FOR THE FLIGHT SYSTEM CHECKS.

FOR BID



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
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3-17-SBGP-156/162/171

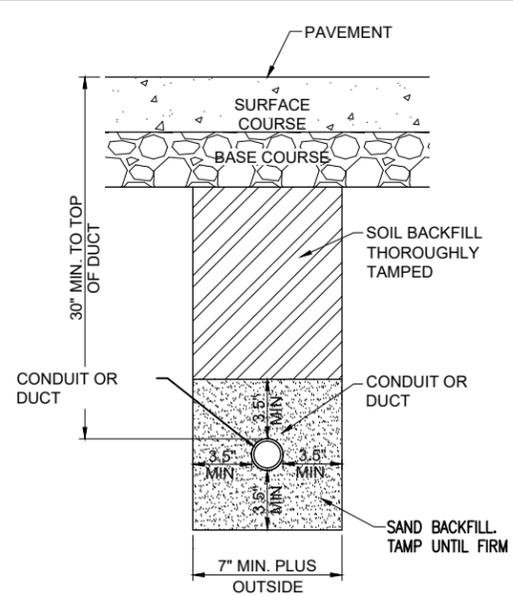
Contract No.: JA040

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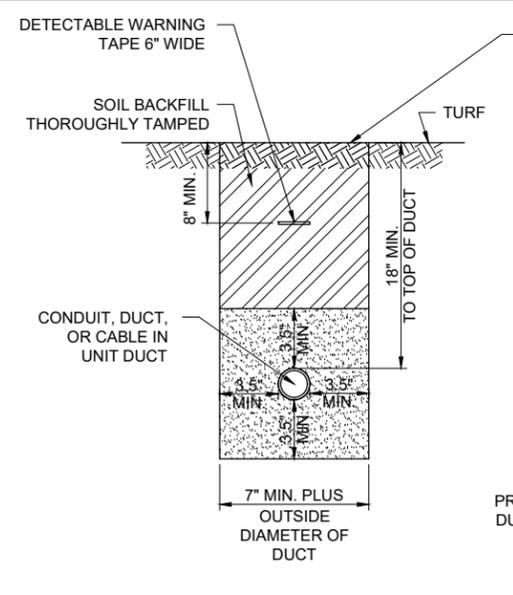
ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-507-DETL.DWG
DESIGN BY: KNL 4/2/2022
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SHEET TITLE

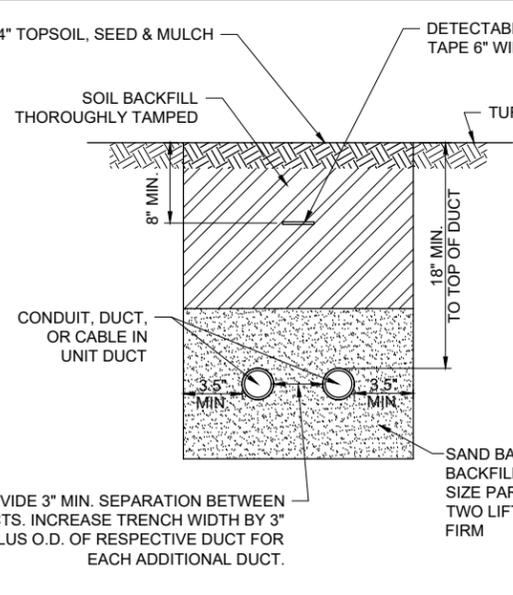
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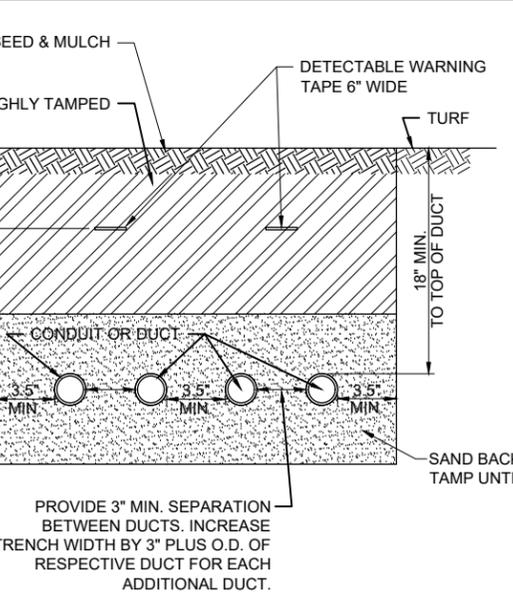
CONDUIT IN TRENCH - PAVED AREAS
"NOT TO SCALE"



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



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



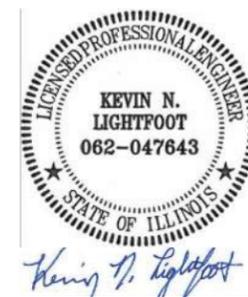
NOTES:

- DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- TRENCHES WITH MORE THAN TWO DUCTS OR CABLE IN UNIT DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, DUCT, OR CABLE IN UNIT DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
- DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. MINIMUM COVER REQUIREMENTS FOR DUCTS CONTAINING NAVAID FEEDER CIRCUITS SHALL BE 24". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED BELOW PAVEMENT OR ROADWAYS IS 30". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED IN AREAS SUBJECT TO FARMING IS 42". MINIMUM COVER FOR DUCTS CONTAINING SECONDARY ELECTRIC SERVICE CONDUCTORS SHALL BE 36" OR AS REQUIRED BY THE SERVING ELECTRIC UTILITY COMPANY. ADJUST/INCREASE BURIAL DEPTHS TO ACCOMMODATE SITE CONDITIONS, DRAINAGE AND/OR OBSTRUCTIONS. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
- HIGH-VOLTAGE CIRCUIT WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW-VOLTAGE CIRCUIT WIRING (RATED 600 VOLTS AND BELOW) SHALL MAINTAIN SEPARATION FROM EACH OTHER. HIGH-VOLTAGE WIRING AND LOW-VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, HANDHOLE, OR JUNCTION BOX. CORRECTIVE WORK WILL BE REQUIRED TO SEPARATE HIGH VOLTAGE SERIES CIRCUIT CONDUCTORS FROM LOW VOLTAGE CONDUCTORS WHERE THEY ARE INSTALLED IN THE SAME RACEWAY.
- SERVICE CONDUCTORS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH FEEDER CIRCUITS, BRANCH CIRCUITS OR CONTROL CIRCUITS.
- COMMUNICATION CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH POWER CIRCUITS.
- HOME RUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.
- ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.
- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

- CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH UTILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
- ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.
- CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESPECTIVE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.

- PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.
- THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. THE CONTRACTOR WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED UNDERGROUND IMPROVEMENTS
- CONDUITS FOR DIRECT BURIAL OR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 (MINIMUM) PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651, LISTED SUITABLE FOR UNDERGROUND USE EITHER DIRECT-BURIED OR ENCASED IN CONCRETE, OR SCHEDULE 40 (MINIMUM) HDPE CONDUIT, UL LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND LISTED SUITABLE FOR UNDERGROUND USE; EITHER DIRECT BURY OR ENCASED IN CONCRETE. HEAVIER WALL CONDUITS SHALL BE FURNISHED FOR RESPECTIVE APPLICATIONS WHERE DETAILED HEREIN.
- CONDUITS FOR DIRECTIONAL BORING SHALL BE SCHEDULE 40 PVC CONDUIT OR SCHEDULE 80 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651 AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, SCHEDULE 80 HDPE CONDUIT, UL-LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, OR WALL TYPE MINIMUM SDR 11 HDPE CONDUIT MANUFACTURED IN ACCORDANCE WITH ASTM D-3350 (SPECIFICATION OF POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS) AND ASTM F2160 (STANDARD SPECIFICATION FOR SOLID WALL, HIGH-DENSITY POLYETHYLENE CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER), AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION. PER NEC 300.5 (K), RACEWAYS INSTALLED USING DIRECTIONAL BORING EQUIPMENT SHALL BE APPROVED FOR THE PURPOSE.
- UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

FOR BID



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEIUM
INTENSITY LIGHTS ON
RUNWAY 13-31 & 4-22,
ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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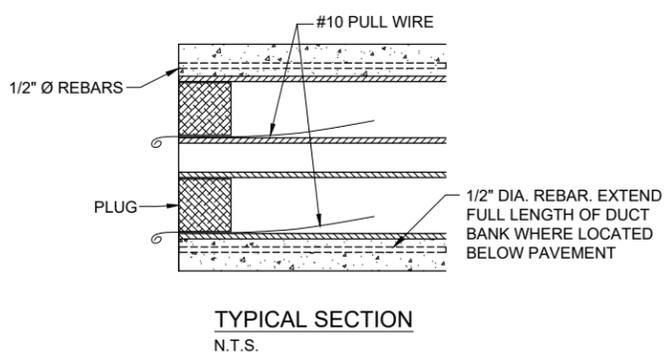
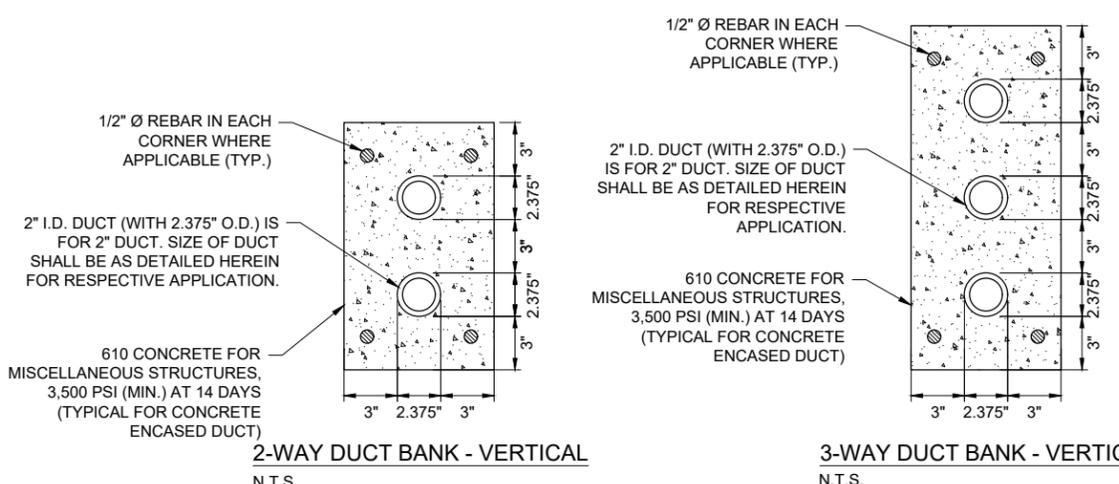
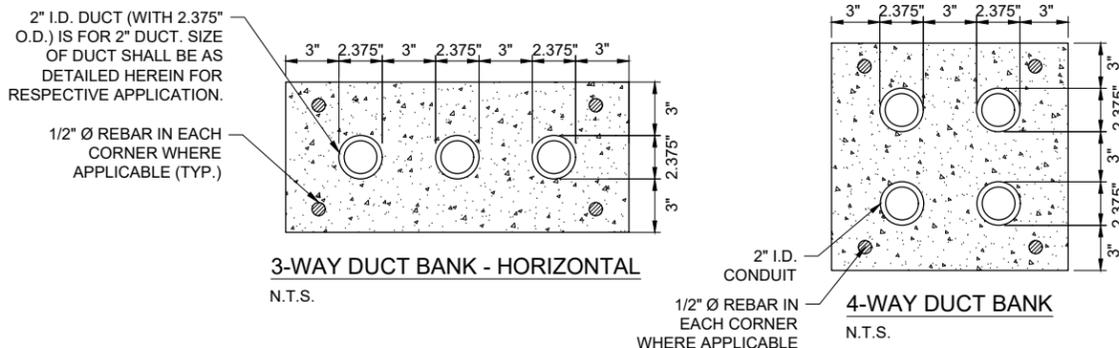
ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
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DRAWN BY: CWS 5/9/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

DUCT BANK DETAILS
AND NOTES

DUCT INSTALLATION NOTES

- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- 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).
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- INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
- DUCTS INSTALLED IN TRENCH SHALL BE INSTALLED 18 IN. MINIMUM BELOW GRADE IN TURF AREAS NOT SUBJECT TO FARMING. DUCTS LOCATED IN AREAS SUBJECT TO FARMING SHALL BE 42 IN. MINIMUM BELOW GRADE. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 24" IN AREAS UNDER AIRFIELD PAVEMENTS. WHERE DETAILED ON THE PLANS OR WHERE REQUIRED TO AVOID OBSTRUCTIONS, DUCTS SHALL BE BURIED DEEPER.
- 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.
- UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- 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.
- CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION.
- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE: ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

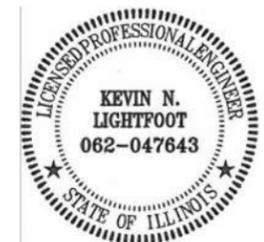


DUCT INSTALLATION NOTES

- DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., CARLON, OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
- PROVIDE REBAR WHERE APPLICABLE TO ACCOMMODATE INTERFACE OF CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLE. PROVIDE REBAR REINFORCEMENT WHERE DUCT BANK IS LOCATED BELOW PAVEMENT. REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60, OR ASTM A615, GRADE 60.

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FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No: 3-17-SBGP-156/162/171

Contract No.: JA040

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ISSUE: JUNE 10, 2022

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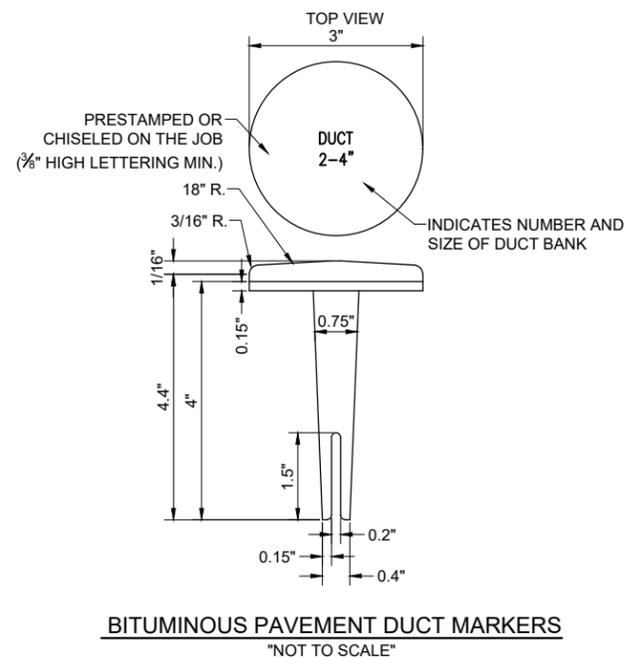
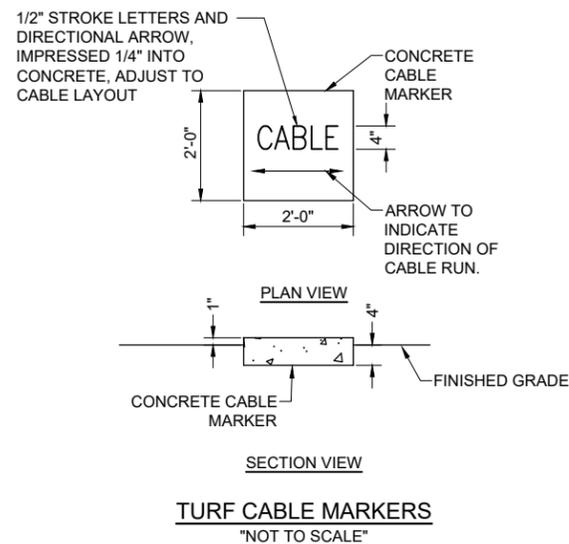
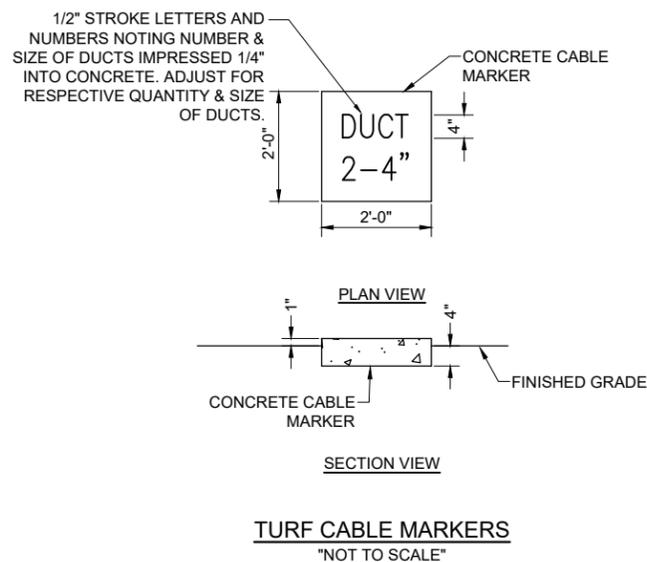
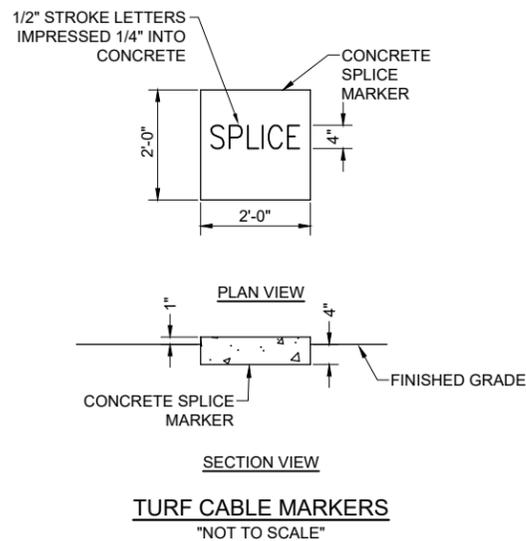
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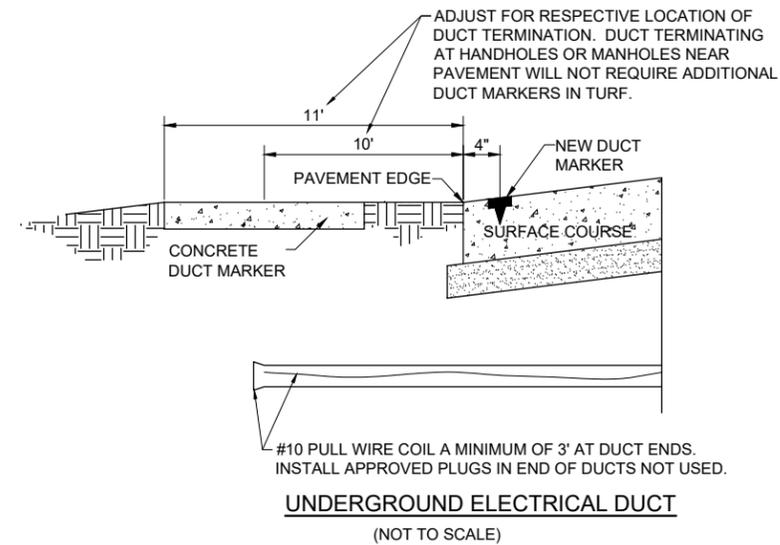
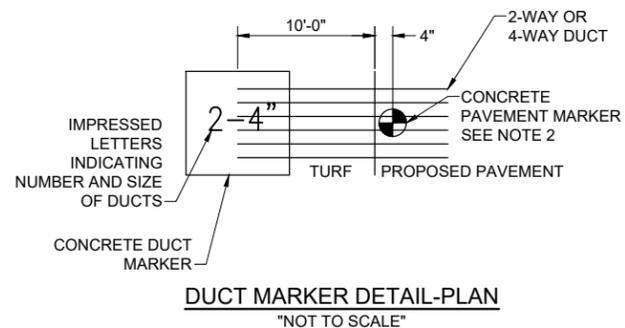
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SHEET TITLE

CABLE AND DUCT MARKER DETAILS



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



CABLE & DUCT MARKER NOTES:

- THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
- BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE INFORMED AS DESCRIBED IN NOTE 4.
- UNDERGROUND CABLE RUNS MUST BE IDENTIFIED BY CABLE MARKERS AT 200 FEET (61 M) MAXIMUM SPACING WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS MUST BE INSTALLED ABOVE THE CABLE. CABLE MARKERS ARE NOT REQUIRED FOR CABLE RUNS BETWEEN RUNWAY/TAXIWAY EDGE LIGHTS.
- CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
- EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED:
 - REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - INCREASE THE MARKER SIZE TO 30" X 30".
 - PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE
- TURF DUCT MARKERS ARE NOT REQUIRED AT PAVEMENT CROSSINGS WHERE DUCTS TERMINATE IN HANDHOLES, OR JUNCTION STRUCTURES.
- LOCATION OF ALL DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, MUST BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS MUST BE PLACED ABOVE THE SPLICE/CONNECTIONS. DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICES SHALL BE AVOIDED WHERE POSSIBLE. CABLE SPLICES SHALL BE LOCATED IN SPLICE CANS, LIGHT BASES, HANDHOLES, MANHOLES, OR OTHER JUNCTION STRUCTURES UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.
- THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: RWY 4-22, PAPI-4, PAPI-22.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

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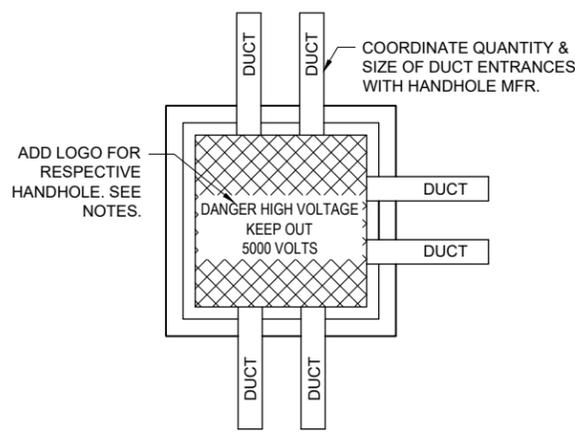
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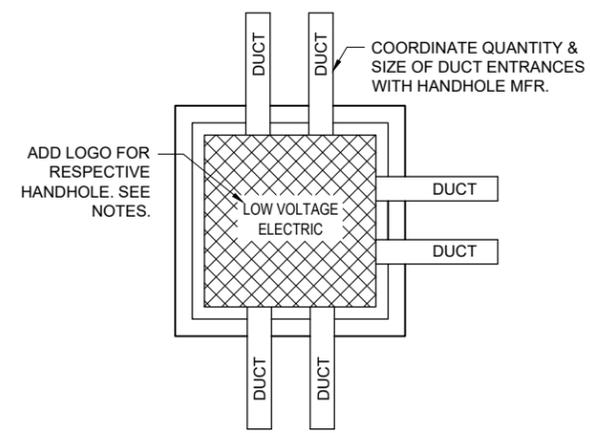
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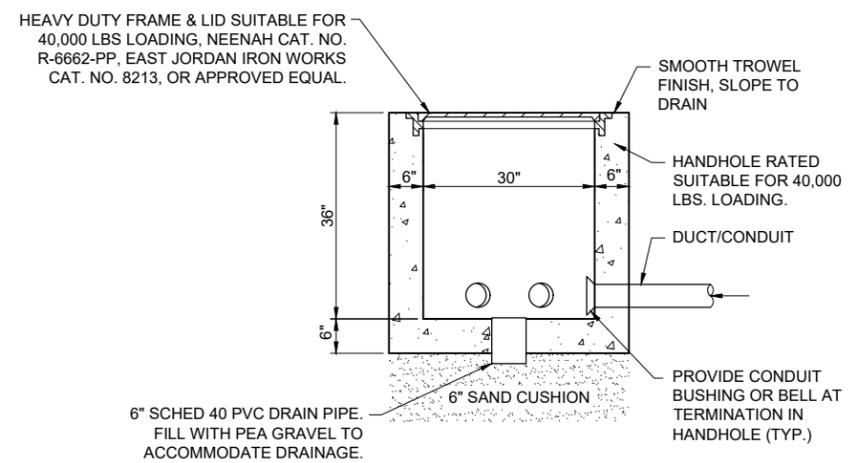
HANDHOLE AND SPLICE CAN DETAILS



HIGH VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"



LOW VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"

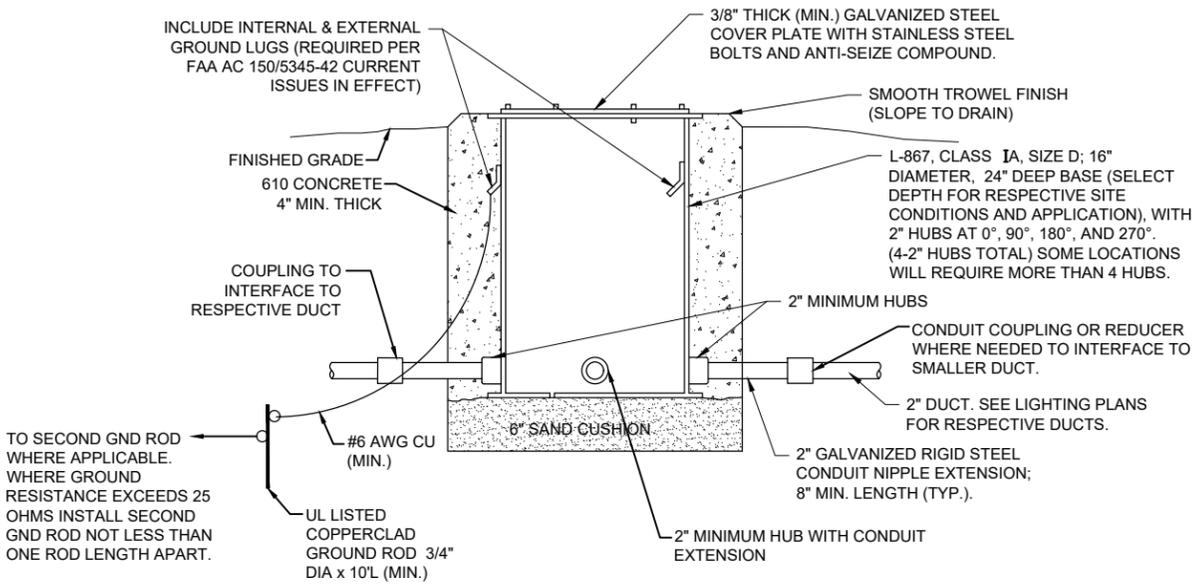


ELEVATION
"NOT TO SCALE"

HANDHOLE NOTES:

- LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V - 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.
- ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 40,000 POUND LOADS.
- REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
- CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
- HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURER MUST BE ON THE IDOT (ILLINOIS DEPARTMENT OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
- FRAMES AND LIDS (CASTINGS) SHALL BE MADE IN THE USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENTS.
- COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
- ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HANDHOLES WITH SIMILAR DIMENSIONS MEETING STRENGTH AND LOADING REQUIREMENTS WILL BE CONSIDERED.

ELECTRICAL HANDHOLE
"NOT TO SCALE"

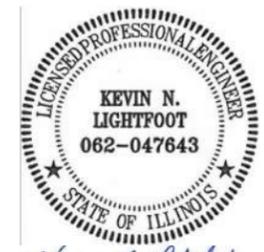


SPLICE CAN/JUNCTION CAN DETAIL
"NOT TO SCALE"

NOTES FOR SPLICE CAN/JUNCTION CAN DETAIL:

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

FOR BID



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

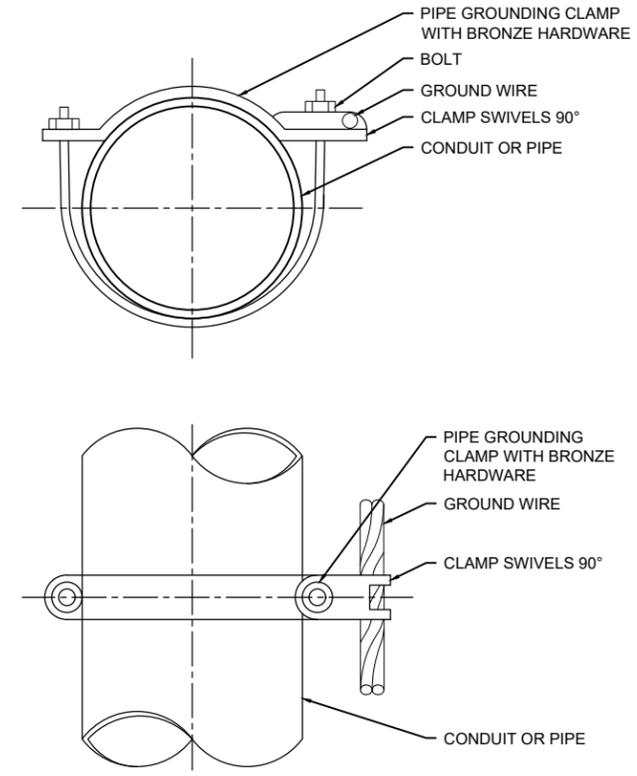
Contract No.: JA040

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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-510-DETL.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

GROUNDING DETAILS

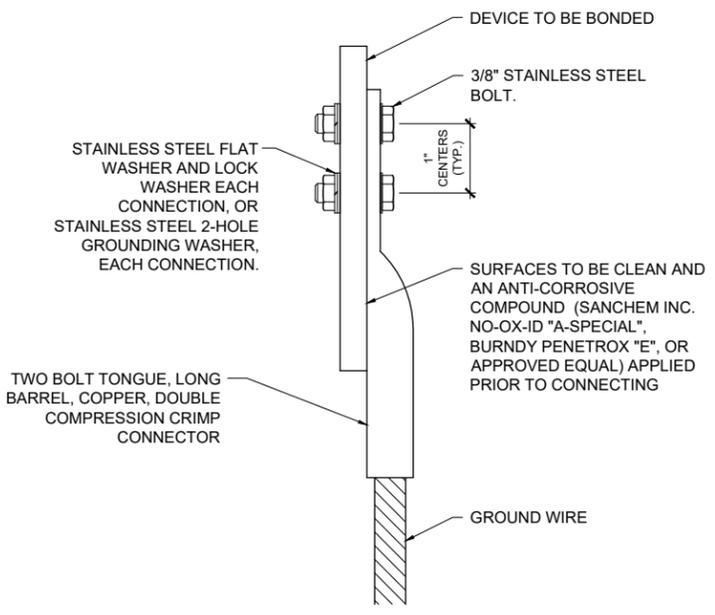


PIPE GROUNDING CLAMP TABLE (OR APPROVED EQUAL)

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

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

PIPE/CONDUIT GROUNDING CLAMP DETAIL

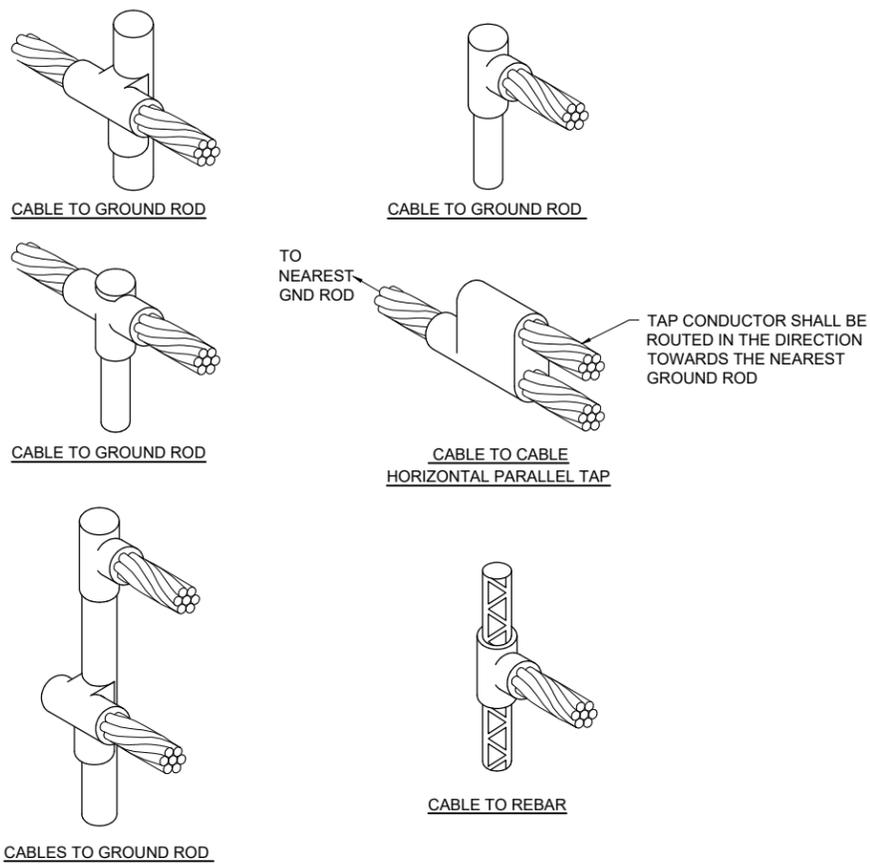


2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)

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

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

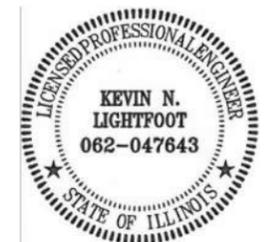


EXOTHERMIC WELD DETAILS

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

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FOR BID



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No: 3-17-SBGP-156/162/171

Contract No.: JA040

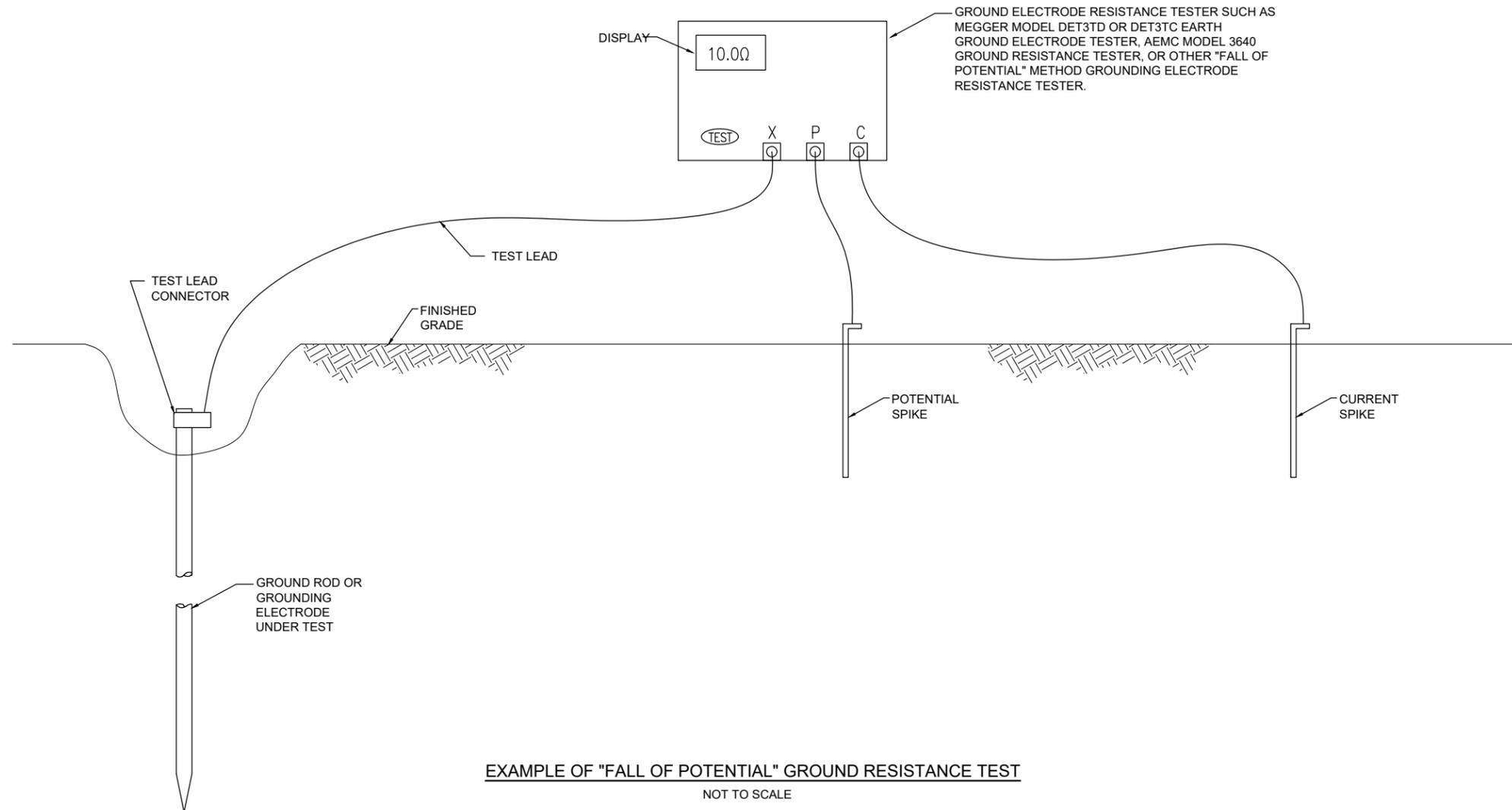
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ISSUE: JUNE 10, 2022

PROJECT NO: 21A0121D
CAD FILE: E-511-DETL.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

GROUND RESISTANCE TESTING DETAILS

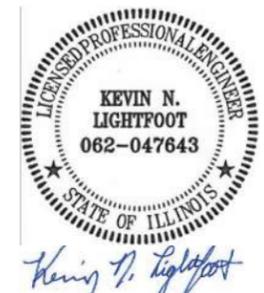


EXAMPLE OF "FALL OF POTENTIAL" GROUND RESISTANCE TEST
NOT TO SCALE

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



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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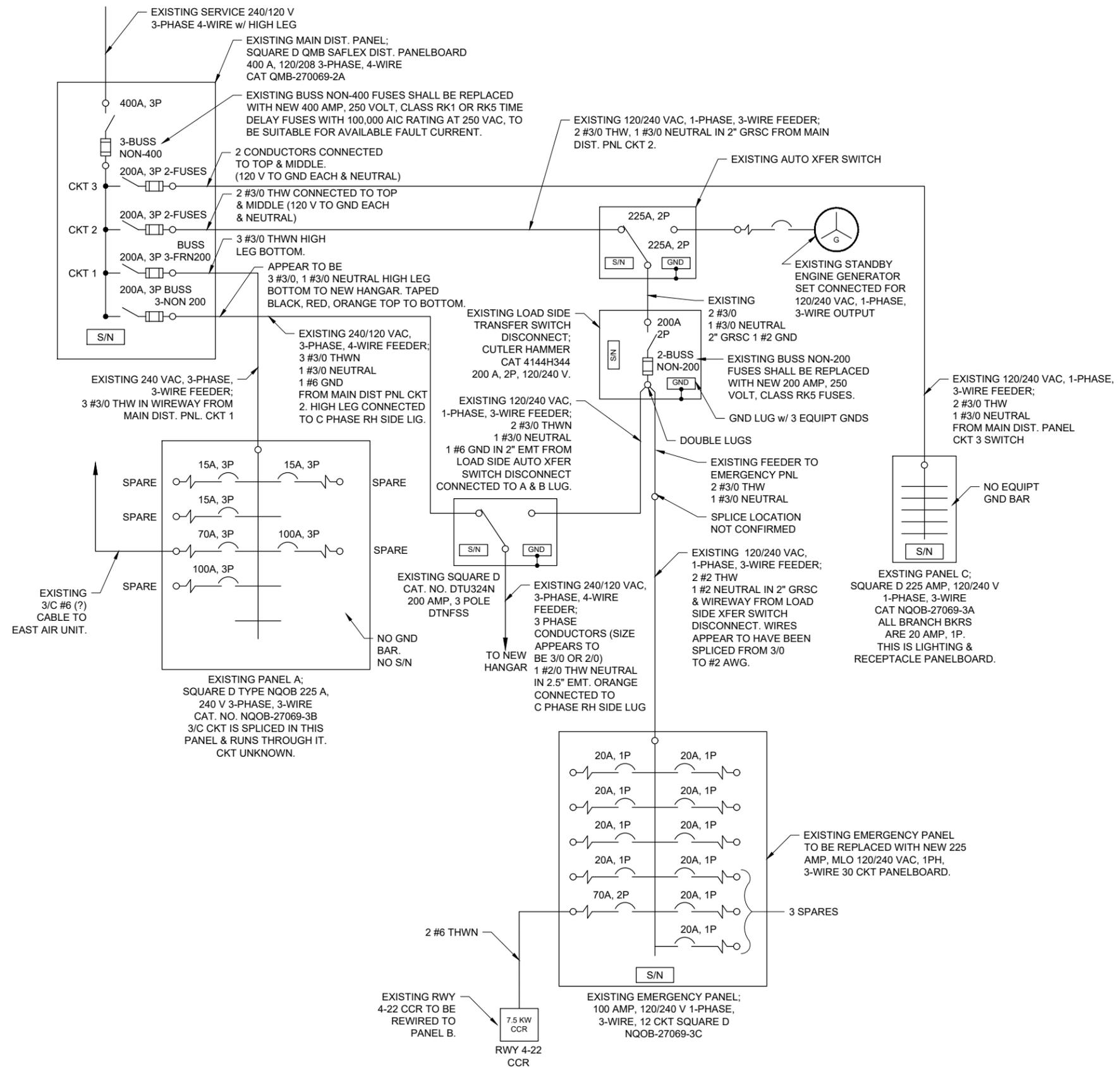
ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-601-LINE.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/5/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT SHEET 1

NOTES:

- EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/TECHNICIAN.
- NOTE THE EXISTING AIRPORT ELECTRICAL VAULT HAS APPARENT NATIONAL ELECTRICAL CODE VIOLATIONS AND/OR OTHER APPARENT NFPA OR FAA SAFETY VIOLATIONS WHICH MIGHT CAUSE UNSAFE WORKING CONDITIONS. APPARENT NFPA/NEC VIOLATIONS INCLUDE, BUT ARE NOT LIMITED TO, SERVICE DISCONNECT NOT PROPERLY IDENTIFIED, AVAILABLE FAULT CURRENT NOT IDENTIFIED ON SERVICE DISCONNECT, HIGH LEG ON 240/120 VAC, 3 PHASE, 4-WIRE SYSTEM NOT PROPERLY LOCATED OR IDENTIFIED, ENGINE GENERATOR BACKUP POWER VOLTAGE SYSTEM IS DIFFERENT THAN ELECTRIC UTILITY VOLTAGE SYSTEM, ENGINE GENERATOR DOES NOT HAVE REMOTE EMERGENCY STOP, MULTIPLE POWER SOURCES (SERVICES) TO VAULT NOT IDENTIFIED, CIRCUIT BREAKERS INCORRECTLY LABELED FOR RESPECTIVE EQUIPMENT, POWER SOURCES FOR EACH PANELBOARD NOT IDENTIFIED, CIRCUIT DIRECTORIES IN PANELBOARDS NOT UP TO DATE, IMPROPER WORKING CLEARANCES, MISSING GROUND BUS IN VAULT, CCRS NOT PROPERLY GROUNDED, COLOR CODING OF BRANCH CIRCUITS NOT CONSISTENT, MISSING EQUIPMENT GROUND WIRES, SOME EQUIPMENT GROUND WIRES LANDED ON NEUTRAL IN PANELBOARDS, SOME PANELS MISSING GROUND BAR, NO CUTOUTS (SERIES CIRCUIT DISCONNECTS) FOR CONSTANT CURRENT REGULATORS, HIGH VOLTAGE SERIES CIRCUIT WIRING MIXED WITH LOW VOLTAGE (240/120 V) WIRING IN SAME RACEWAY, AND/OR EQUIPMENT NOT IDENTIFIED CORRECTLY. CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD.
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND THE RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, CONNECTING, OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT. OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
- WHEN A TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING SHALL BE SHUT OFF.



EXISTING ELECTRICAL ONE LINE DIAGRAM FOR VAULT SHEET 1

FOR BID



Kevin N. Lightfoot

DATE LICENSE
SIGNED: 6/10/2022 EXPIRES: 11/30/2023

REPLACE MEDIUM
INTENSITY LIGHTS ON
RUNWAY 13-31 & 4-22,
ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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ISSUE: JUNE 10, 2022

PROJECT NO: 21A0121D

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DESIGN BY: KNL 4/2/2022

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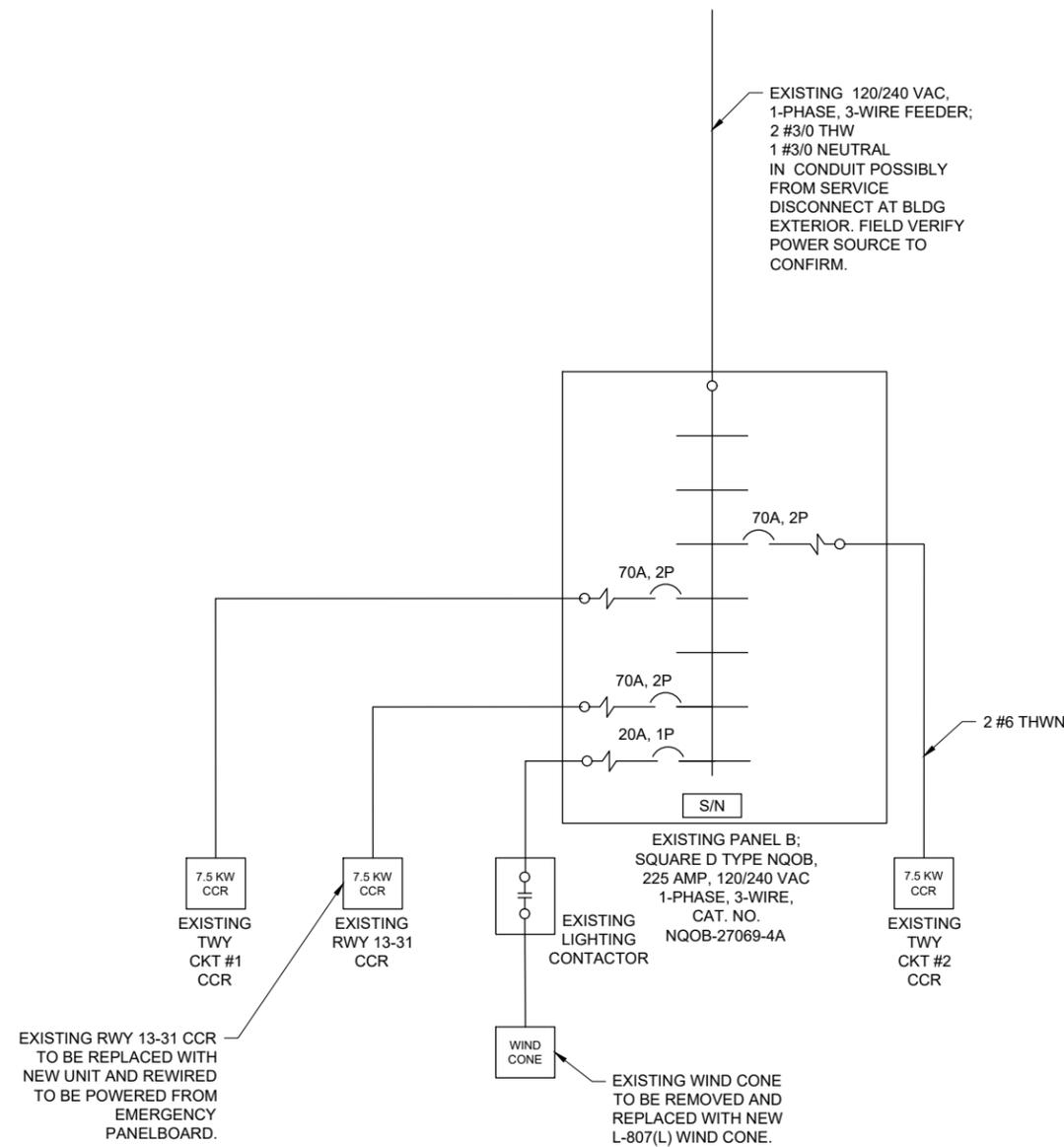
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING
ELECTRICAL
ONE-LINE DIAGRAM
FOR VAULT SHEET 2

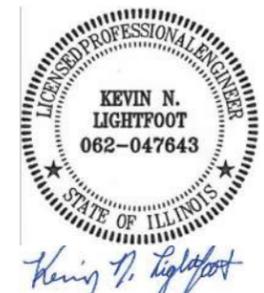
NOTES:

- EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/TECHNICIAN.
- NOTE THE EXISTING AIRPORT ELECTRICAL VAULT HAS APPARENT NATIONAL ELECTRICAL CODE VIOLATIONS AND/OR OTHER APPARENT NFPA OR FAA SAFETY VIOLATIONS WHICH MIGHT CAUSE UNSAFE WORKING CONDITIONS. APPARENT NFPA/NEC VIOLATIONS INCLUDE, BUT ARE NOT LIMITED TO, SERVICE DISCONNECT NOT PROPERLY IDENTIFIED, AVAILABLE FAULT CURRENT NOT IDENTIFIED ON SERVICE DISCONNECT, HIGH LEG ON 240/120 VAC, 3 PHASE, 4-WIRE SYSTEM NOT PROPERLY LOCATED OR IDENTIFIED, ENGINE GENERATOR BACKUP POWER VOLTAGE SYSTEM IS DIFFERENT THAN ELECTRIC UTILITY VOLTAGE SYSTEM, ENGINE GENERATOR DOES NOT HAVE REMOTE EMERGENCY STOP, MULTIPLE POWER SOURCES (SERVICES) TO VAULT NOT IDENTIFIED, CIRCUIT BREAKERS INCORRECTLY LABELED FOR RESPECTIVE EQUIPMENT, POWER SOURCES FOR EACH PANELBOARD NOT IDENTIFIED, CIRCUIT DIRECTORIES IN PANELBOARDS NOT UP TO DATE, IMPROPER WORKING CLEARANCES, MISSING GROUND BUS IN VAULT, CCRS NOT PROPERLY GROUNDED, COLOR CODING OF BRANCH CIRCUITS NOT CONSISTENT, MISSING EQUIPMENT GROUND WIRES, SOME EQUIPMENT GROUND WIRES LANDED ON NEUTRAL IN PANELBOARDS, SOME MISSING GROUND BAR, NO CUTOUPS (SERIES CIRCUIT DISCONNECTS) FOR CONSTANT CURRENT REGULATORS, HIGH VOLTAGE SERIES CIRCUIT WIRING MIXED WITH LOW VOLTAGE (240/120 V) WIRING IN SAME RACEWAY, AND/OR EQUIPMENT NOT IDENTIFIED CORRECTLY. CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD.
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND THE RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, CONNECTING, OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT. OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
- WHEN A TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING SHALL BE SHUT OFF.



EXISTING ELECTRICAL ONE LINE DIAGRAM FOR VAULT SHEET 2

FOR BID



DATE: 6/10/2022 LICENSE: 11/30/2023
SIGNED: 6/10/2022 EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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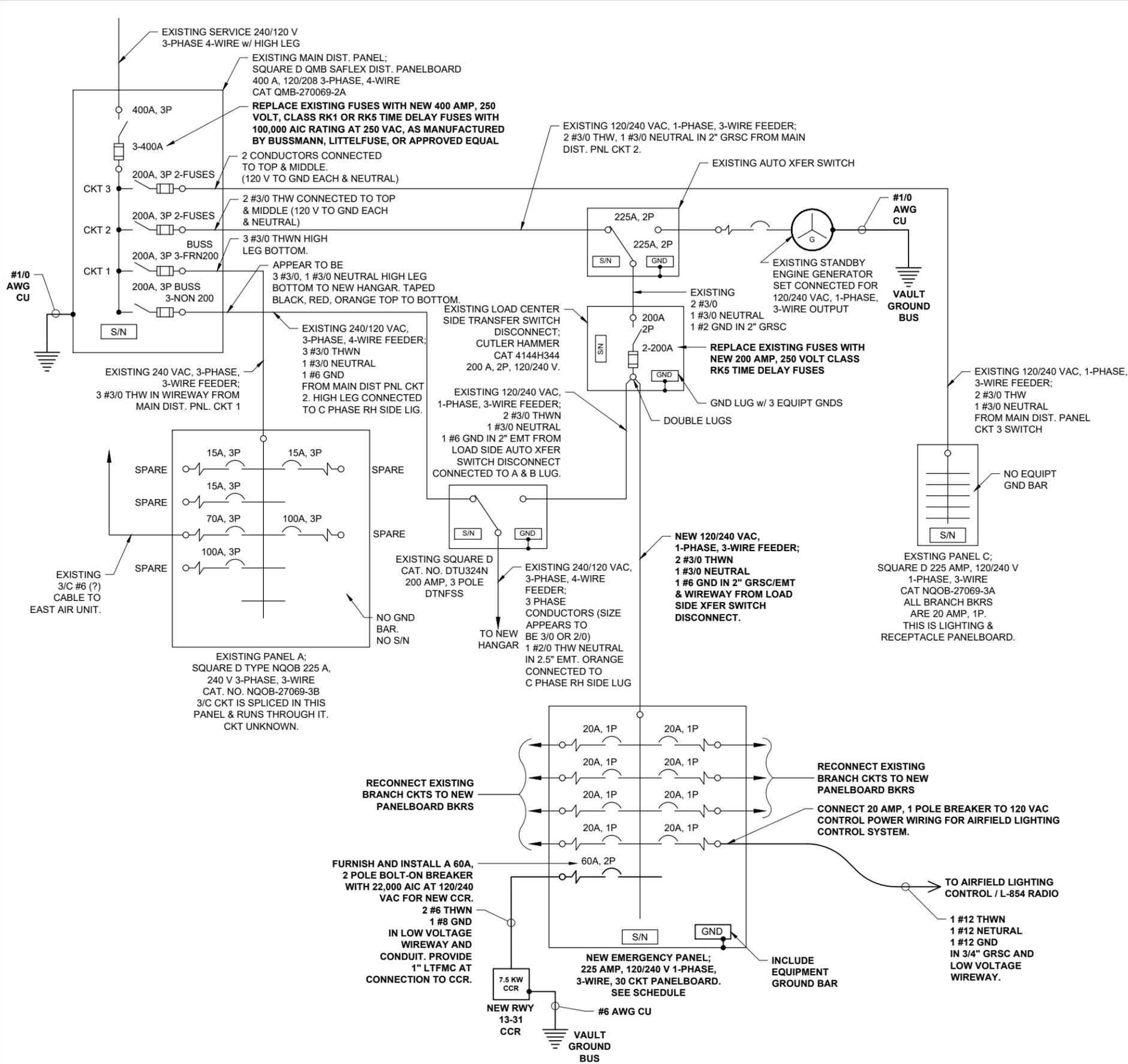
ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-608-LINE.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT SHEET 1

NOTES

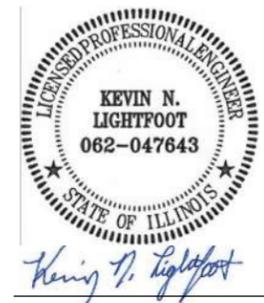
- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED
- ALL CONDUCTORS/WIRING SHALL BE COPPER.
- CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE FOR EACH RESPECTIVE CCR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, FUSES, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, JUNCTION BOX, OR RACEWAY.
- EQUIPMENT AND MATERIALS NOT LABELED AS "EXISTING" ARE NEW.



PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT SHEET 1

FOR BID

JUN 14, 2022 5:00 PM MEND002133 1:21:00S21A0121D\CAD\AIRPORT\PROJECT\608-LINE.DWG



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-608-LINE.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT SHEET 2

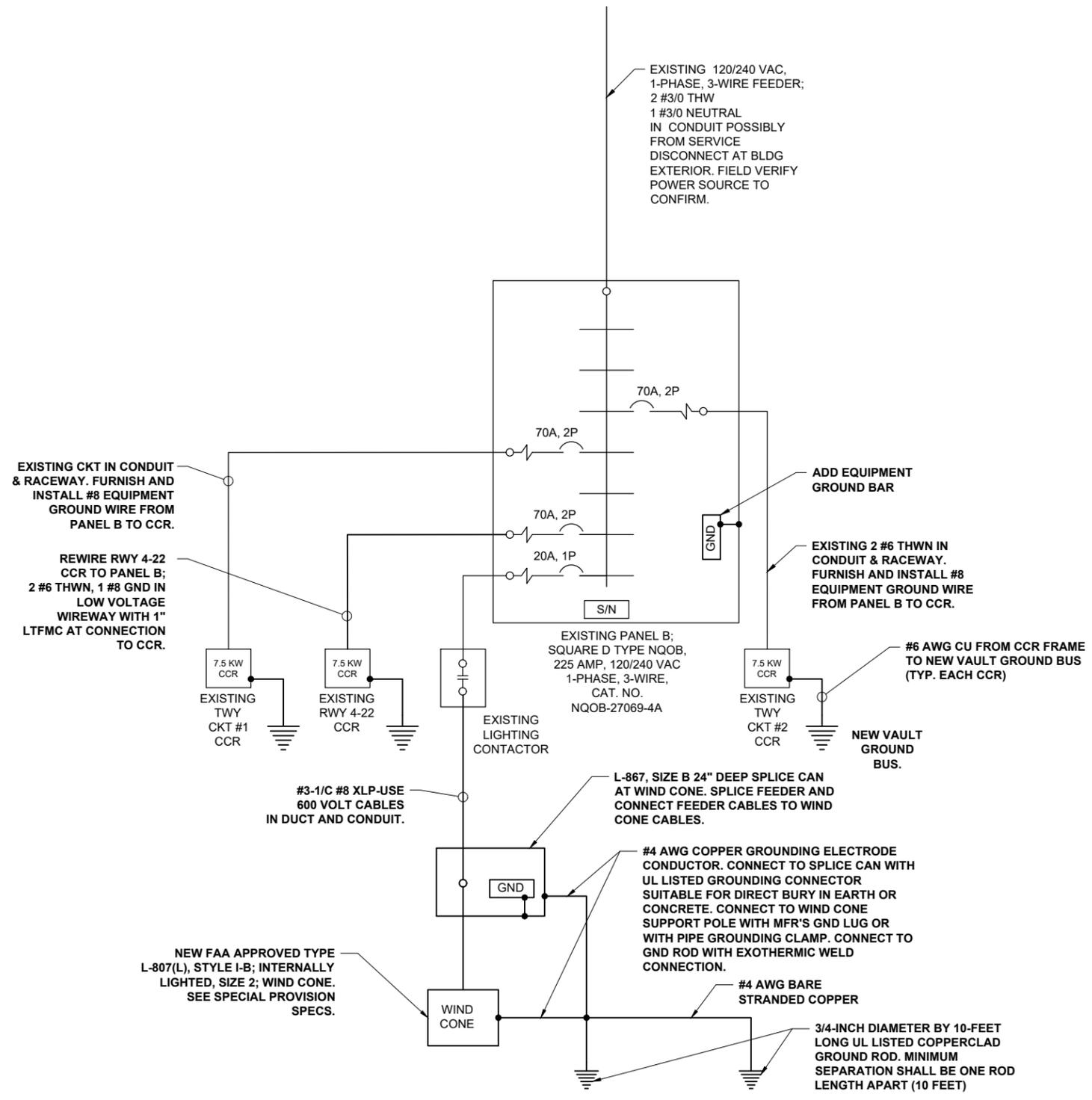
NOTES

- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED
- ALL CONDUCTORS/WIRING SHALL BE COPPER.
- CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE FOR EACH RESPECTIVE CCR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, FUSES, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, JUNCTION BOX, OR RACEWAY.
- EQUIPMENT AND MATERIALS NOT LABELED AS "EXISTING" ARE NEW.

| EMERGENCY PANEL | | | | | |
|-----------------|---------------------------|--------|--------|----------------------------------|-------|
| CKT # | DUTY | SIZE | SIZE | DUTY | CKT # |
| 1 | RECEPT - MANAGER'S OFFICE | 20A 1P | 20A 1P | LIGHTS IN MANAGER'S OFFICE | 2 |
| 3 | EXIT LIGHTS | 20A 1P | 20A 1P | LIGHTS IN MANAGER'S OFFICE | 4 |
| 5 | NEW TELEPHONE EQUIPMENT | 20A 1P | 20A 1P | WATER HEATER | 6 |
| 7 | RECEPTACLES - CLASSROOM | 20A 1P | 20A 1P | AIRFIELD LIGHTING CONTROL SYSTEM | 8 |
| 9 | RWY 13-31 CCR | 60A 2P | 20A 1P | SPARE | 10 |
| 11 | | | 20A 1P | SPARE | 12 |
| 13 | SPARE | | 70A 2P | SPARE | 14 |
| 15 | | | | | 16 |
| 17 | SPARE | 60A 2P | 70A 2P | SPARE | 18 |
| 19 | | | | | 20 |
| 21 | BLANK | | | | 22 |
| 23 | BLANK | | | | 24 |
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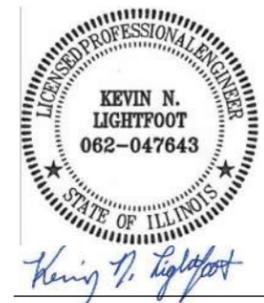
225AMP, 120/240VAC, 1 PHASE, 3 WIRE 30 CIRCUIT PANELBOARD WITH MAIN LUGS IN A NEMA 1 ENCLOSURE UL-LISTED SUITABLE FOR SERVICE ENTRANCE. PANELBOARD SHALL ACCOMMODATE FEEDER AND BRANCH BREAKERS UP TO 150AMP, 2 POLE FRAME & TRIP RATING. PANELBOARD SHALL BE SQUARE D NQ CAT. NO. NQ30L2C WITH COPPER NEUTRAL & COPPER GROUND BAR KIT, EQUIVALENT PANELBOARD BY EATON CUTLER HAMMER, OR APPROVED EQUAL.

- NOTES**
- PANELBOARD BUSSES SHALL BE COPPER. NEUTRAL SHALL BE COPPER. EQUIPMENT GROUND BAR SHALL BE COPPER.
 - ALL BRANCH CIRCUIT & FEEDER BREAKERS SHALL BE BOLT-ON TYPE WITH 22,000 AIC AT 120/240 VAC.
 - INCLUDE ENGRAVED, PHENOLIC OR PLASTIC LEGEND PLATE LABELED "EMERGENCY PANEL, 120/240 VAC, 1PH, 3W".
 - PANELBOARD SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWING SUBMITTAL.
 - CIRCUIT BREAKERS AND WIRING SHALL BE SIZED FOR THE ACTUAL EQUIPMENT FURNISHED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATION AND N.E.C. CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES & WIRING WHERE APPLICABLE TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS AND N.E.C.



PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT SHEET 2

FOR BID



DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

| NO. | DATE | DESCRIPTION | | |
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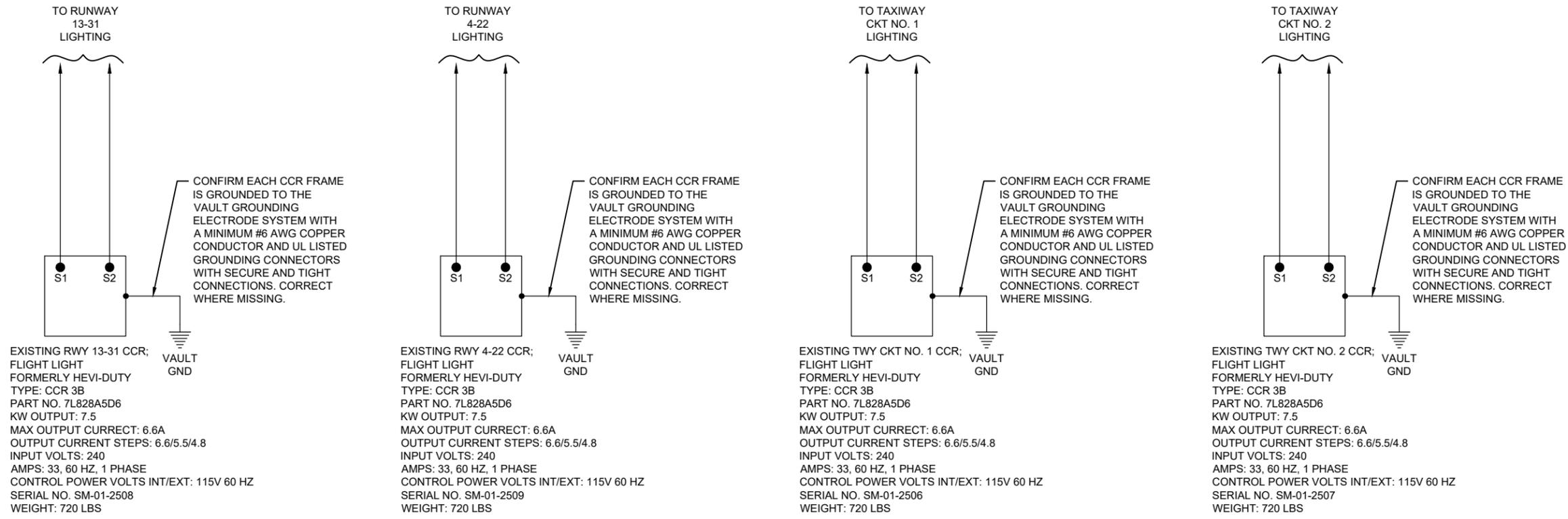
ISSUE: JUNE 10, 2022

PROJECT NO: 21A0121D
CAD FILE: E-603.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/5/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATICS

FOR BID



EXISTING RWY 13-31 CCR;
FLIGHT LIGHT
FORMERLY HEVI-DUTY
TYPE: CCR 3B
PART NO. 7L828A5D6
KW OUTPUT: 7.5
MAX OUTPUT CURRENT: 6.6A
OUTPUT CURRENT STEPS: 6.6/5.5/4.8
INPUT VOLTS: 240
AMPS: 33, 60 HZ, 1 PHASE
CONTROL POWER VOLTS INT/EXT: 115V 60 HZ
SERIAL NO. SM-01-2508
WEIGHT: 720 LBS

EXISTING RWY 4-22 CCR;
FLIGHT LIGHT
FORMERLY HEVI-DUTY
TYPE: CCR 3B
PART NO. 7L828A5D6
KW OUTPUT: 7.5
MAX OUTPUT CURRENT: 6.6A
OUTPUT CURRENT STEPS: 6.6/5.5/4.8
INPUT VOLTS: 240
AMPS: 33, 60 HZ, 1 PHASE
CONTROL POWER VOLTS INT/EXT: 115V 60 HZ
SERIAL NO. SM-01-2509
WEIGHT: 720 LBS

EXISTING TWY CKT NO. 1 CCR;
FLIGHT LIGHT
FORMERLY HEVI-DUTY
TYPE: CCR 3B
PART NO. 7L828A5D6
KW OUTPUT: 7.5
MAX OUTPUT CURRENT: 6.6A
OUTPUT CURRENT STEPS: 6.6/5.5/4.8
INPUT VOLTS: 240
AMPS: 33, 60 HZ, 1 PHASE
CONTROL POWER VOLTS INT/EXT: 115V 60 HZ
SERIAL NO. SM-01-2506
WEIGHT: 720 LBS

EXISTING TWY CKT NO. 2 CCR;
FLIGHT LIGHT
FORMERLY HEVI-DUTY
TYPE: CCR 3B
PART NO. 7L828A5D6
KW OUTPUT: 7.5
MAX OUTPUT CURRENT: 6.6A
OUTPUT CURRENT STEPS: 6.6/5.5/4.8
INPUT VOLTS: 240
AMPS: 33, 60 HZ, 1 PHASE
CONTROL POWER VOLTS INT/EXT: 115V 60 HZ
SERIAL NO. SM-01-2507
WEIGHT: 720 LBS

EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS AND TAXIWAYS
NOT TO SCALE

LEGEND

"CCR" DENOTES CONSTANT CURRENT REGULATOR

NOTES:

- KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT ENGINEER/TECHNICIAN. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, 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 PROJECT REPRESENTATIVE. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES FOR SAFETY OF PERSONNEL.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NOTE THE EXISTING AIRPORT ELECTRICAL VAULT HAS APPARENT NATIONAL ELECTRICAL CODE VIOLATIONS AND/OR OTHER APPARENT NFPA OR FAA SAFETY VIOLATIONS WHICH MIGHT CAUSE UNSAFE WORKING CONDITIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND CIRCUITS. CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT(S) AND ON THE AIRFIELD.
- THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH, AND QUALIFIED TO WORK ON, 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
- EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL. EXISTING CCR'S DO NOT HAVE CUTOUPS.
- 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 ENGINEER OF RECORD (EOR) WITHIN 5 DAYS OF CONDUCTING TESTS.
- RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR).



Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

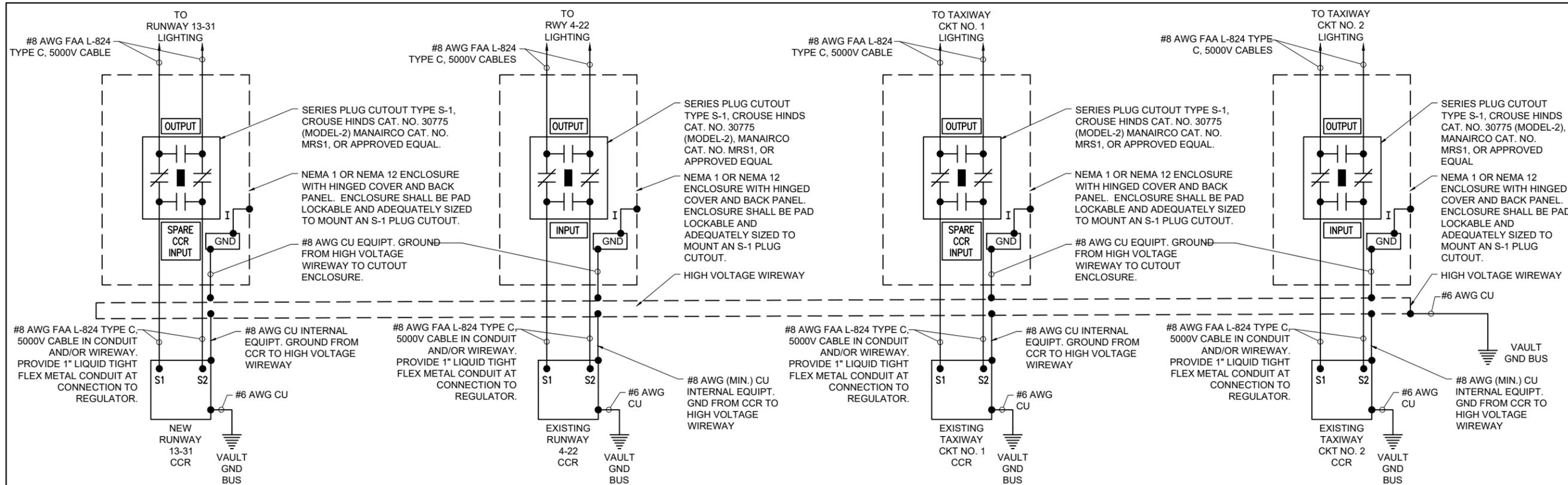
Contract No.: JA040

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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-604.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

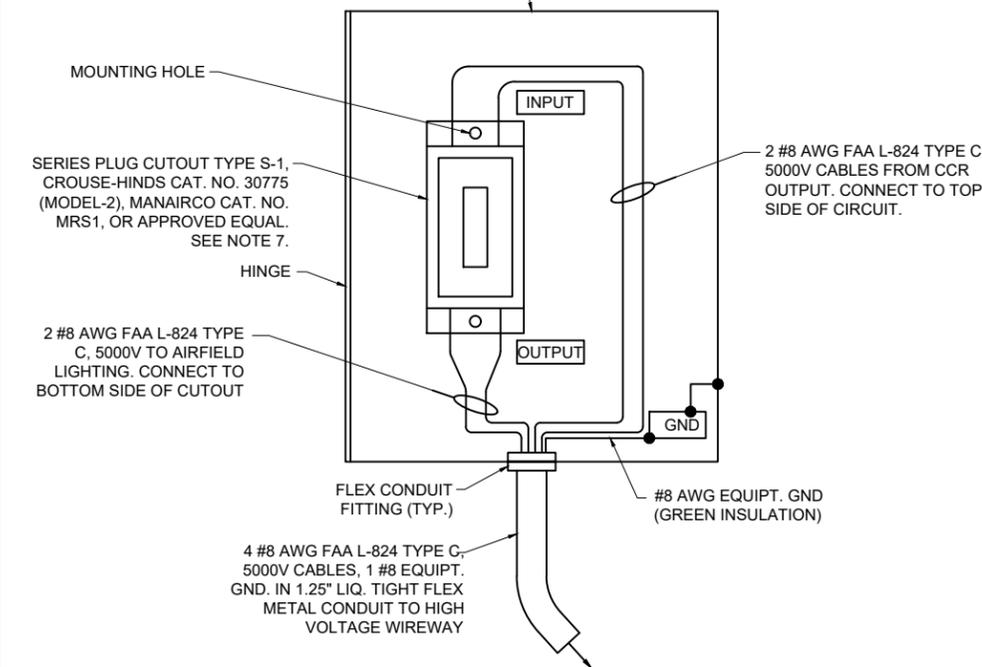
SHEET TITLE

NEW HIGH VOLTAGE WIRING SCHEMATIC



PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS AND TAXIWAYS

14"H x 12"W x 8"D (APPROXIMATE DIMENSIONS) NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER & BACK PANEL. NOTE FRONT DOOR OF ENCLOSURE NOT SHOWN FOR CLARITY. ADJUST ENCLOSURE DIMENSIONS AS NECESSARY TO ACCOMMODATE THE RESPECTIVE CUTOUT. ENCLOSURE SHALL INCLUDE PAD LOCK KIT.



SERIES PLUG CUTOUT MOUNTING DETAIL FOR TAXIWAY CIRCUIT AND RUNWAY CIRCUIT (TYPICAL FOR 4)

NOT TO SCALE

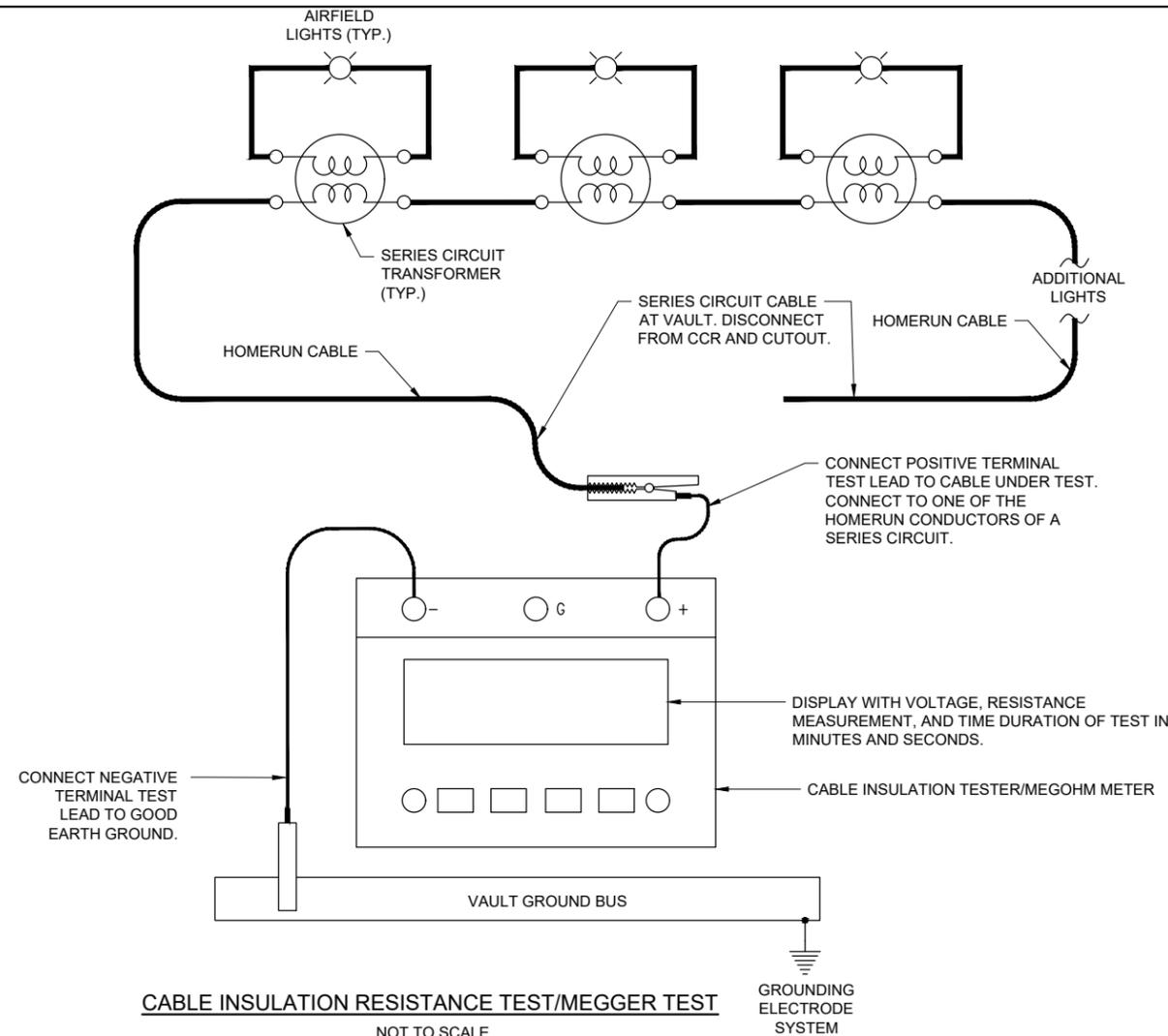
LEGEND

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

NOTES

1. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT. 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 "ARC-FLASH HAZARD WARNING".
2. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE RESPECTIVE CUTOUT INPUT CONNECTION AND THE RESPECTIVE CUTOUT OUTPUT CONNECTION.
3. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS..
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 INSTALLING IT.
5. SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP. 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 RATED SUITABLE FOR OPERATION WITH THE HANDLE PLUG 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. SERIES CIRCUIT DISCONNECTS/CUTOUTS ARE REQUIRED FOR SAFETY OF PERSONNEL AND IN ACCORDANCE WITH FAA AC 150/5340-30J, PART 3.5.5 CONSTANT CURRENT REGULATORS (CCRS).
6. MAINTAIN SEPARATION OF HIGH VOLTAGE WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) FROM LOW VOLTAGE WIRING (RATED 600 VOLTS AND BELOW) TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN, HANDHOLE, OR MANHOLE.
7. PROVIDE UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE (EXISTING AND NEW).
8. BOND EACH REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.

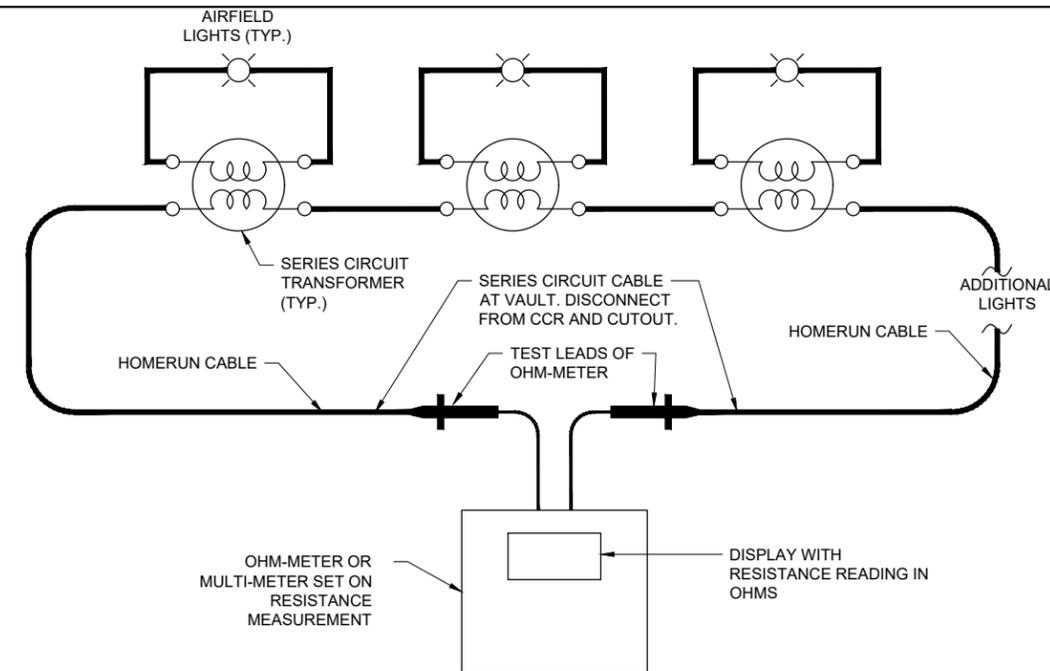
FOR BID



CABLE INSULATION RESISTANCE TEST/MEGGER TEST
NOT TO SCALE

CABLE INSULATION RESISTANCE TEST (MEGGER TEST) NOTES

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



MEASURE RESISTANCE OF SERIES CIRCUIT LOOP.
NOT TO SCALE

SERIES CIRCUIT LOOP RESISTANCE MEASUREMENT NOTES

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



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Kevin N. Lightfoot

DATE SIGNED: 6/10/2022 LICENSE EXPIRES: 11/30/2023

REPLACE MEDIUM INTENSITY LIGHTS ON RUNWAY 13-31 & 4-22, ALL TAXIWAYS & APRON

IDA No: IJX-4880
SBGP No:
3-17-SBGP-156/162/171

Contract No.: JA040

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ISSUE: JUNE 10, 2022
PROJECT NO: 21A0121D
CAD FILE: E-605.DWG
DESIGN BY: KNL 4/2/2022
DRAWN BY: CWS 4/4/2022
REVIEWED BY: KNL 6/8/2022

SHEET TITLE

SERIES CIRCUIT CABLE TESTING DETAILS

FOR BID



Kevin N. Lightfoot

DATE: 6/10/2022 LICENSE: 11/30/2023
SIGNED: 6/10/2022 EXPIRES: 11/30/2023

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ISSUE: JUNE 10, 2022

PROJECT NO: 21A0121D

CAD FILE: E-607-SCHM.DWG

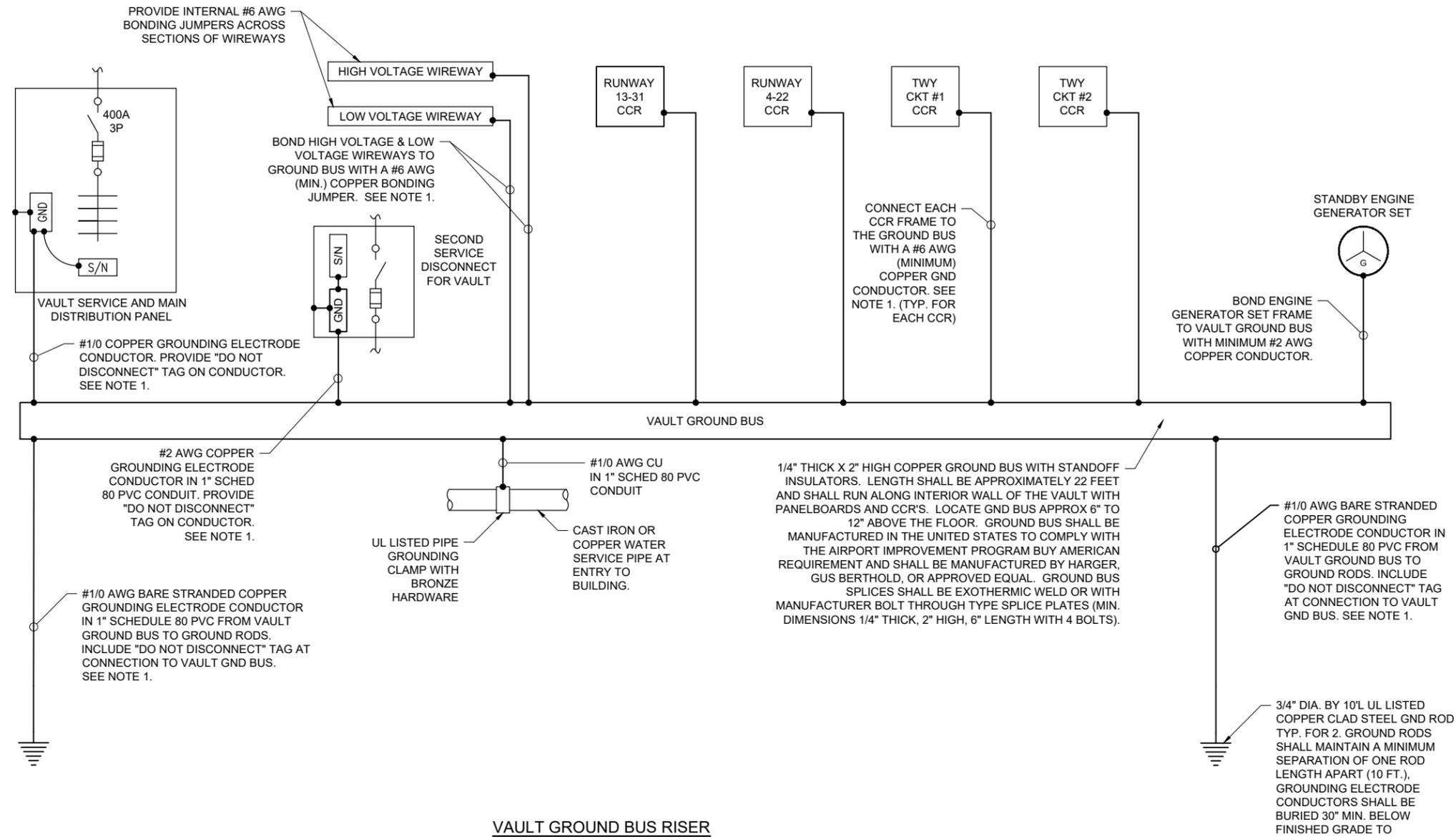
DESIGN BY: KNL 4/30/2022

DRAWN BY: CWS 5/6/2022

REVIEWED BY: KNL 6/8/2022

SHEET TITLE

VAULT GROUND BUS RISER



VAULT GROUND BUS RISER

NOTES

1. CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR WITH 3/8-INCH STAINLESS STEEL BOLTS, NUTS, AND WASHERS. CONNECTIONS TO EQUIPMENT SHALL ALSO BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE RESPECTIVE EQUIPMENT, WITH 3/8-INCH STAINLESS STEEL BOLTS, NUTS, AND WASHERS OR WITH MFR GROUND LUGS.
2. ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD.
3. ALL INSULATED GROUND WIRES SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND KCMIL.
4. ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.
5. TEST GROUND RODS AND RECORD RESULTS. WHERE GROUND RESISTANCE TEST RESULTS FOR THE VAULT GROUNDING ELECTRODE SYSTEM EXCEED 10 OHMS CONTACT PROJECT ENGINEER FOR FURTHER DIRECTION.

