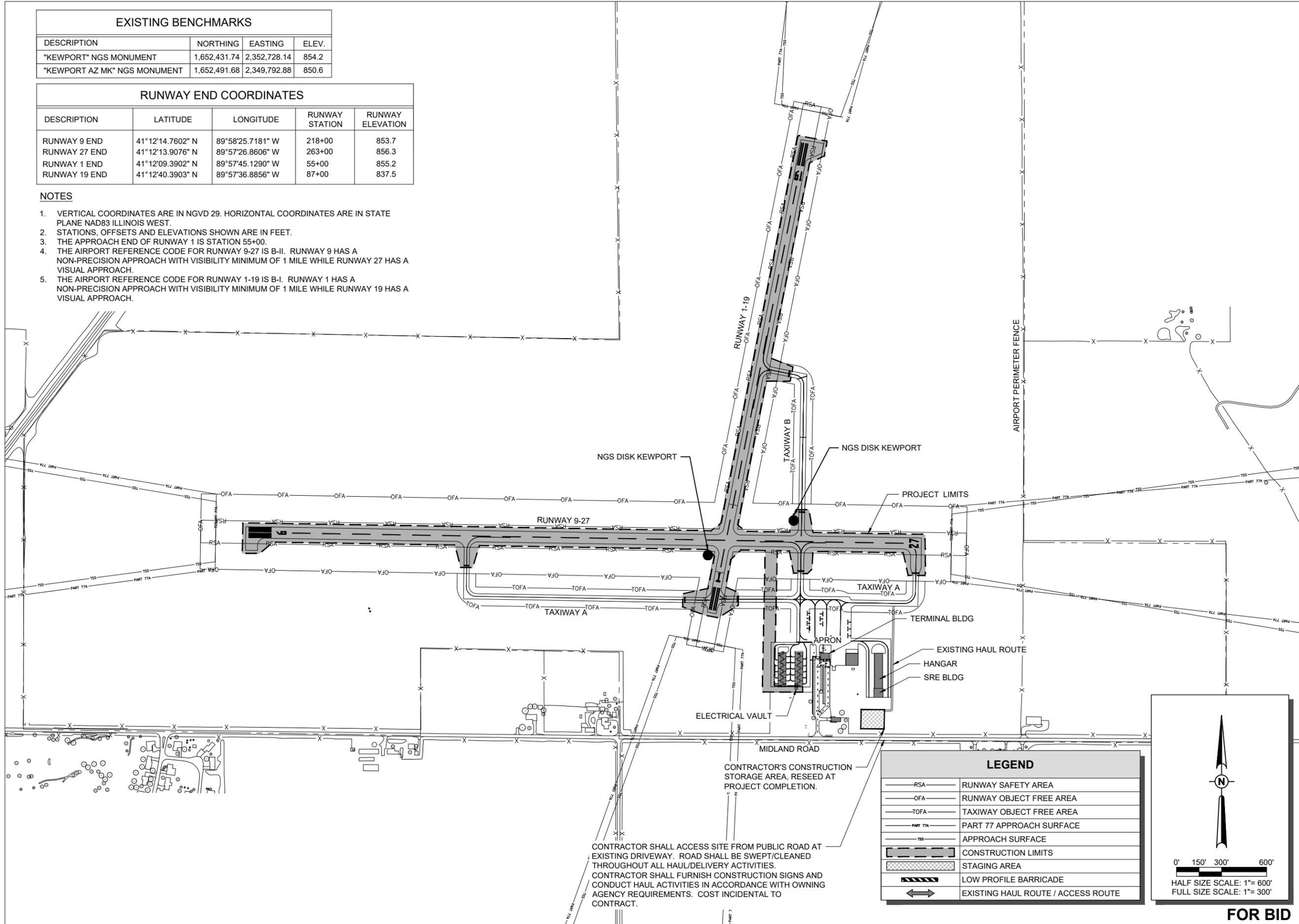


EXISTING BENCHMARKS			
DESCRIPTION	NORTHING	EASTING	ELEV.
"KEWPORT" NGS MONUMENT	1,652,431.74	2,352,728.14	854.2
"KEWPORT AZ MK" NGS MONUMENT	1,652,491.68	2,349,792.88	850.6

RUNWAY END COORDINATES				
DESCRIPTION	LATITUDE	LONGITUDE	RUNWAY STATION	RUNWAY ELEVATION
RUNWAY 9 END	41°12'14.7602" N	89°58'25.7181" W	218+00	853.7
RUNWAY 27 END	41°12'13.9076" N	89°57'26.8606" W	263+00	856.3
RUNWAY 1 END	41°12'09.3902" N	89°57'45.1290" W	55+00	855.2
RUNWAY 19 END	41°12'40.3903" N	89°57'36.8856" W	87+00	837.5

NOTES

- VERTICAL COORDINATES ARE IN NGVD 29. HORIZONTAL COORDINATES ARE IN STATE PLANE NAD83 ILLINOIS WEST.
- STATIONS, OFFSETS AND ELEVATIONS SHOWN ARE IN FEET.
- THE APPROACH END OF RUNWAY 1 IS STATION 55+00.
- THE AIRPORT REFERENCE CODE FOR RUNWAY 9-27 IS B-II. RUNWAY 9 HAS A NON-PRECISION APPROACH WITH VISIBILITY MINIMUM OF 1 MILE WHILE RUNWAY 27 HAS A VISUAL APPROACH.
- THE AIRPORT REFERENCE CODE FOR RUNWAY 1-19 IS B-I. RUNWAY 1 HAS A NON-PRECISION APPROACH WITH VISIBILITY MINIMUM OF 1 MILE WHILE RUNWAY 19 HAS A VISUAL APPROACH.



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

LEGEND	
— RSA —	RUNWAY SAFETY AREA
— OFA —	RUNWAY OBJECT FREE AREA
— TOFA —	TAXIWAY OBJECT FREE AREA
— PART 77A —	PART 77 APPROACH SURFACE
— TSS —	APPROACH SURFACE
— [Dashed Line] —	CONSTRUCTION LIMITS
— [Hatched Area] —	STAGING AREA
— [Diagonal Lines] —	LOW PROFILE BARRICADE
— [Double Arrow] —	EXISTING HAUL ROUTE / ACCESS ROUTE

HALF SIZE SCALE: 1"= 600'
FULL SIZE SCALE: 1"= 300'

FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

Contract No.: KE019

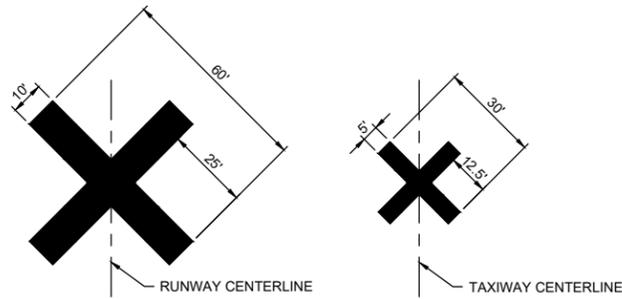
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: NOVEMBER 18, 2022
PROJECT NO: 22A0094D
CAD FILE: C-101-SOW.DWG
LAYOUT BY: LDH 10/2/2022
DRAWN BY: LDH 10/2/2022
REVIEWED BY: LDH 11/15/2022
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SHEET TITLE

SITE AND SAFETY PLAN

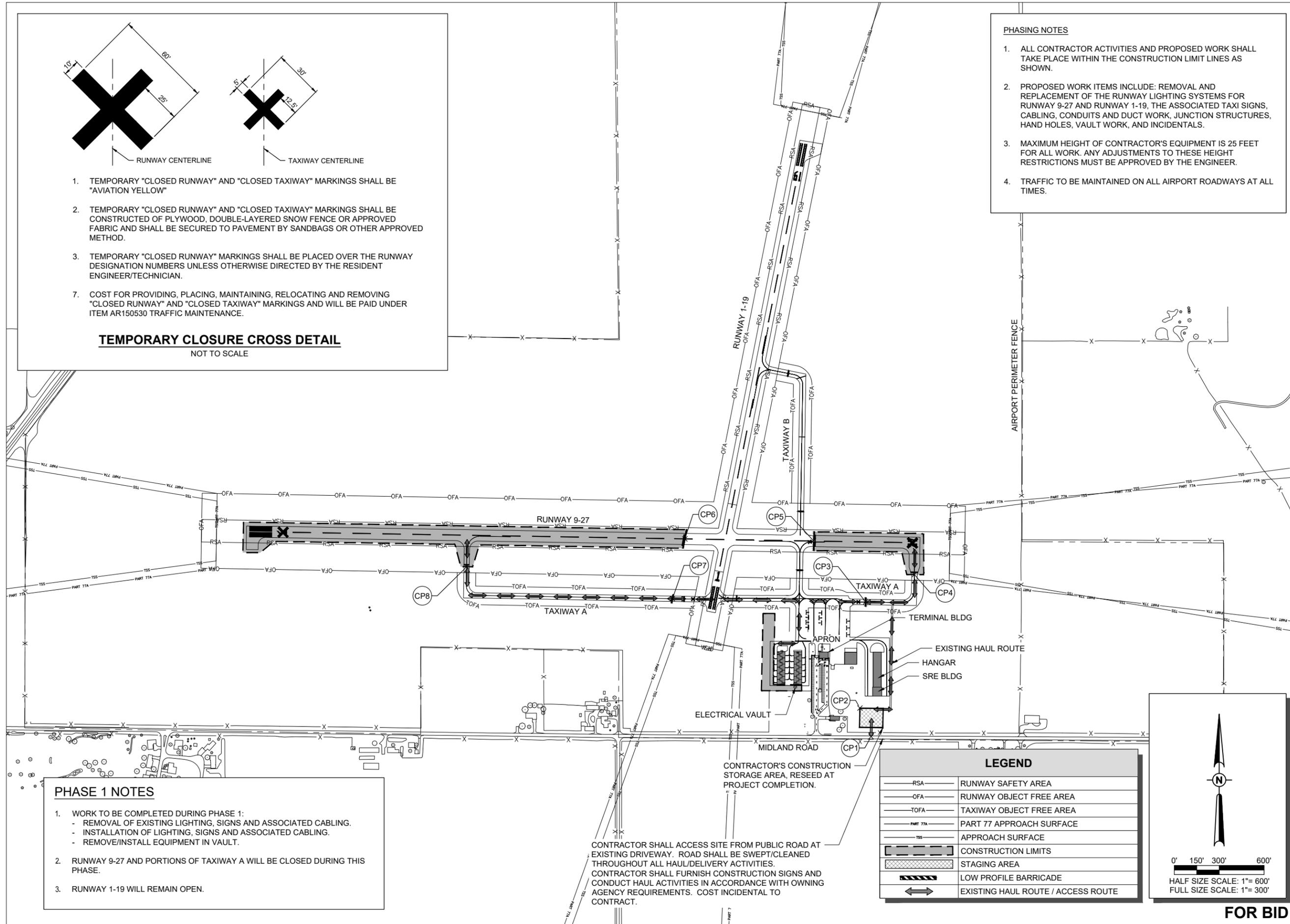
PHASING NOTES

1. ALL CONTRACTOR ACTIVITIES AND PROPOSED WORK SHALL TAKE PLACE WITHIN THE CONSTRUCTION LIMIT LINES AS SHOWN.
2. PROPOSED WORK ITEMS INCLUDE: REMOVAL AND REPLACEMENT OF THE RUNWAY LIGHTING SYSTEMS FOR RUNWAY 9-27 AND RUNWAY 1-19, THE ASSOCIATED TAXI SIGNS, CABLING, CONDUITS AND DUCT WORK, JUNCTION STRUCTURES, HAND HOLES, VAULT WORK, AND INCIDENTALS.
3. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT IS 25 FEET FOR ALL WORK. ANY ADJUSTMENTS TO THESE HEIGHT RESTRICTIONS MUST BE APPROVED BY THE ENGINEER.
4. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.



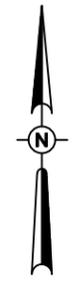
1. TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE "AVIATION YELLOW"
2. TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, DOUBLE-LAYERED SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.
3. TEMPORARY "CLOSED RUNWAY" MARKINGS SHALL BE PLACED OVER THE RUNWAY DESIGNATION NUMBERS UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER/TECHNICIAN.
7. COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS AND WILL BE PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.

TEMPORARY CLOSURE CROSS DETAIL
NOT TO SCALE



LEGEND

— RSA —	RUNWAY SAFETY AREA
— OFA —	RUNWAY OBJECT FREE AREA
— TOFA —	TAXIWAY OBJECT FREE AREA
— PART 77A —	PART 77 APPROACH SURFACE
— TSS —	APPROACH SURFACE
[Hatched Box]	CONSTRUCTION LIMITS
[Hatched Box]	STAGING AREA
[Dashed Line]	LOW PROFILE BARRICADE
[Double Arrow]	EXISTING HAUL ROUTE / ACCESS ROUTE



0' 150' 300' 600'
HALF SIZE SCALE: 1"= 600'
FULL SIZE SCALE: 1"= 300'

FOR BID

PHASE 1 NOTES

1. WORK TO BE COMPLETED DURING PHASE 1:
 - REMOVAL OF EXISTING LIGHTING, SIGNS AND ASSOCIATED CABLING.
 - INSTALLATION OF LIGHTING, SIGNS AND ASSOCIATED CABLING.
 - REMOVE/INSTALL EQUIPMENT IN VAULT.
2. RUNWAY 9-27 AND PORTIONS OF TAXIWAY A WILL BE CLOSED DURING THIS PHASE.
3. RUNWAY 1-19 WILL REMAIN OPEN.

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

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

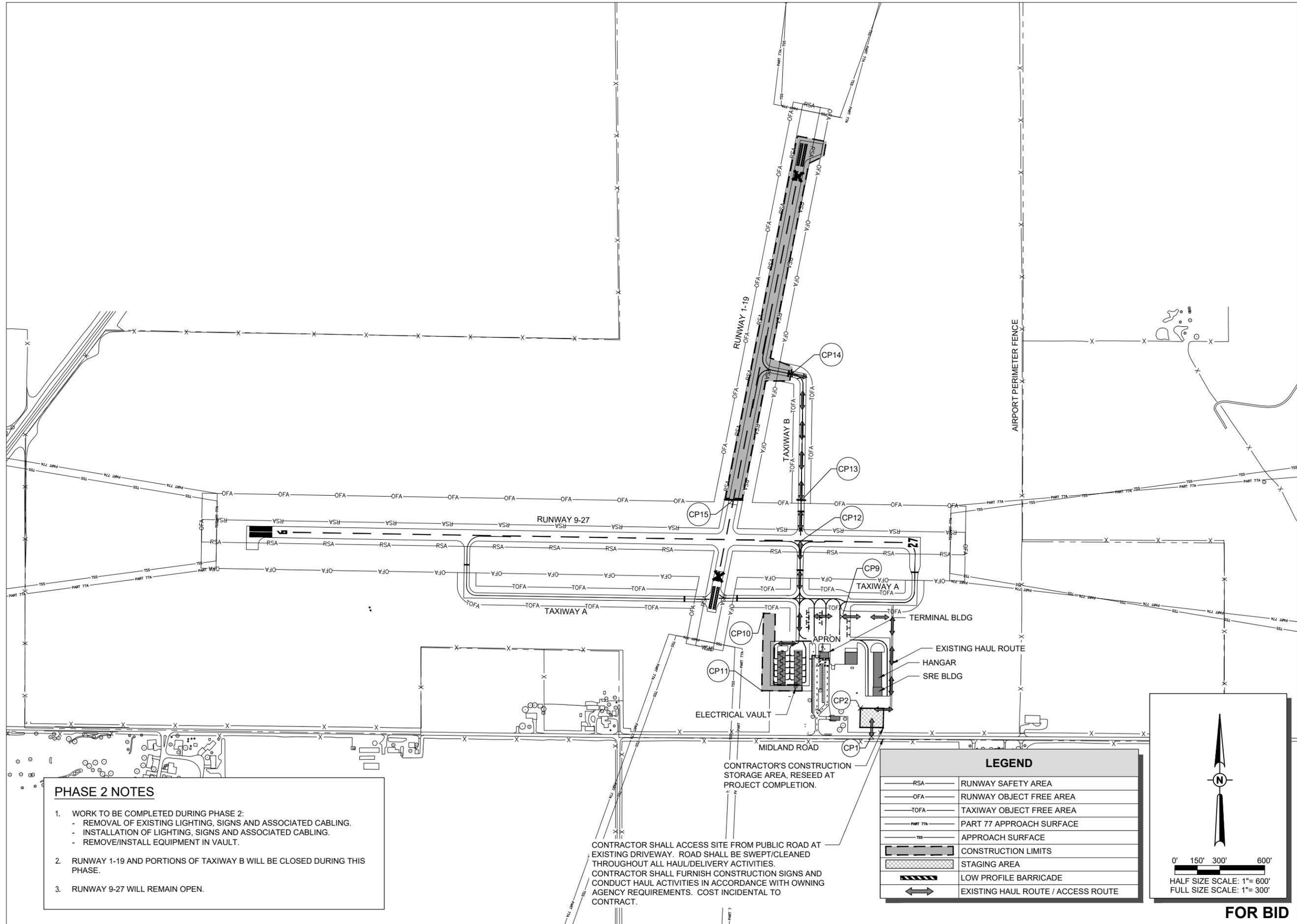
SBGP No:
3-17-SBGP-184

Contract No.: KE019

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		LAY	DWN	REV

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REVIEWED BY: LDH 11/15/2022
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SHEET TITLE

PHASING PLAN - PHASE 1



PHASE 2 NOTES

1. WORK TO BE COMPLETED DURING PHASE 2:
 - REMOVAL OF EXISTING LIGHTING, SIGNS AND ASSOCIATED CABLING.
 - INSTALLATION OF LIGHTING, SIGNS AND ASSOCIATED CABLING.
 - REMOVE/INSTALL EQUIPMENT IN VAULT.
2. RUNWAY 1-19 AND PORTIONS OF TAXIWAY B WILL BE CLOSED DURING THIS PHASE.
3. RUNWAY 9-27 WILL REMAIN OPEN.

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

LEGEND	
— RSA —	RUNWAY SAFETY AREA
— OFA —	RUNWAY OBJECT FREE AREA
— TOFA —	TAXIWAY OBJECT FREE AREA
— PART 77A —	PART 77 APPROACH SURFACE
— TSS —	APPROACH SURFACE
— [Dashed Line] —	CONSTRUCTION LIMITS
— [Hatched Area] —	STAGING AREA
— [Diagonal Lines] —	LOW PROFILE BARRICADE
— [Double Arrow] —	EXISTING HAUL ROUTE / ACCESS ROUTE

N

0' 150' 300' 600'

HALF SIZE SCALE: 1"= 600'
FULL SIZE SCALE: 1"= 300'

FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

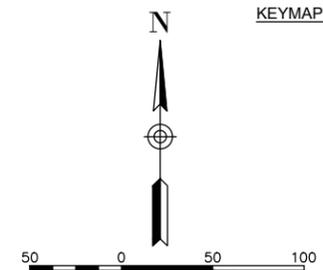
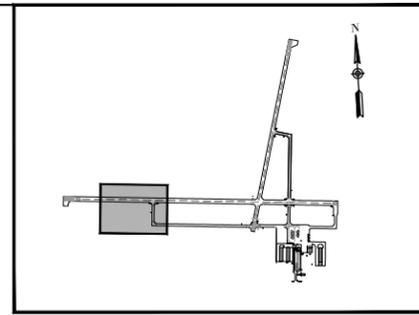
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PHASING PLAN - PHASE 2

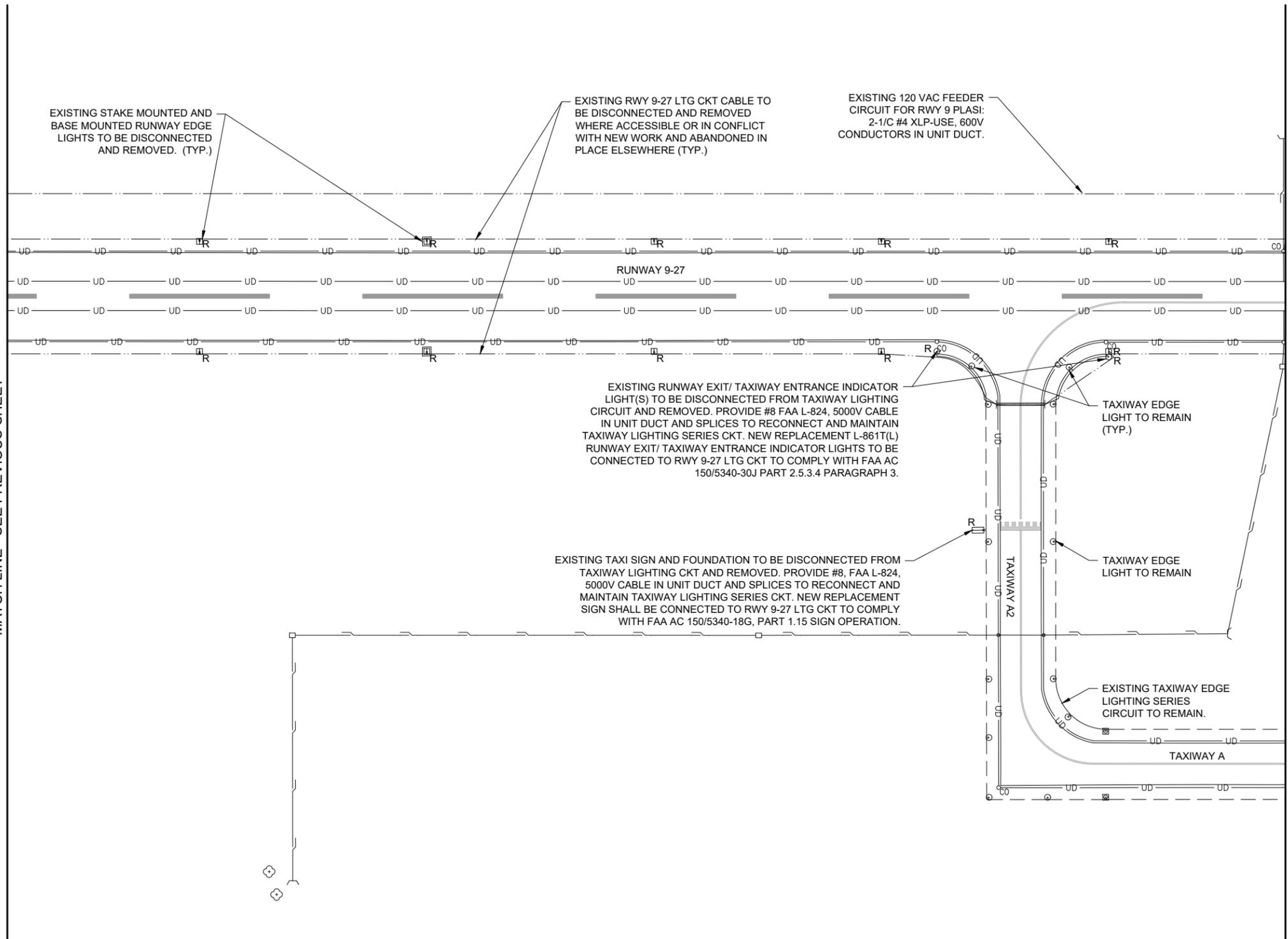


LEGEND

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

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



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REPLACE RUNWAY AIRFIELD LIGHTING

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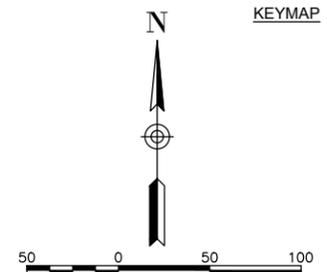
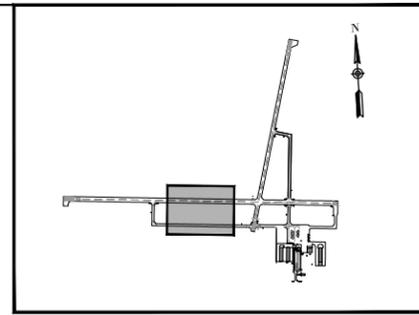
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EXISTING RUNWAY 9-27 ELECTRICAL PLAN SHEET 2



MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET

EXISTING STAKE MOUNTED AND BASE MOUNTED RUNWAY EDGE LIGHTS TO BE DISCONNECTED AND REMOVED. (TYP.)

EXISTING 120 VAC FEEDER CIRCUIT FOR RWY 9 PLASI: 2-1/C #4 XLP-USE, 600V CONDUCTORS IN UNIT DUCT.

EXISTING RWY 9-27 LTG CKT CABLE TO BE DISCONNECTED AND REMOVED WHERE ACCESSIBLE OR IN CONFLICT WITH NEW WORK AND ABANDONED IN PLACE ELSEWHERE (TYP.)

EXISTING TAXIWAY EDGE LIGHTING SERIES CIRCUIT TO REMAIN.

LEGEND

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

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

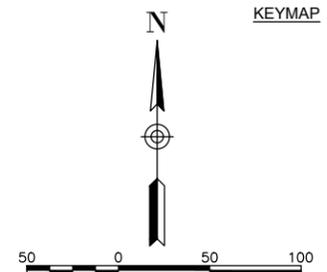
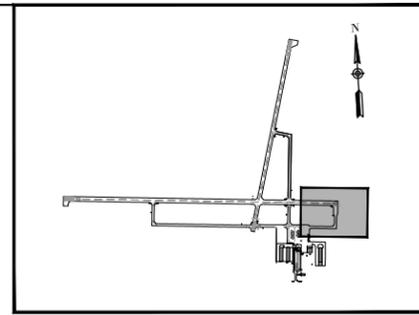
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EXISTING RUNWAY 9-27 ELECTRICAL PLAN SHEET 3

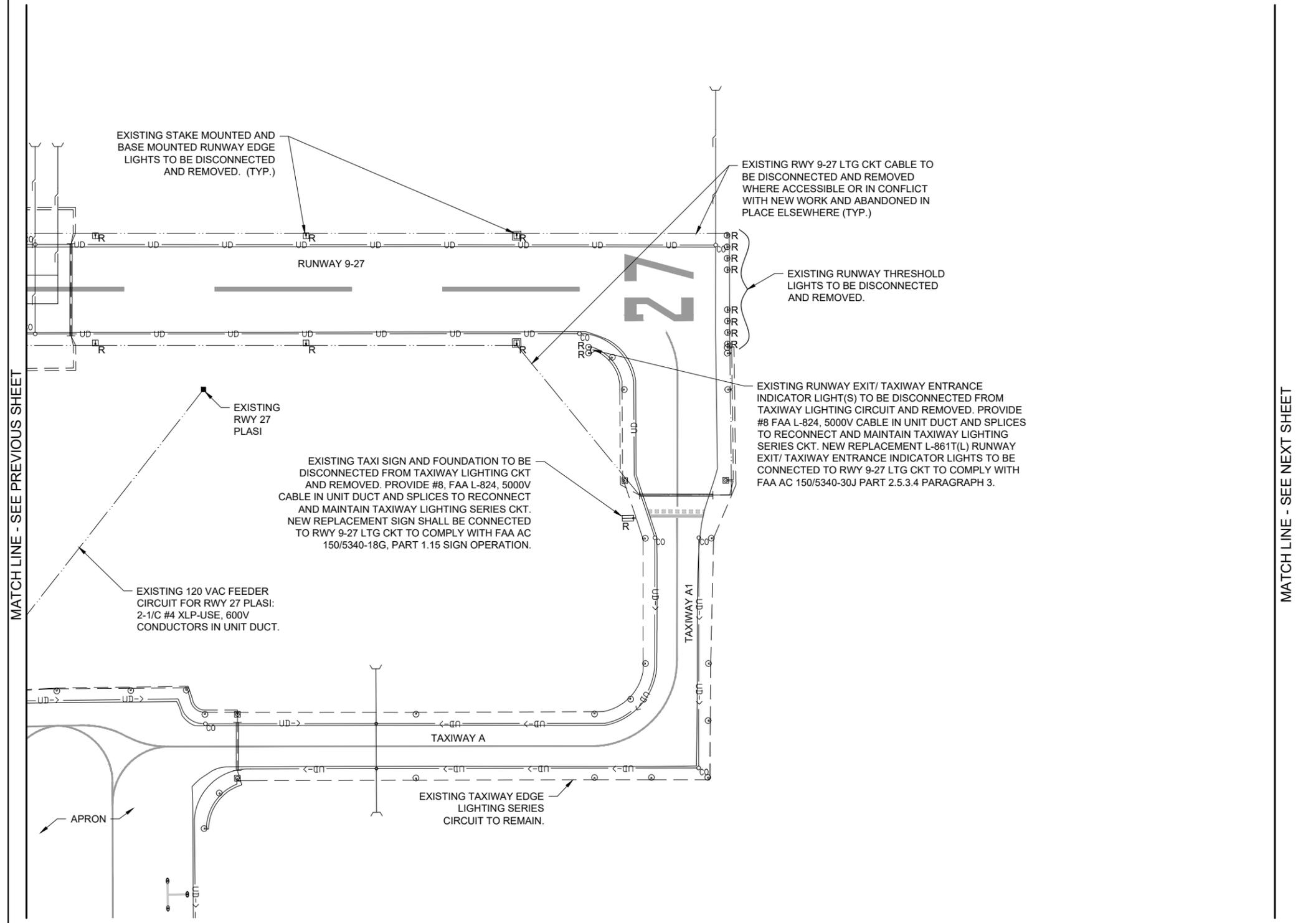
FOR BID



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

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



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REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

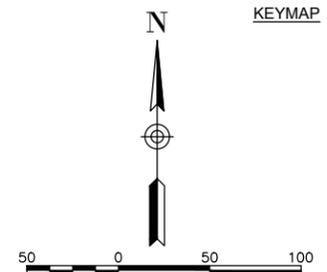
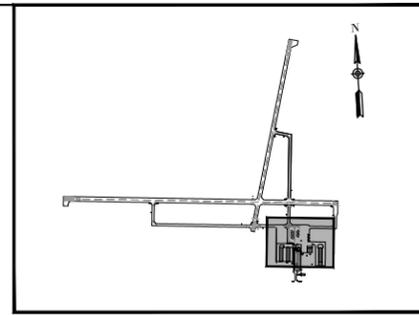
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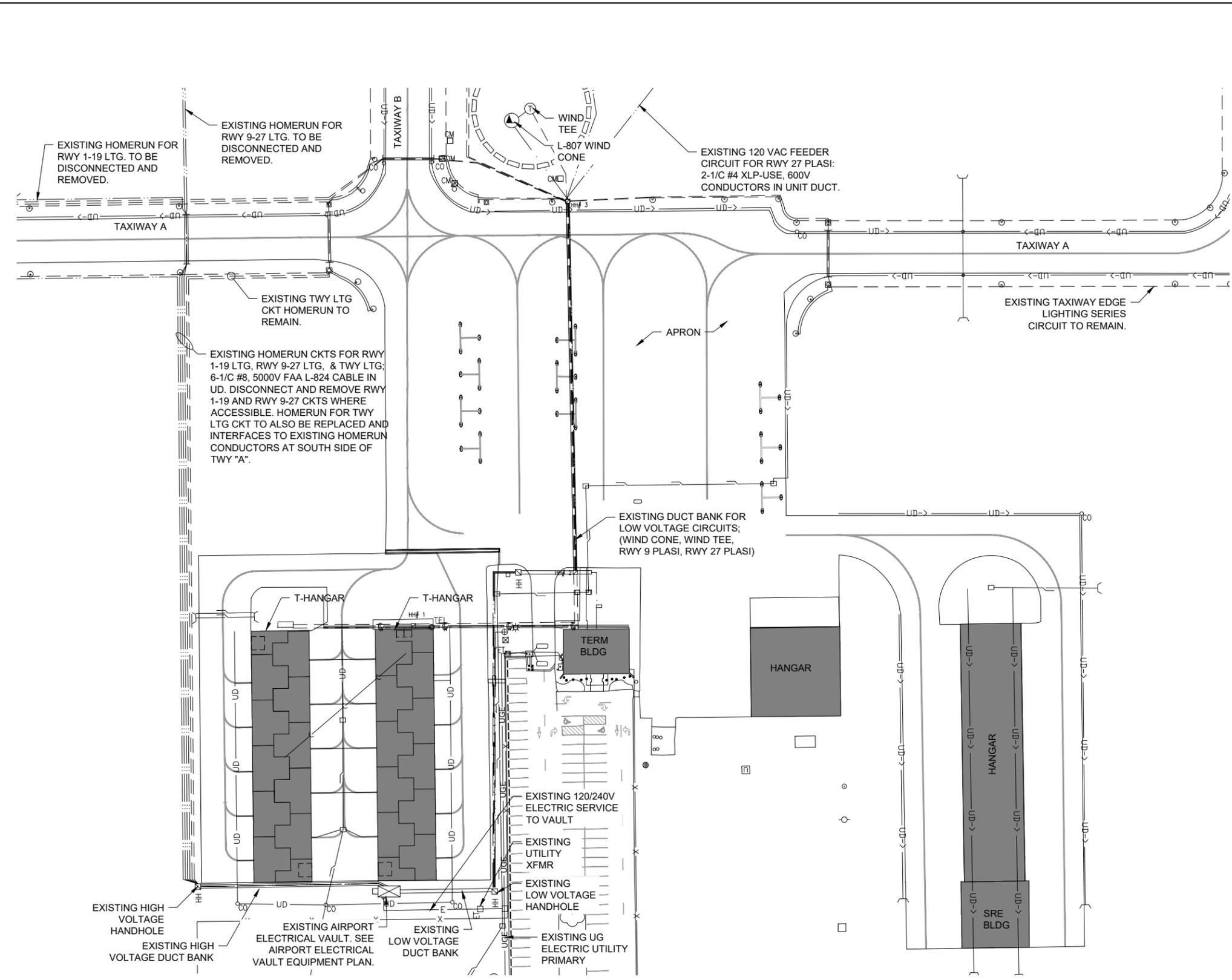
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EXISTING RUNWAY 9-27 ELECTRICAL PLAN SHEET 5



LEGEND

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



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REPLACE RUNWAY AIRFIELD LIGHTING

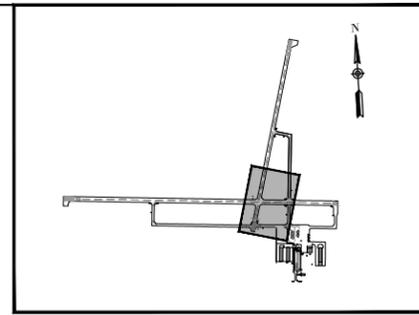
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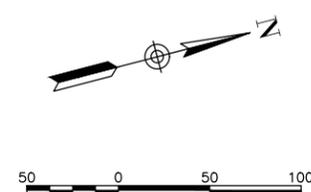
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ISSUE: NOVEMBER 18, 2022				
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CAD FILE: E-101-PLN.DWG				
LAYOUT BY: KNL 8/31/2022				
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REVIEWED BY: LDH 11/15/2022				
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SHEET TITLE				

EXISTING HOMERUN ELECTRICAL PLAN



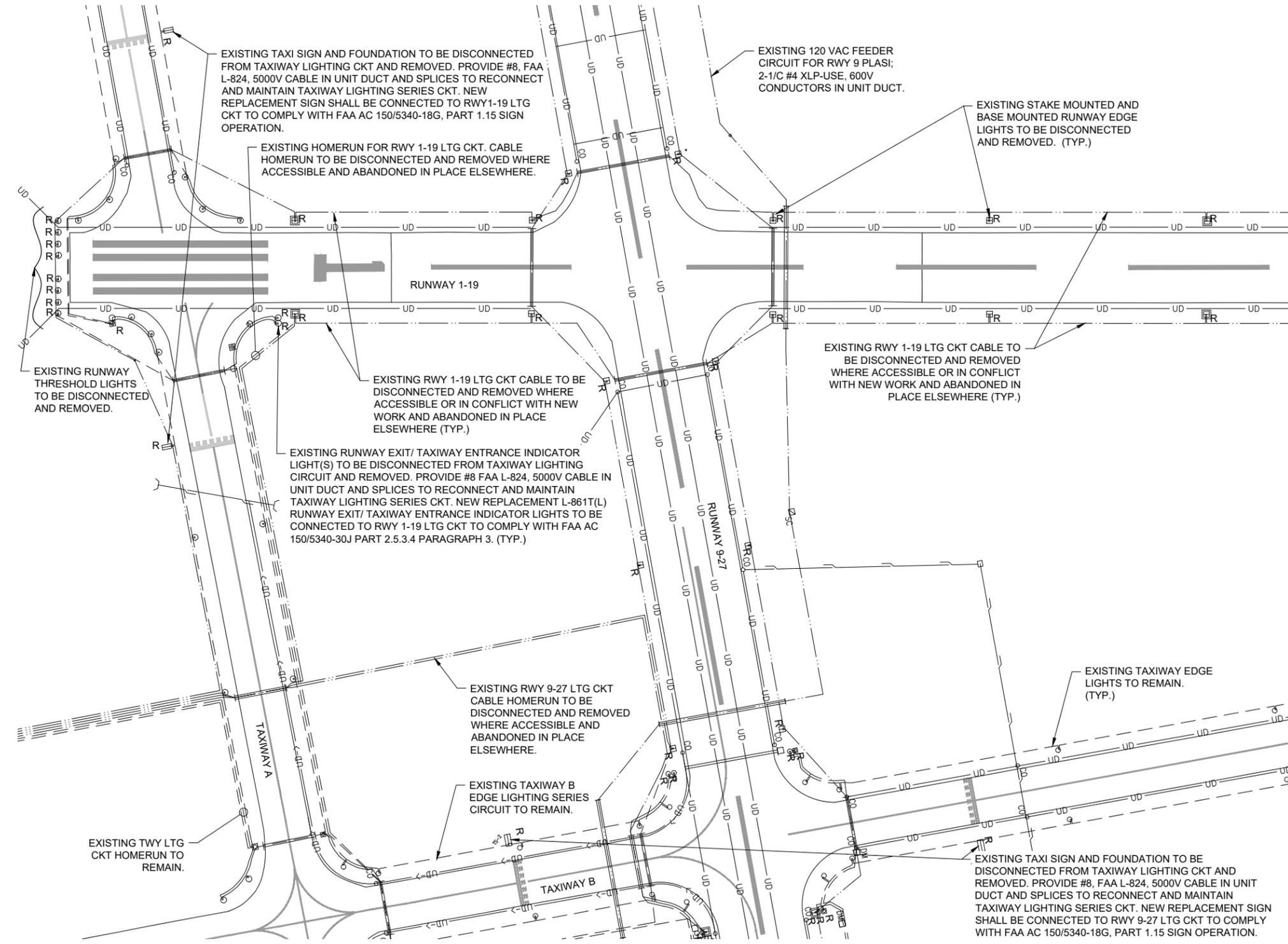
KEYMAP



LEGEND

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

MATCH LINE - SEE NEXT SHEET



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FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

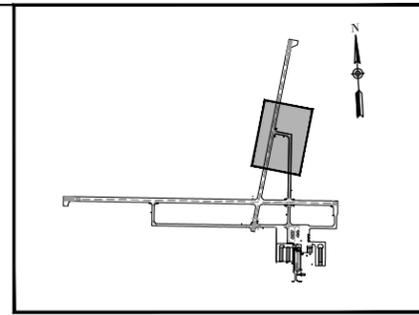
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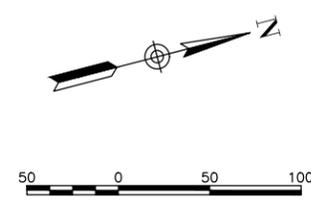
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EXISTING RUNWAY 1-19 ELECTRICAL PLAN SHEET 1



KEYMAP

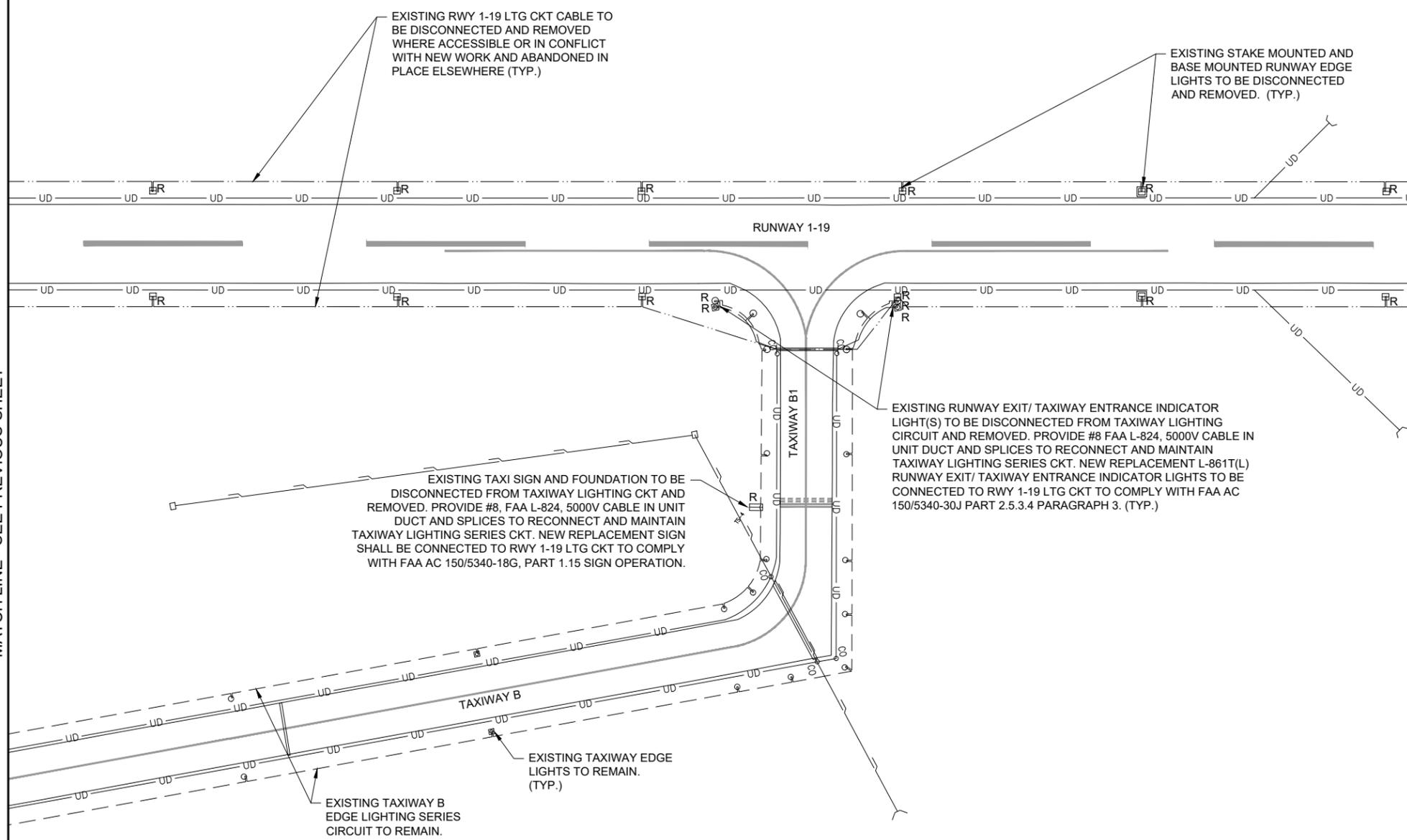


LEGEND

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

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET



REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

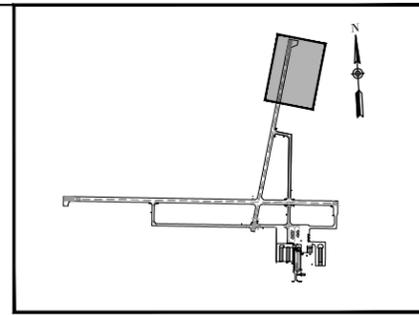
Contract No.: KE019

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

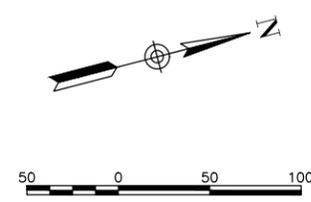
ISSUE: NOVEMBER 18, 2022
PROJECT NO: 22A0094D
CAD FILE: E-101-PLN.DWG
LAYOUT BY: KNL 8/31/2022
DRAWN BY: CWS 9/8/2022
REVIEWED BY: LDH 11/15/2022
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SHEET TITLE

EXISTING RUNWAY 1-19 ELECTRICAL PLAN SHEET 2

FOR BID



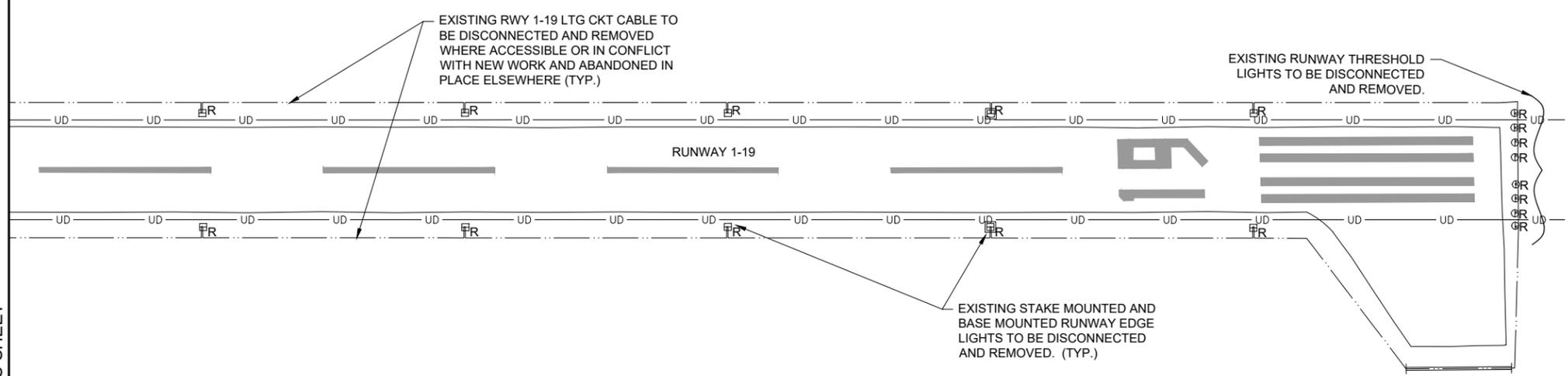
KEYMAP



LEGEND

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

MATCH LINE - SEE PREVIOUS SHEET



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FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

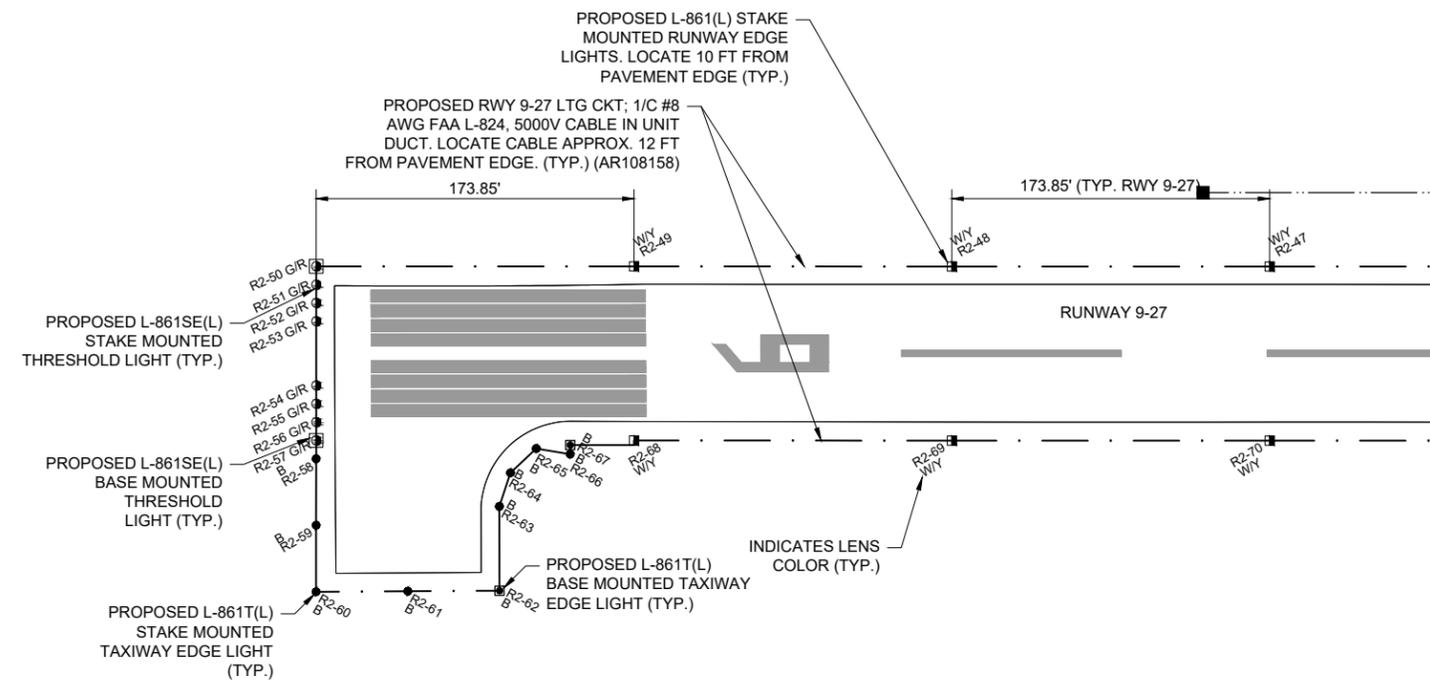
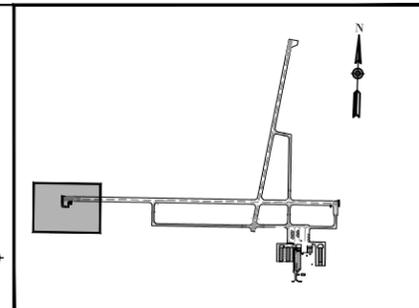
SBGP No:
3-17-SBGP-184

Contract No.: KE019

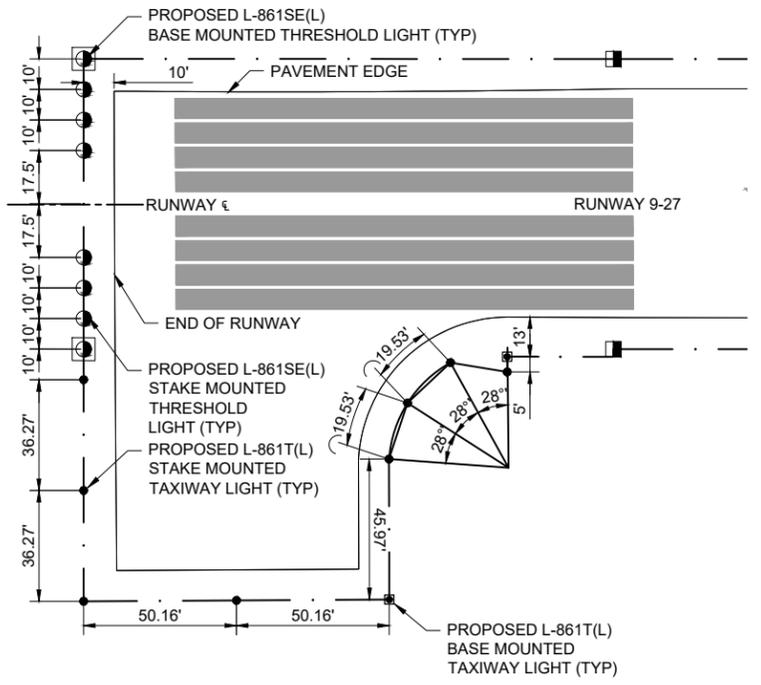
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: NOVEMBER 18, 2022
PROJECT NO: 22A0094D
CAD FILE: E-101-PLN.DWG
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SHEET TITLE

EXISTING RUNWAY 1-19 ELECTRICAL PLAN SHEET 3



- LEGEND**
- EXISTING PAVEMENT
 - EXISTING BUILDING
 - EXISTING MARKING
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING ELECTRICAL CIRCUIT
 - EXISTING ELECTRICAL CABLES
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER/UNDERDRAIN
 - EXISTING ELECTRIC UTILITY UG PRIMARY
 - EXISTING TELEPHONE
 - EXISTING GAS
 - EXISTING FENCE
 - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 3/4" (MIN) UNIT DUCT
 - PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED STAKE MOUNTED RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED IN PAVEMENT RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
 - PROPOSED STAKE MOUNTED RUNWAY THRESHOLD LIGHT
 - PROPOSED L-861T(L) STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED L-861T(L) BASE MOUNTED TAXIWAY LIGHT
 - EXISTING RUNWAY/TAXI GUIDANCE SIGN
 - PROPOSED TAXI GUIDANCE SIGN
 - EXISTING ELECTRICAL HANDHOLE
 - EXISTING SPLICE CAN
 - PROPOSED ELECTRICAL HANDHOLE
 - PROPOSED SPLICE CAN
 - EXISTING WIND CONE



PROPOSED RUNWAY END 9 THRESHOLD AND TURNAROUND LIGHT DETAIL
NOT TO SCALE

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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MATCH LINE - SEE NEXT SHEET

FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

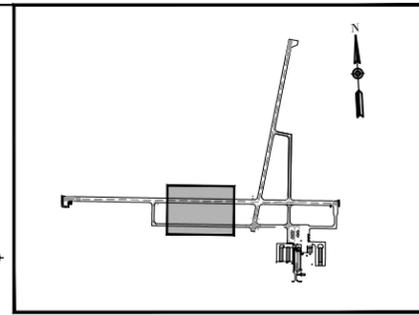
SBGP No:
3-17-SBGP-184

Contract No.: KE019

NO.	DATE	DESCRIPTION		
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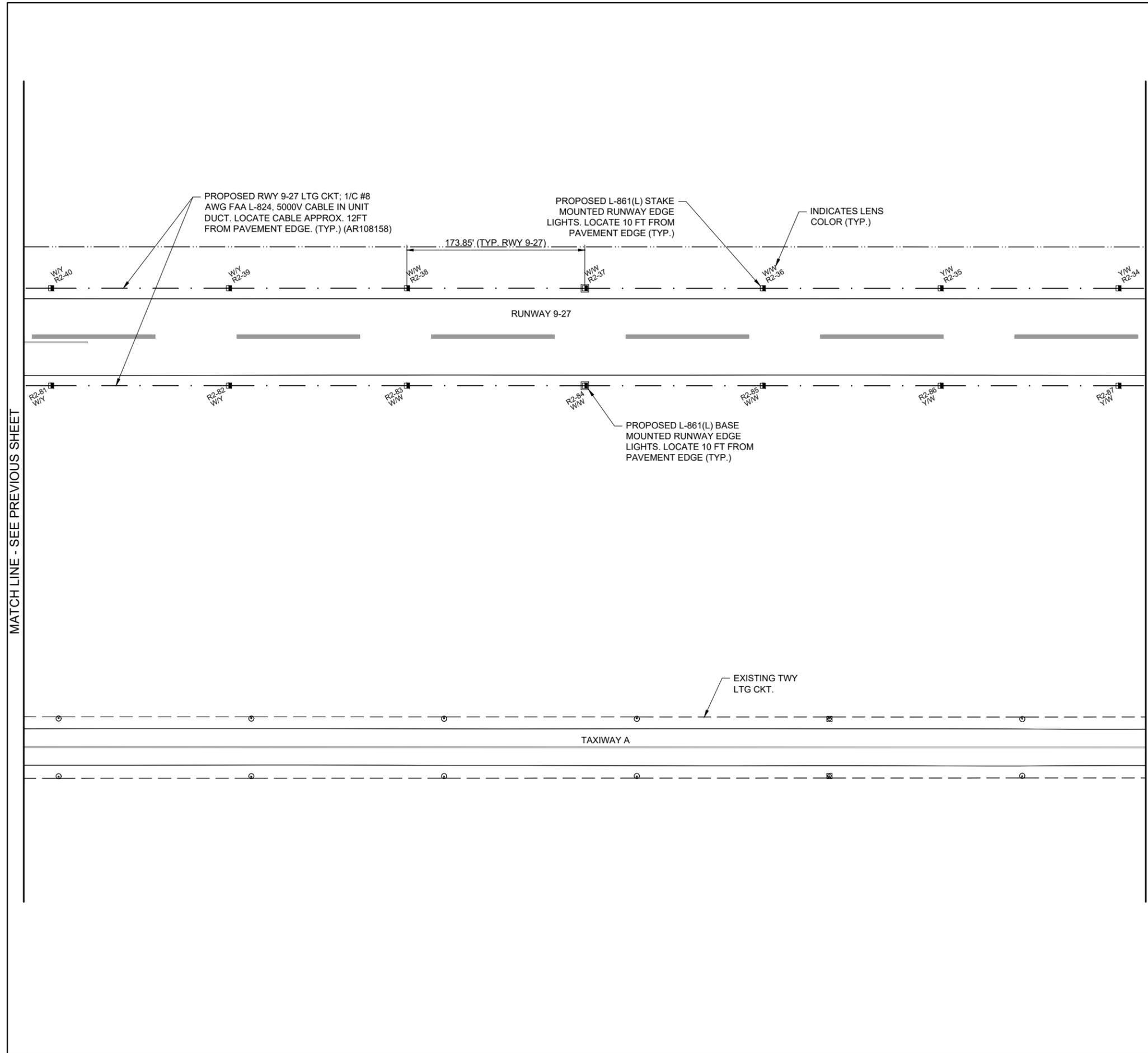
ISSUE: NOVEMBER 18, 2022
PROJECT NO: 22A0094D
CAD FILE: E-102-PLN.DWG
LAYOUT BY: KNL 8/9/2022
DRAWN BY: CWS 9/16/2022
REVIEWED BY: LDH 11/15/2022
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SHEET TITLE

PROPOSED RUNWAY 9-27 ELECTRICAL PLAN SHEET 1



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- EXISTING ELECTRICAL CABLES
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 3/4" (MIN) UNIT DUCT
- PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED IN PAVEMENT RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED STAKE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED L-861T(L) STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED L-861T(L) BASE MOUNTED TAXIWAY LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED SPLICE CAN
- EXISTING WIND CONE



MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

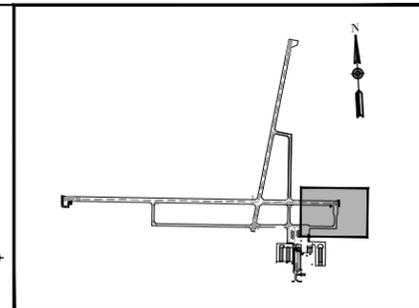
Contract No.: KE019

NO.	DATE	DESCRIPTION		
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SHEET TITLE

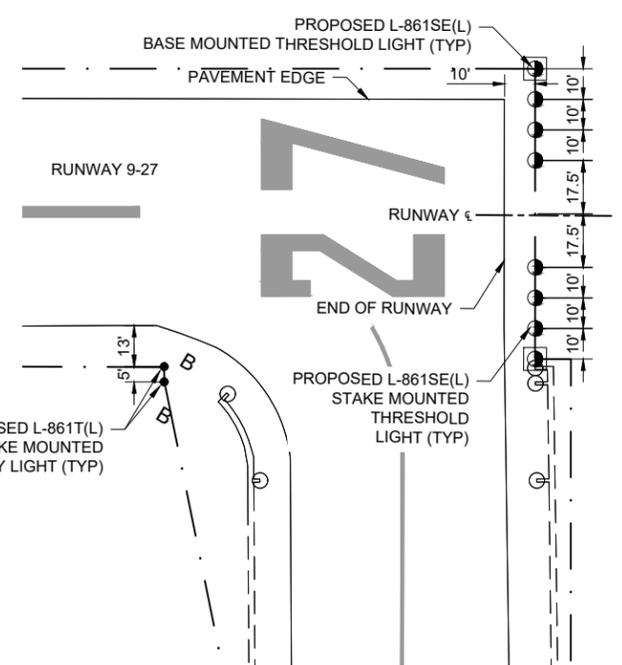
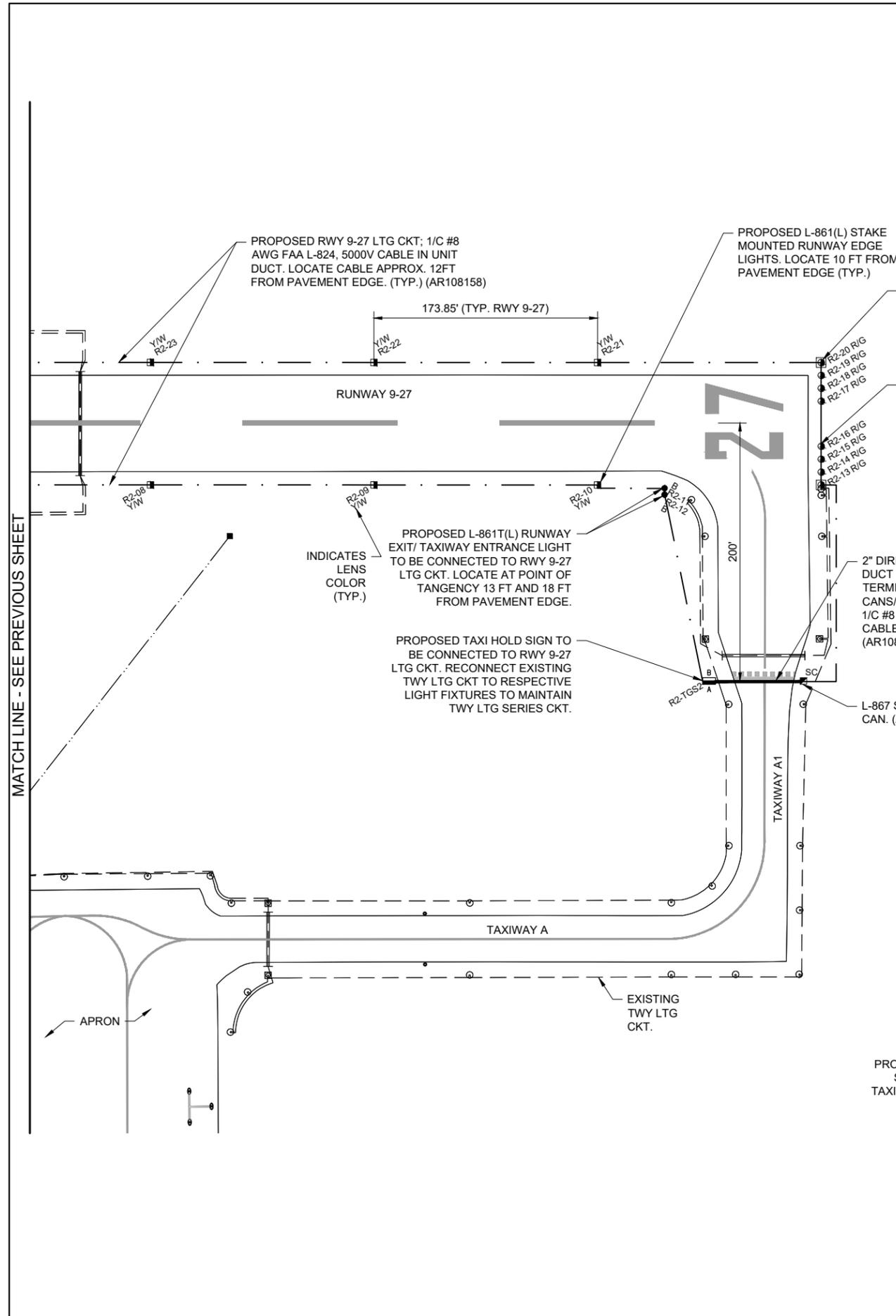
PROPOSED RUNWAY 9-27 ELECTRICAL PLAN SHEET 3

FOR BID



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- EXISTING ELECTRICAL CABLES
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 3/4" (MIN) UNIT DUCT
- PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED IN PAVEMENT RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED STAKE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED L-861T(L) STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED L-861T(L) BASE MOUNTED TAXIWAY LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED SPLICE CAN
- EXISTING WIND CONE



PROPOSED RUNWAY END 27 THRESHOLD LIGHT DETAIL
NOT TO SCALE

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE NEXT SHEET

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FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

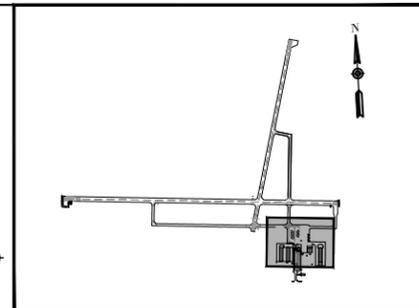
SBGP No:
3-17-SBGP-184

Contract No.: KE019

NO.	DATE	DESCRIPTION		
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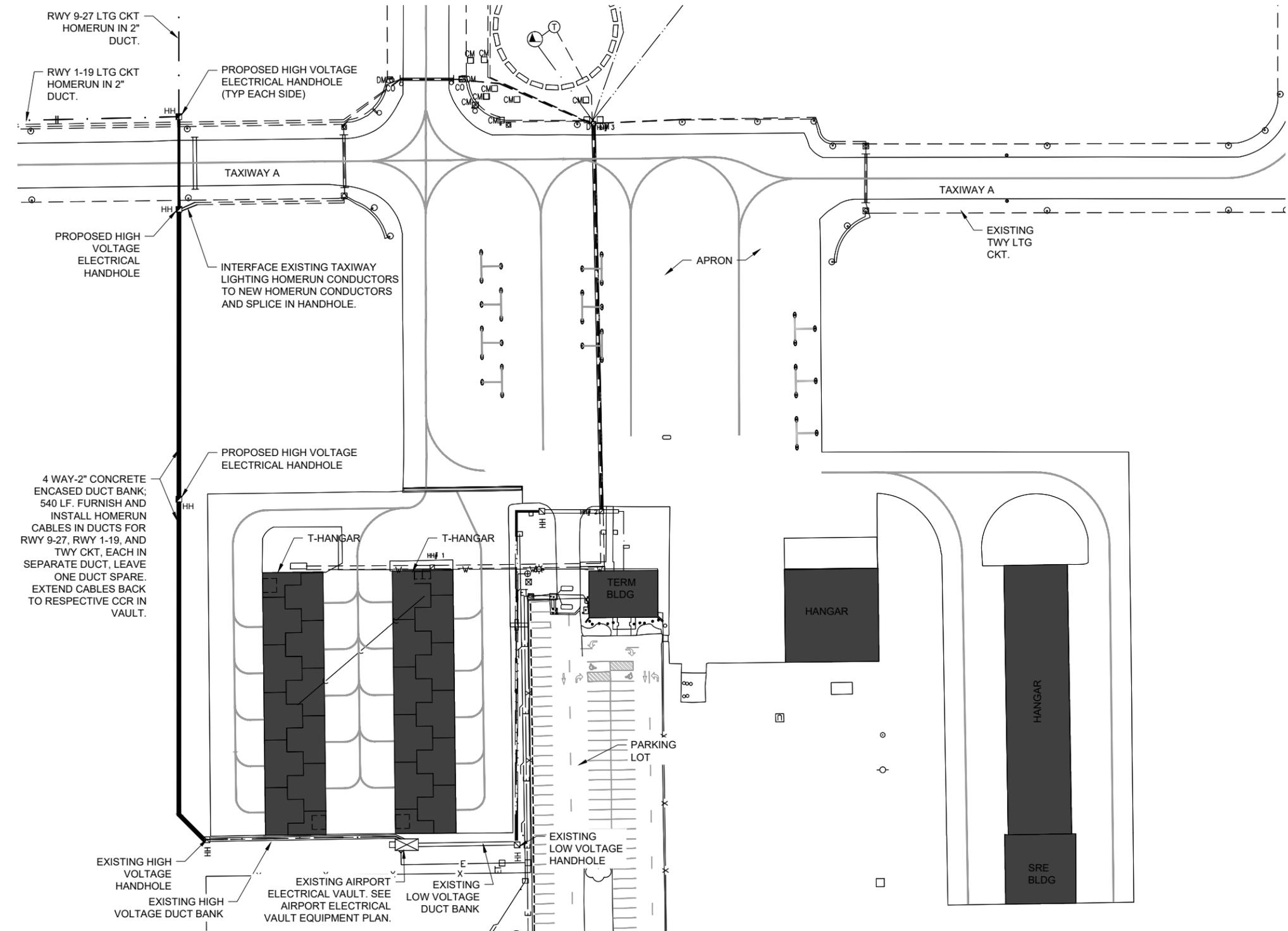
ISSUE: NOVEMBER 18, 2022
PROJECT NO: 22A0094D
CAD FILE: E-102-PLN.DWG
LAYOUT BY: KNL 8/9/2022
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SHEET TITLE

PROPOSED RUNWAY 9-27 ELECTRICAL PLAN SHEET 5



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- EXISTING ELECTRICAL CABLES
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 3/4" (MIN) UNIT DUCT
- PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED IN PAVEMENT RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED STAKE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED L-861T(L) STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED L-861T(L) BASE MOUNTED TAXIWAY LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED SPLICE CAN
- EXISTING WIND CONE



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REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

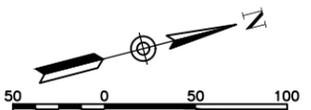
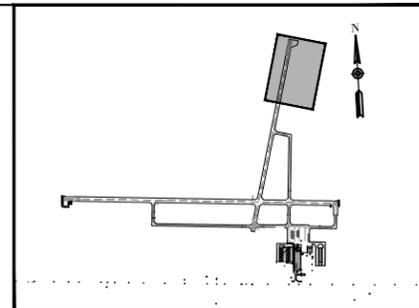
Contract No.: KE019

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ISSUE: NOVEMBER 18, 2022
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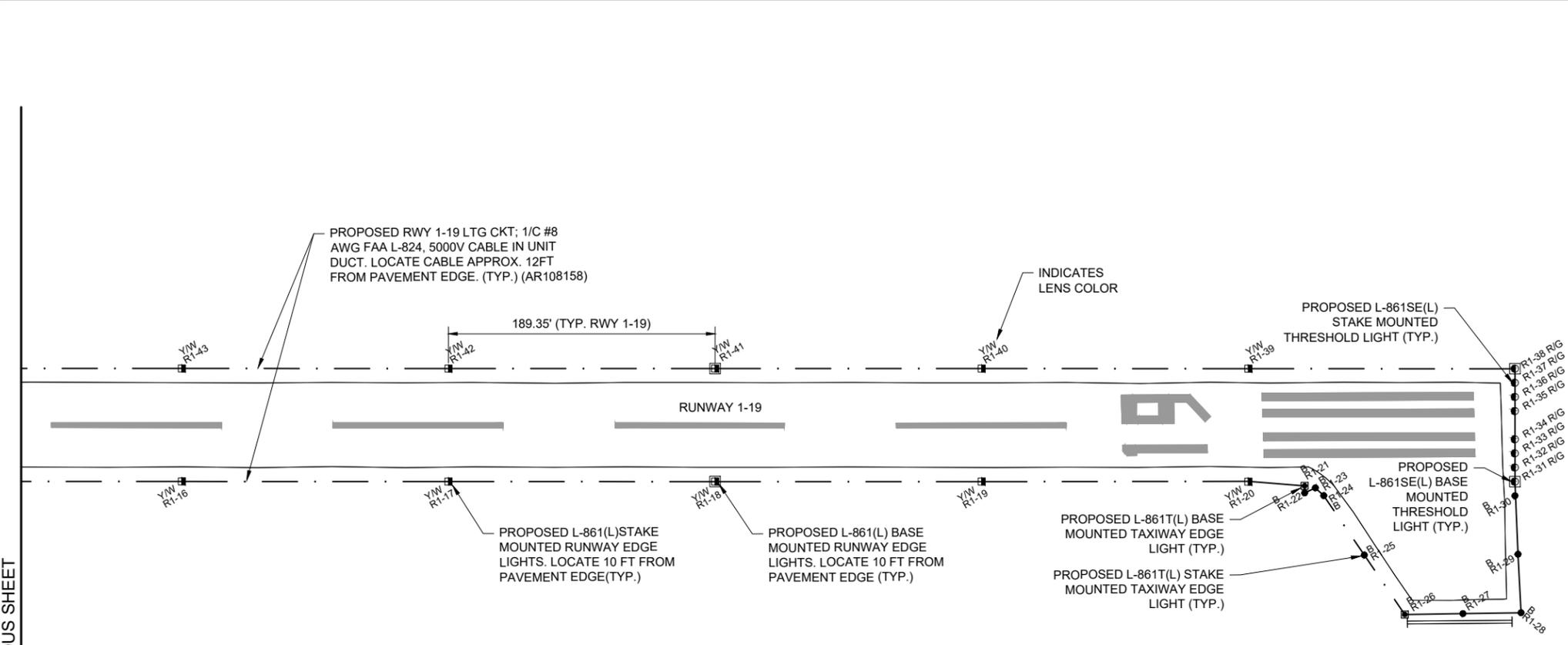
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FOR BID

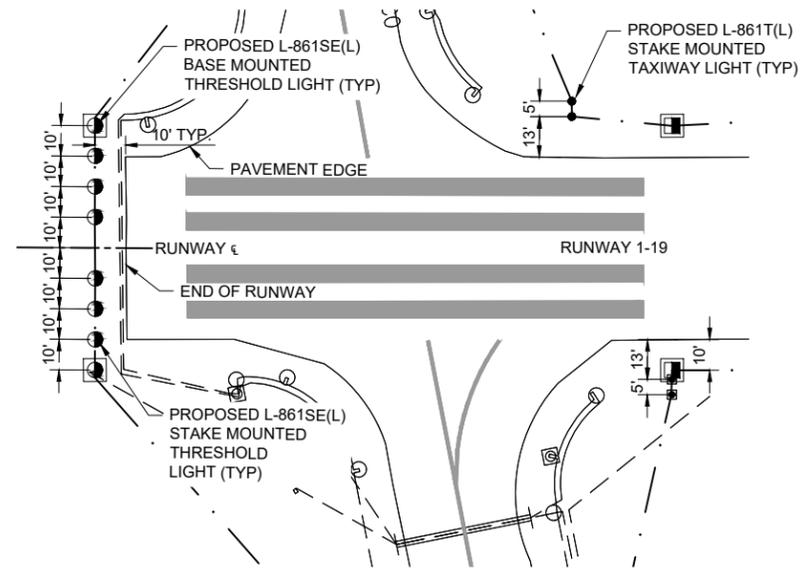


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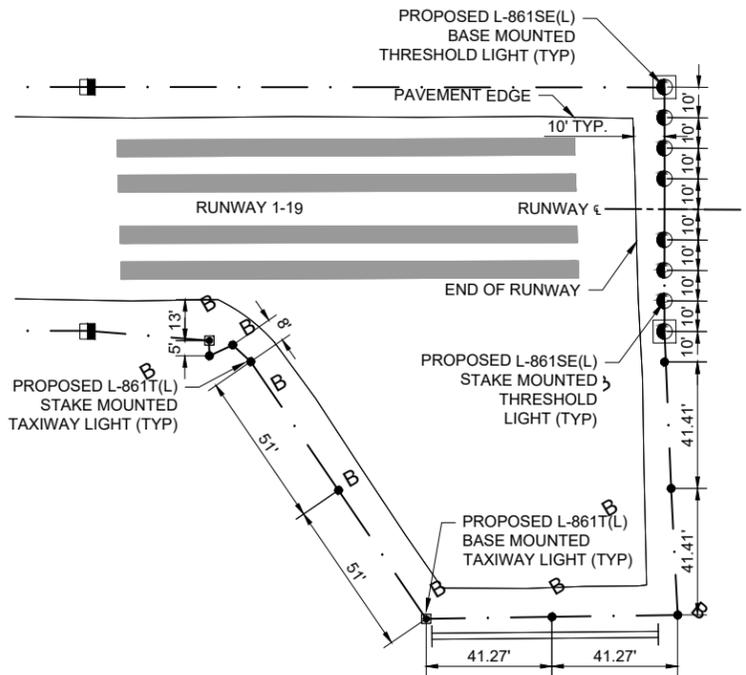
- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING MARKING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CIRCUIT
- EXISTING ELECTRICAL CABLES
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER/UNDERDRAIN
- EXISTING ELECTRIC UTILITY UG PRIMARY
- EXISTING TELEPHONE
- EXISTING GAS
- EXISTING FENCE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 3/4" (MIN) UNIT DUCT
- PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN 2" SCHED 40 (MIN.) PVC OR HDPE DUCT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED IN PAVEMENT RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED STAKE MOUNTED RUNWAY THRESHOLD LIGHT
- PROPOSED L-861T(L) STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED L-861T(L) BASE MOUNTED TAXIWAY LIGHT
- EXISTING RUNWAY/TAXI GUIDANCE SIGN
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED SPLICE CAN
- EXISTING WIND CONE



MATCH LINE - SEE PREVIOUS SHEET



PROPOSED RUNWAY END 1 THRESHOLD LIGHT DETAIL
NOT TO SCALE



PROPOSED RUNWAY END 19 THRESHOLD LIGHT DETAIL
NOT TO SCALE

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FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

Contract No.: KE019

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: NOVEMBER 18, 2022
PROJECT NO: 22A0094D
CAD FILE: E-102-PLN.DWG
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PROPOSED RUNWAY 1-19 ELECTRICAL PLAN SHEET 3



RUNWAY 1-19 LIGHT LENS SCHEDULE			
LIGHT NUMBERS	LENS	ORIENTATION	FIXTURE TYPE
R1-01 TO R1-02	BLUE	---	L-861T(L)
R1-03 TO R1-09	WHITE/YELLOW	YELLOW SIDE FACING NORTH	L-861(L)
R1-10 TO R1-13	BLUE	---	L-861T(L)
R1-14 TO R1-20	WHITE/YELLOW	YELLOW SIDE FACING SOUTH	L-861(L)
R1-21 TO R1-30	BLUE	---	L-861T(L)
R1-31 TO R1-38	RED/GREEN	GREEN SIDE FACING NORTH (TOWARD RUNWAY 19 APPROACH)	L-861SE(L)
R1-39 TO R1-46	WHITE/YELLOW	YELLOW SIDE FACING SOUTH	L-861T(L)
R1-47 TO R1-54	WHITE/YELLOW	YELLOW SIDE FACING NORTH	L-861(L)
R1-55 TO R1-56	BLUE	---	L-861T(L)
R1-57 TO R1-64	RED/GREEN	GREEN SIDE FACING SOUTH (TOWARD RUNWAY 1 APPROACH)	L-861SE(L)

RUNWAY 9-27 LIGHT LENS SCHEDULE			
LIGHT NUMBERS	LENS	ORIENTATION	FIXTURE TYPE
R2-01 TO R2-02	WHITE/YELLOW	YELLOW SIDE FACING WEST	L-861(L)
R2-03 TO R2-06	BLUE	---	L-861T(L)
R2-07 TO R2-10	WHITE/YELLOW	YELLOW SIDE FACING WEST	L-861(L)
R2-11 TO R2-12	BLUE	---	L-861T(L)
R2-13 TO R2-20	RED/GREEN	GREEN SIDE FACING EAST (TOWARD RUNWAY 27 APPROACH)	L-861SE(L)
R2-21 TO R2-24	WHITE/YELLOW	YELLOW SIDE FACING WEST	L-861(L)
R2-25 TO R2-28	BLUE	---	L-861T(L)
R2-29 TO R2-35	WHITE/YELLOW	YELLOW SIDE FACING WEST	L-861(L)
R2-36 TO R2-38	WHITE/WHITE	---	L-861(L)
R2-39 TO R2-49	WHITE/YELLOW	YELLOW SIDE FACING EAST	L-861(L)
R2-50 TO R2-57	RED/GREEN	GREEN SIDE FACING WEST (TOWARD RUNWAY 9 APPROACH)	L-861SE(L)
R2-58 TO R2-67	BLUE	---	L-861T(L)
R2-68 TO R2-75	WHITE/YELLOW	YELLOW SIDE FACING EAST	L-861(L)
R2-76 TO R2-79	BLUE	---	L-861T(L)
R2-80 TO R2-82	WHITE/YELLOW	YELLOW SIDE FACING EAST	L-861(L)
R2-83 TO R2-85	WHITE/WHITE	---	L-861(L)
R2-86 TO R2-90	WHITE/YELLOW	YELLOW SIDE FACING WEST	L-861(L)

REPLACE RUNWAY
AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

Contract No.: KE019

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: NOVEMBER 18, 2022

PROJECT NO: 22A0094D

CAD FILE: E-642-SCHED.DWG

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SHEET TITLE

LIGHT LENS
SCHEDULES

FOR BID



NOTES:

1. 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).
2. 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.
3. ALL SIGNS SHALL BE ORIENTATED SUCH THAT THE LONGITUDINAL CENTERLINE OF THE SIGN IS PERPENDICULAR TO THE RESPECTIVE TAXIWAY/RUNWAY CENTERLINE, UNLESS NOTED OTHERWISE.
4. 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.
5. 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.
6. 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 AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION".
7. 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.
8. SEE SPECIFICATION ITEM L-125 FOR ADDITIONAL REQUIREMENTS ON TAXI GUIDANCE SIGNS.
9. CONTRACTOR SHALL TEST THE EARTH GROUND RESISTANCE FOR THE GROUND ROD AT EACH RUNWAY/TAXI GUIDANCE SIGN

SIGN NUMBER	LOCATION	PROPOSED		GROUND RESISTANCE	REMARKS
		SIDE A	SIDE B		
R1-TGS1	RUNWAY 19 INTERSECTION WITH RUNWAY 27-9				NEW SIGN TYPE: L-858R(L), SIZE 1, STYLE 2, CLASS 2 MANDATORY HOLDING POSITION SIGN FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 1-19 LIGHTING CIRCUIT.
R1-TGS2	TAXIWAY B1 INTERSECTION WITH RUNWAY 1-19 AT HOLD LINE				NEW SIGN TYPE: L-858L/R(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 1-19 LIGHTING CIRCUIT.
R1-TGS3	RUNWAY 1 INTERSECTION WITH RUNWAY 9-27				NEW SIGN TYPE: L-858R(L), SIZE 1, STYLE 2, CLASS 2 MANDATORY HOLDING POSITION SIGHT FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 1-19 LIGHTING CIRCUIT.
R1-TGS4	TAXIWAY A INTERSECTION WITH RUNWAY 1 AT HOLD LINE (WEST SIDE OF RWY 1)				NEW SIGN TYPE: L-858L/R(Y)(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION WITH DIRECTION SIGN ON BACK. CONNECT TO RUNWAY 1-19 LIGHTING CIRCUIT.
R1-TGS5	TAXIWAY A INTERSECTION WITH RUNWAY 1 AT HOLD LINE (EAST SIDE OF RWY 1)				NEW SIGN TYPE: L-858L/R(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 1-19 LIGHTING CIRCUIT.
R2-TGS1	TAXIWAY B INTERSECTION WITH RUNWAY 9-27 AT HOLD LINE				NEW SIGN TYPE: L-858L/R(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION WITH DIRECTION SIGN ON BACK. CONNECT TO RUNWAY 9-27 LIGHTING CIRCUIT.
R2-TGS2	TAXIWAY A1 INTERSECTION WITH RUNWAY 27 END AT HOLD LINE				NEW SIGN TYPE: L-858L/R(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 9-27 LIGHTING CIRCUIT.
R2-TGS3	TAXIWAY B INTERSECTION WITH RUNWAY 27-9 AT HOLD LINE				NEW SIGN TYPE: L-858R(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION WITH DIRECTION SIGN ON BACK. CONNECT TO RUNWAY 9-27 LIGHTING CIRCUIT.
R2-TGS4	RUNWAY 9 INTERSECTION WITH RUNWAY 19-1				NEW SIGN TYPE: L-858R(L), SIZE 1, STYLE 2, CLASS 2 MANDATORY HOLDING POSITION SIGN FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 9-27 LIGHTING CIRCUIT.
R2-TGS5	TAXIWAY A2 INTERSECTION WITH RUNWAY 9-27 AT HOLD LINE				NEW SIGN TYPE: L-858L/R(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 9-27 LIGHTING CIRCUIT.
R2-TGS6	RUNWAY 27 INTERSECTION WITH RUNWAY 1-19				NEW SIGN TYPE: L-858R(L), SIZE 1, STYLE 2, CLASS 2 MANDATORY HOLDING POSITION SIGN FOR RUNWAY/RUNWAY INTERSECTION. CONNECT TO RUNWAY 9-27 LIGHTING CIRCUIT.

TAXI GUIDANCE SIGN LEGEND	
	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

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

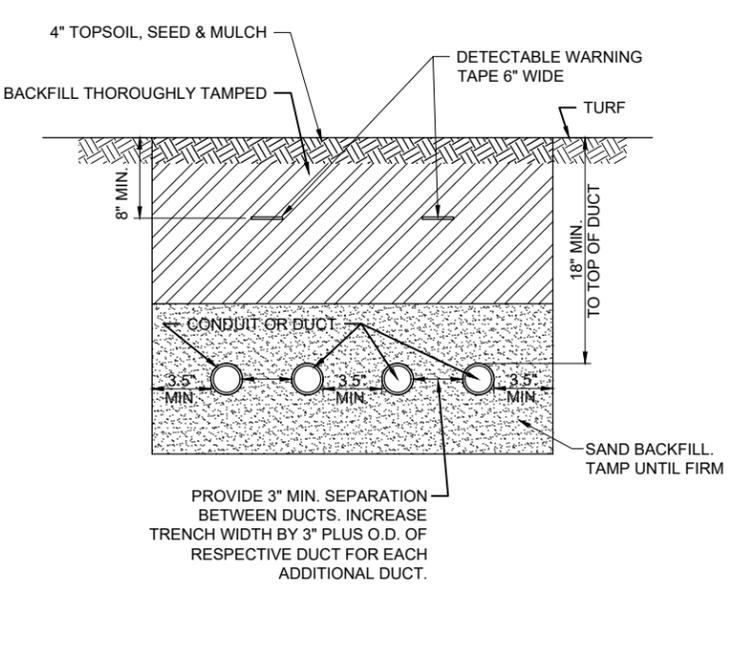
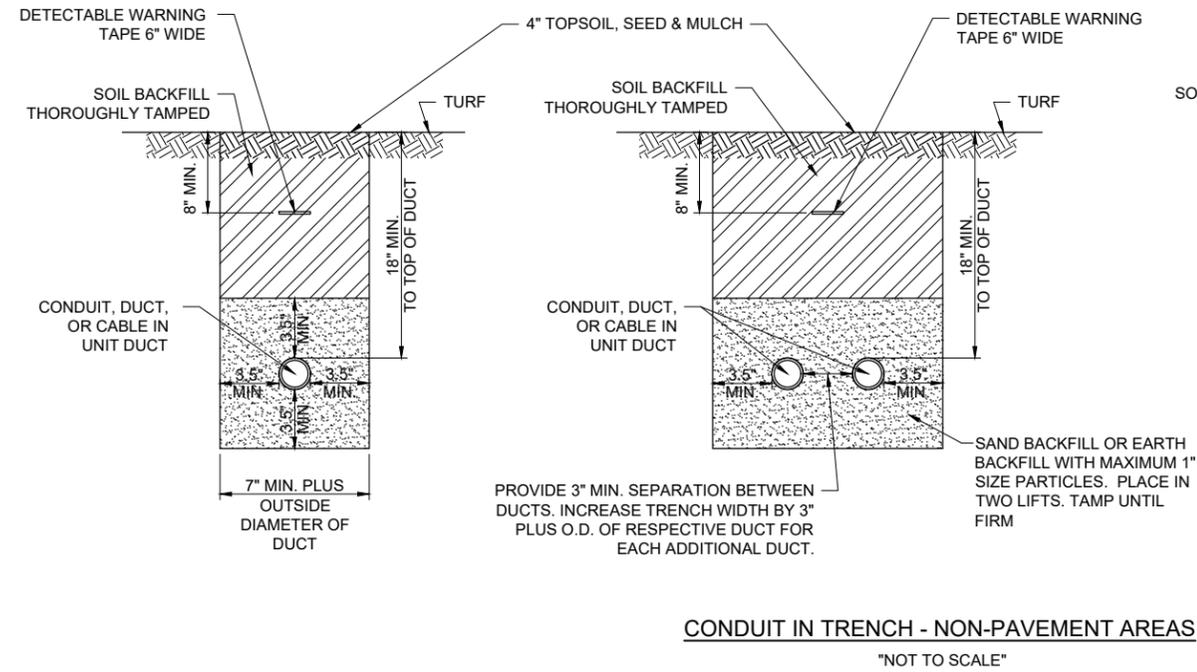
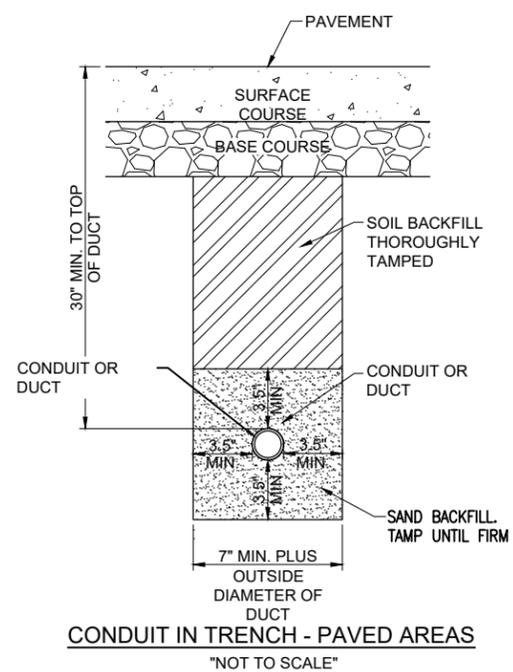
Contract No.: KE019

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: NOVEMBER 18, 2022
PROJECT NO: 22A0094D
CAD FILE: E-641-SCHED.DWG
LAYOUT BY: KNL 8/31/2022
DRAWN BY: CWS 9/8/2022
REVIEWED BY: LDH 11/15/2022
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SHEET TITLE

TAXI GUIDANCE SIGN SCHEDULE AND NOTES

FOR BID



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 FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
- 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.

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

Contract No.: KE019

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: NOVEMBER 18, 2022

PROJECT NO: 22A0094D

CAD FILE: E-504-DETL.DWG

LAYOUT BY: KNL 8/31/2022

DRAWN BY: CWS 9/8/2022

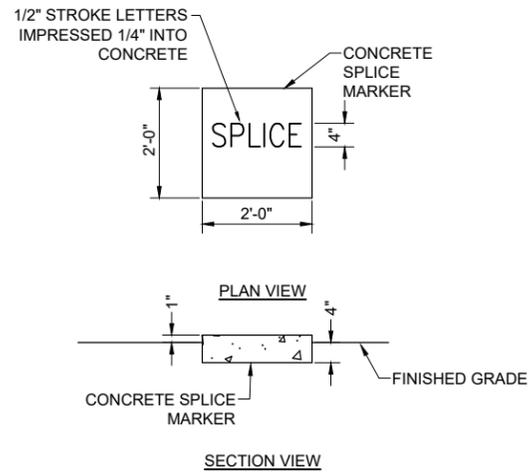
REVIEWED BY: LDH 11/15/2022

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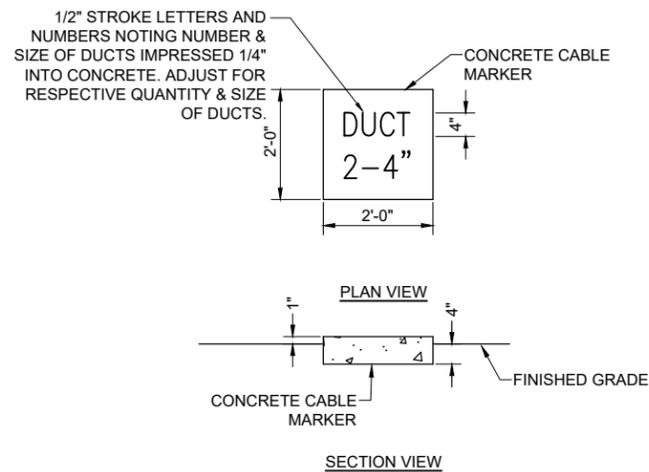
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CONDUIT TRENCH DETAIL

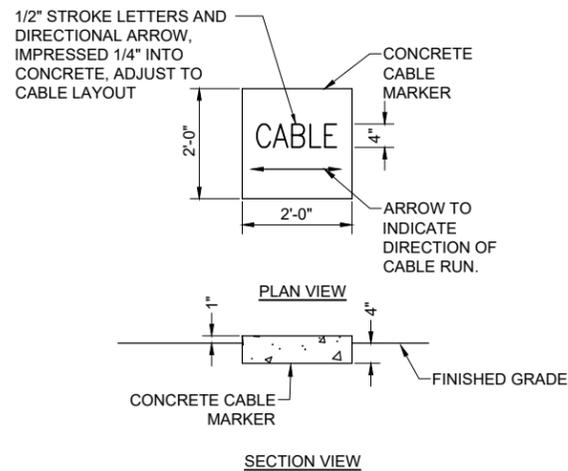
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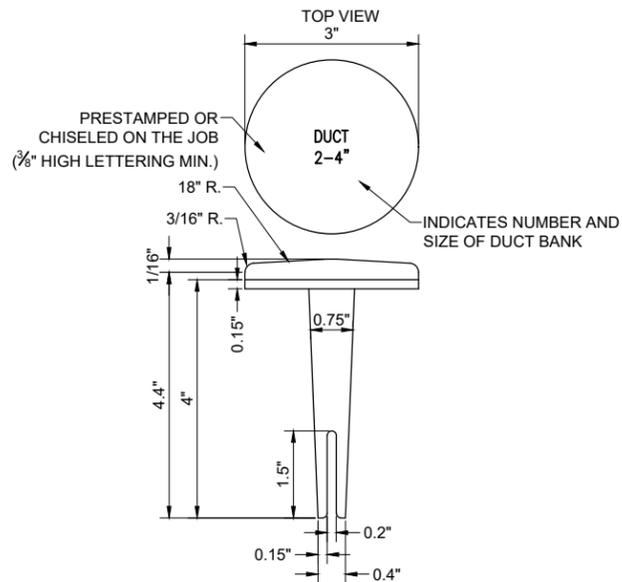
TURF CABLE MARKERS
"NOT TO SCALE"



TURF CABLE MARKERS
"NOT TO SCALE"



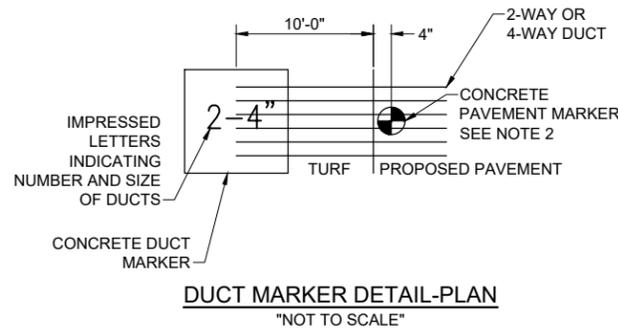
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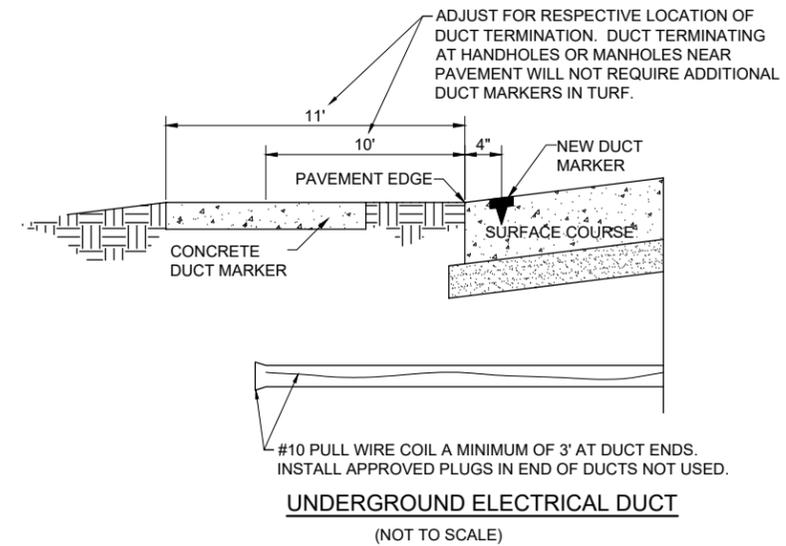
BITUMINOUS PAVEMENT DUCT MARKERS
"NOT TO SCALE"

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.



DUCT MARKER DETAIL-PLAN
"NOT TO SCALE"



UNDERGROUND ELECTRICAL DUCT
(NOT TO SCALE)

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.

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

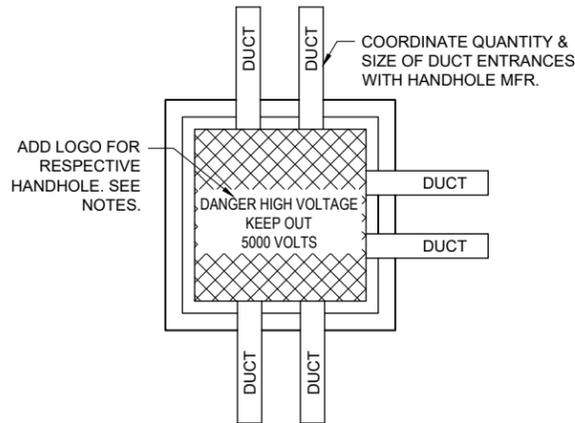
SBGP No:
3-17-SBGP-184

Contract No.: KE019

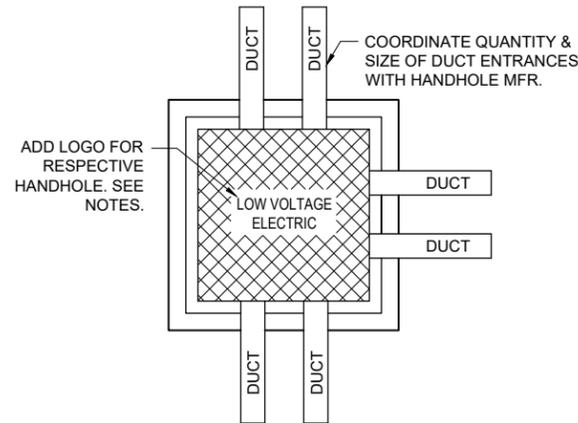
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ISSUE: NOVEMBER 18, 2022
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SHEET TITLE

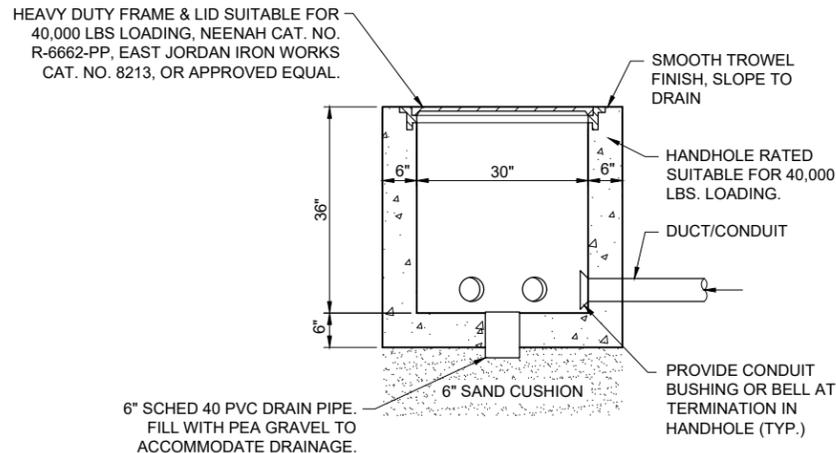
CABLE AND DUCT MARKER DETAILS



HIGH VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"



LOW VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"

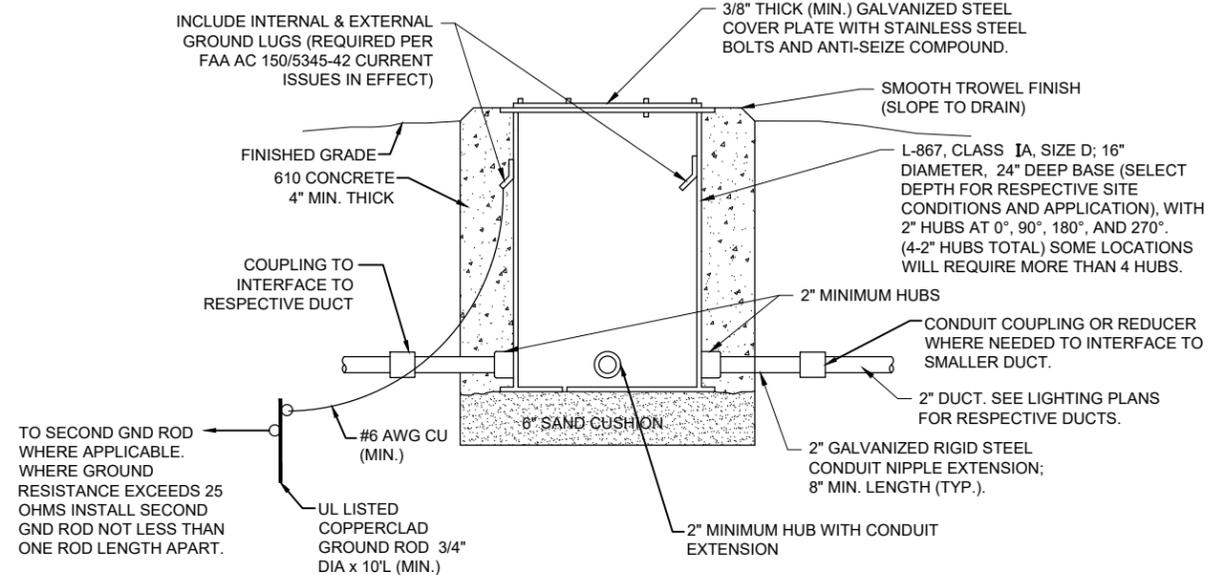


ELEVATION
"NOT TO SCALE"

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.

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

Contract No.: KE019

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: NOVEMBER 18, 2022

PROJECT NO: 22A0094D

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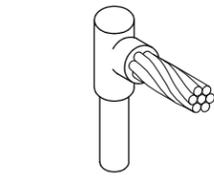
SHEET TITLE

HANDHOLE AND SPLICE CAN DETAILS

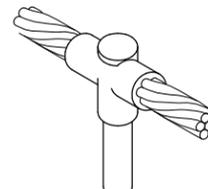
FOR BID



CABLE TO GROUND ROD



CABLE TO GROUND ROD



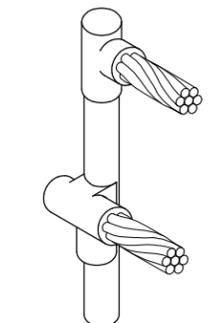
CABLE TO GROUND ROD



TO NEAREST GND ROD

TAP CONDUCTOR SHALL BE ROUTED IN THE DIRECTION TOWARDS THE NEAREST GROUND ROD

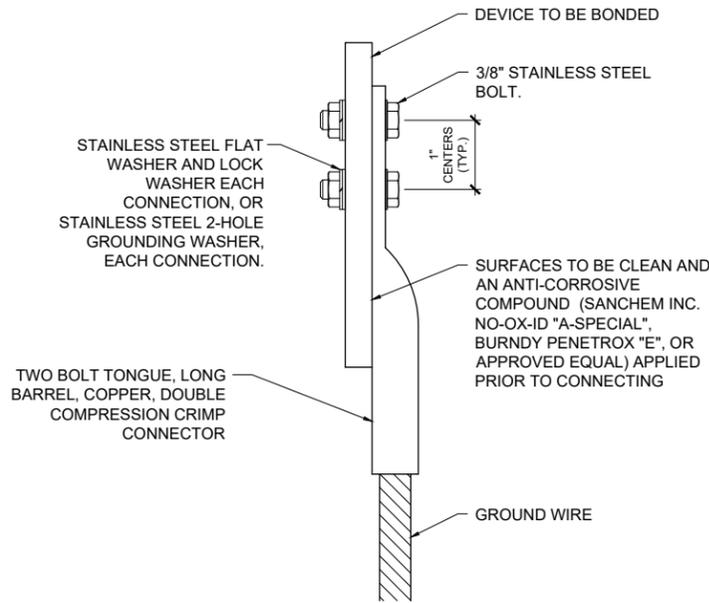
CABLE TO CABLE HORIZONTAL PARALLEL TAP



CABLES TO GROUND ROD



CABLE TO REBAR

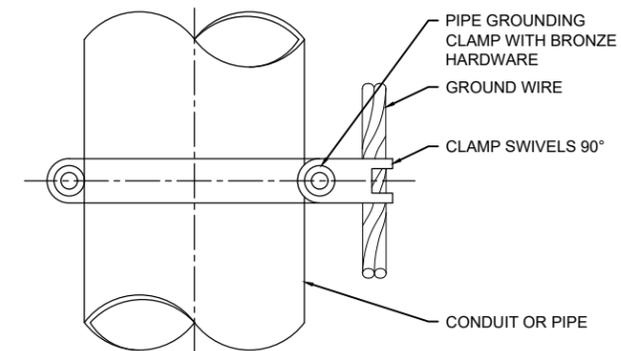
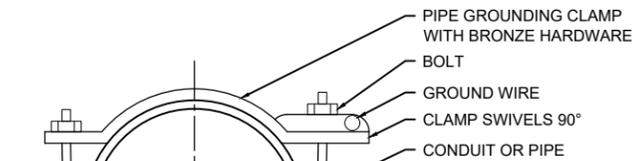


2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED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

NOTES

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

GROUNDING LUG CONNECTION DETAIL



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

DETAIL NOTES

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

EXOTHERMIC WELD DETAILS

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FOR BID

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
3-17-SBGP-184

Contract No.: KE019

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

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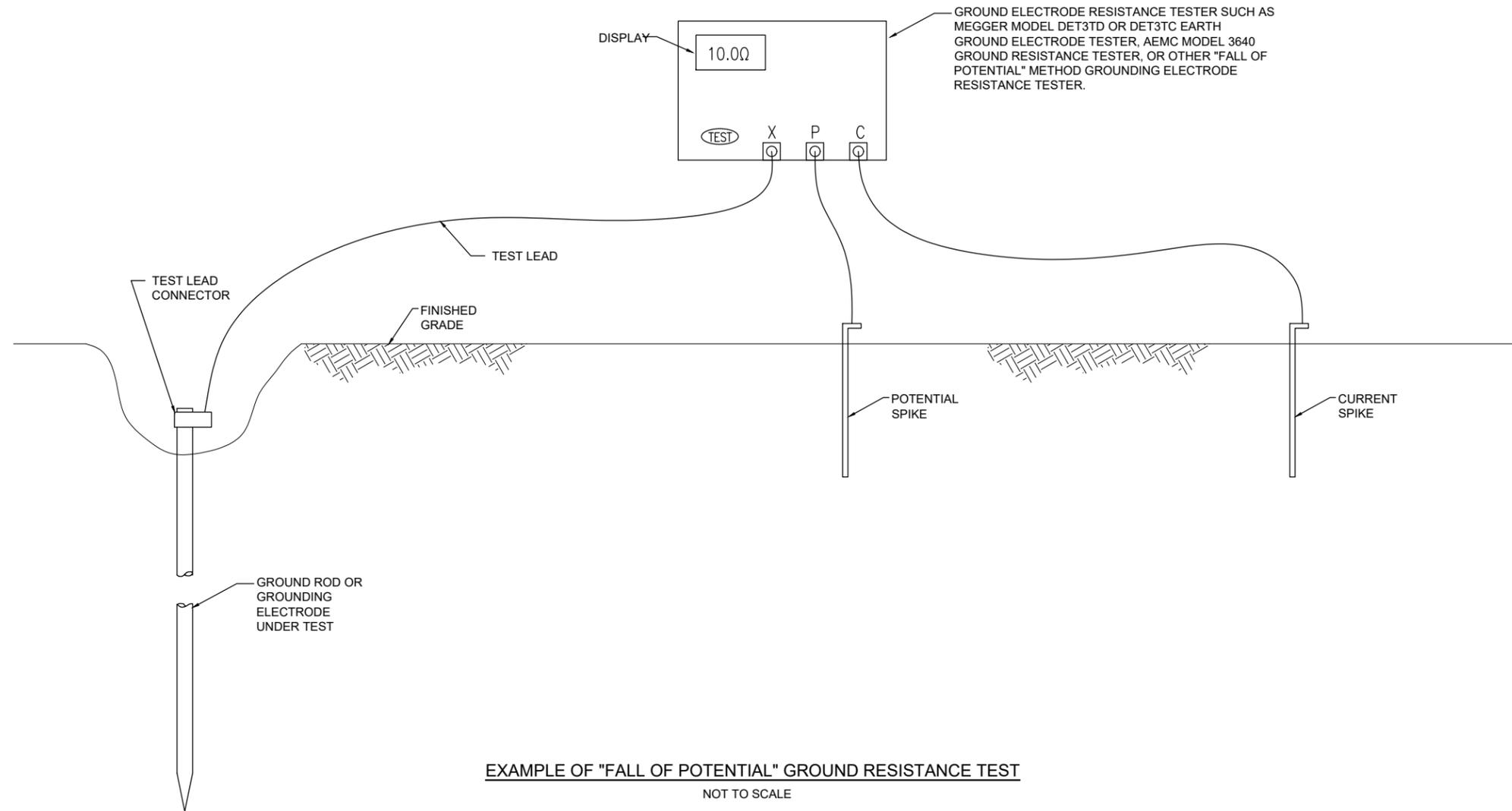
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SHEET TITLE

GROUNDING 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.

REPLACE RUNWAY AIRFIELD LIGHTING

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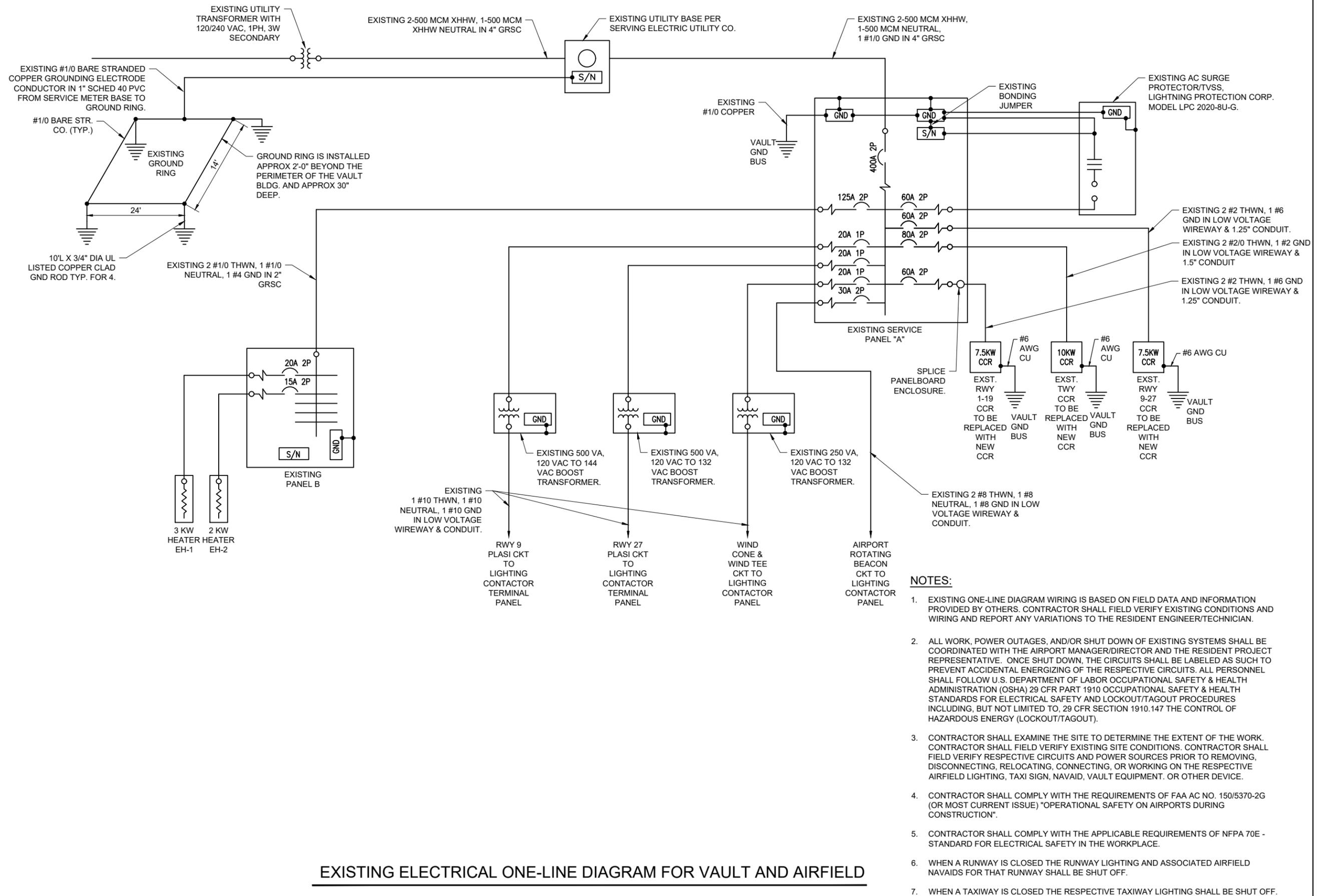
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SHEET TITLE

GROUND RESISTANCE TESTING DETAILS

FOR BID



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REPLACE RUNWAY
AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No:
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Contract No.: KE019

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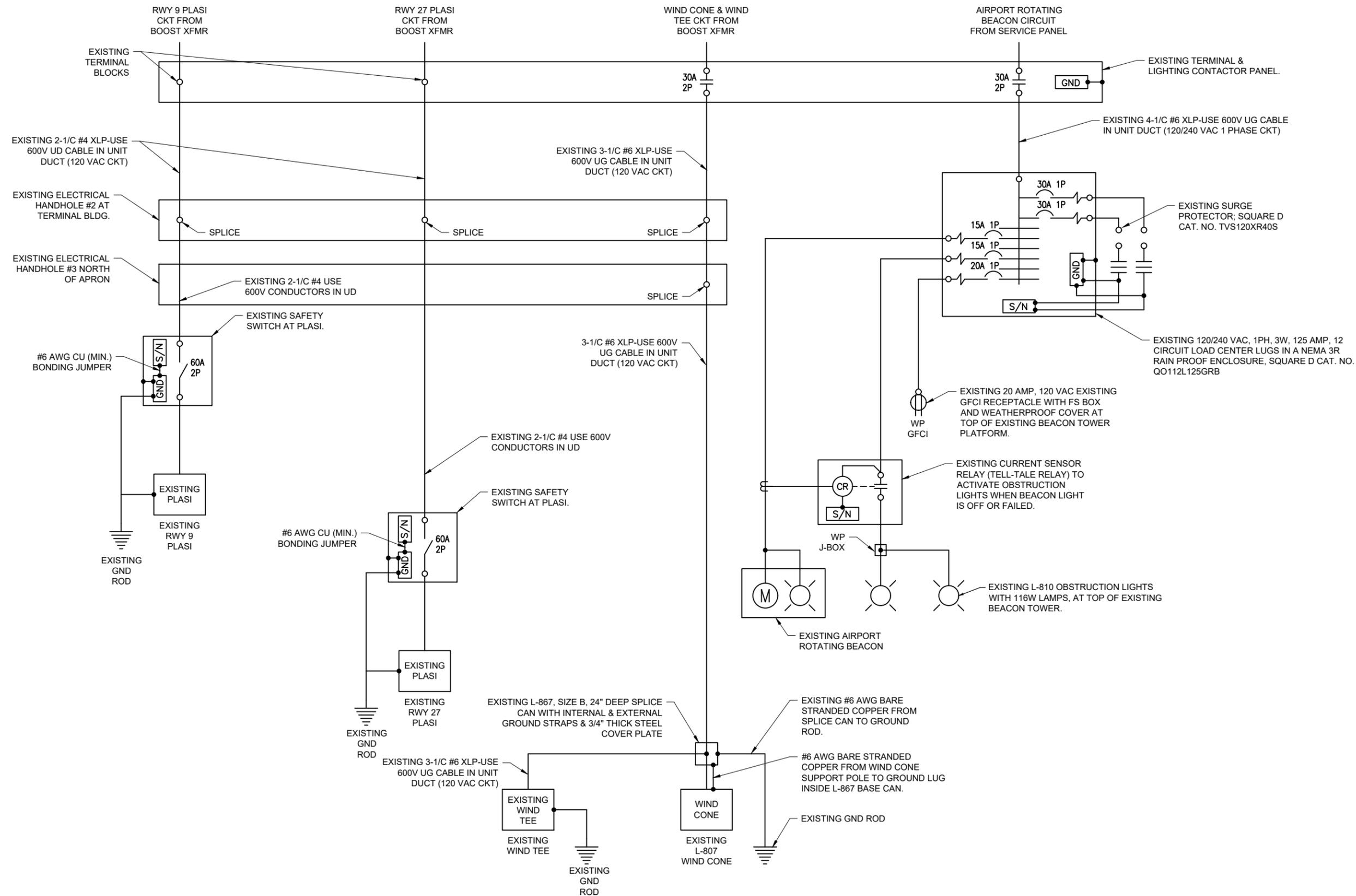
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SHEET TITLE

EXISTING ONE-LINE
DIAGRAM FOR VAULT
AND AIRFIELD

FOR BID



EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (CONTINUED)

REPLACE RUNWAY AIRFIELD LIGHTING
IDA No: EZI-4940
SBGP No:
3-17-SBGP-184

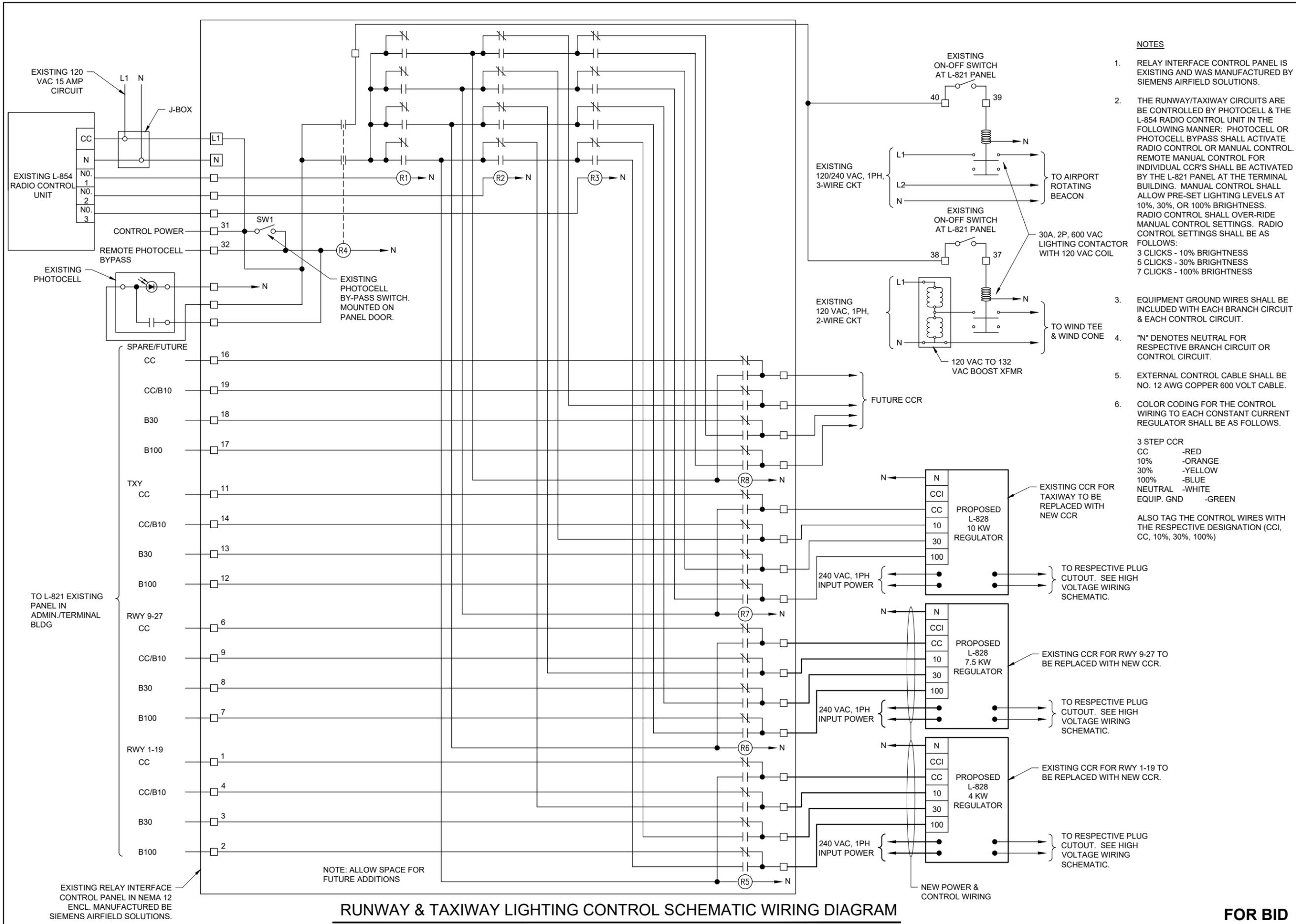
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SHEET TITLE

EXISTING ONE-LINE
DIAGRAM FOR VAULT
AND AIRFIELD
(CONTINUED)

FOR BID



NOTES

- RELAY INTERFACE CONTROL PANEL IS EXISTING AND WAS MANUFACTURED BY SIEMENS AIRFIELD SOLUTIONS.
- THE RUNWAY/TAXIWAY CIRCUITS ARE BE CONTROLLED BY PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER: PHOTOCELL OR PHOTOCELL BYPASS SHALL ACTIVATE RADIO CONTROL OR MANUAL CONTROL. REMOTE MANUAL CONTROL FOR INDIVIDUAL CCR'S SHALL BE ACTIVATED BY THE L-821 PANEL AT THE TERMINAL BUILDING. MANUAL CONTROL SHALL ALLOW PRE-SET LIGHTING LEVELS AT 10%, 30%, OR 100% BRIGHTNESS. RADIO CONTROL SHALL OVER-RIDE MANUAL CONTROL SETTINGS. RADIO CONTROL SETTINGS SHALL BE AS FOLLOWS:
3 CLICKS - 10% BRIGHTNESS
5 CLICKS - 30% BRIGHTNESS
7 CLICKS - 100% BRIGHTNESS
- EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
- "N" DENOTES NEUTRAL FOR RESPECTIVE BRANCH CIRCUIT OR CONTROL CIRCUIT.
- EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER 600 VOLT CABLE.
- COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE AS FOLLOWS.

- 3 STEP CCR**
- CC -RED
 - 10% -ORANGE
 - 30% -YELLOW
 - 100% -BLUE
 - NEUTRAL -WHITE
 - EQUIP. GND -GREEN

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

REPLACE RUNWAY AIRFIELD LIGHTING

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Contract No.: KE019

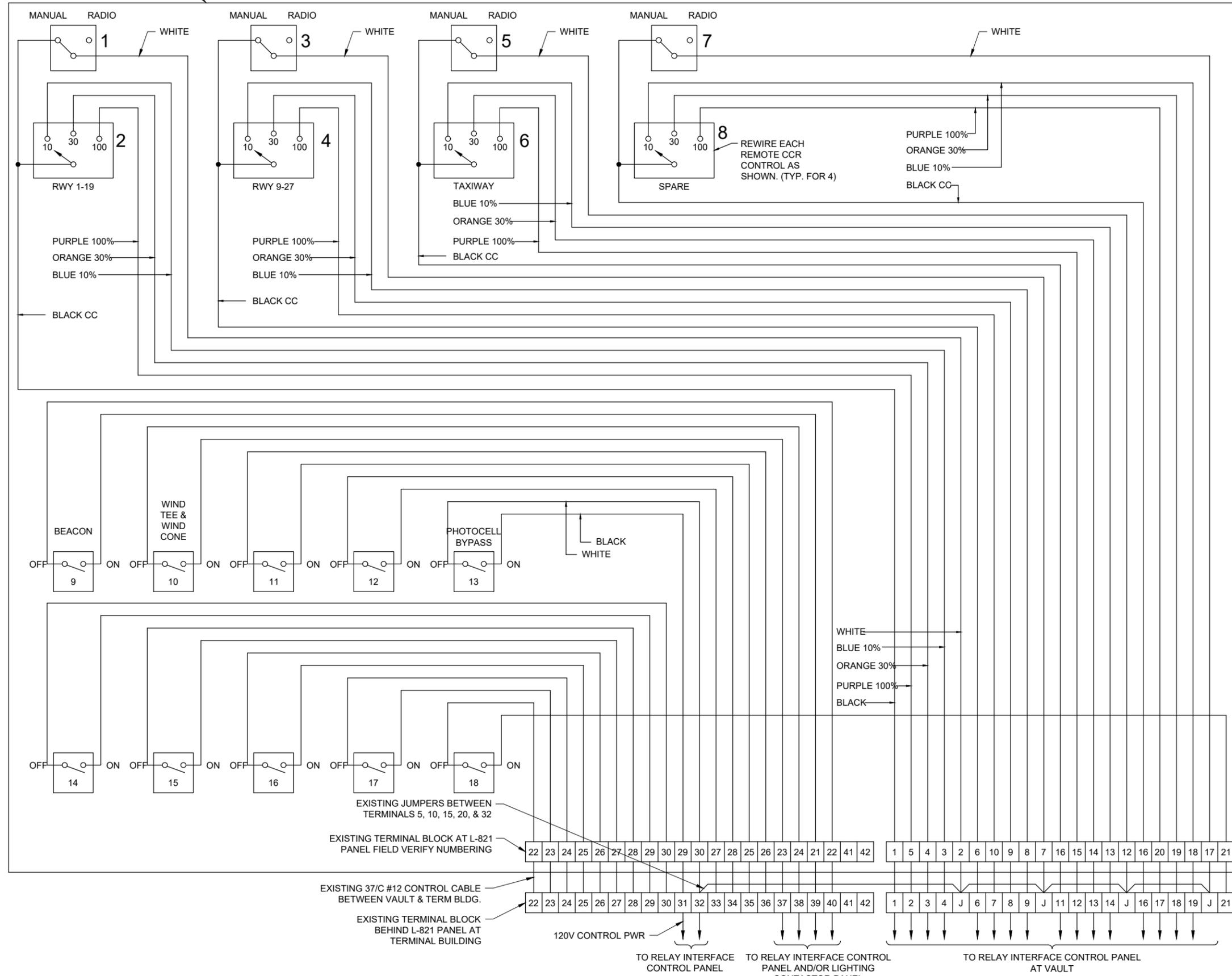
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SHEET TITLE

AIRFIELD LIGHTING CONTROL SCHEMATIC

FOR BID

EXISTING L-821 PANEL AT TERMINAL BUILDING MANUFACTURED BY UNIVERSE.



RUNWAY & TAXIWAY LIGHTING CONTROL SCHEMATIC WIRING DIAGRAM

NOTES
THE L-821 PANEL LOCATED AT THE TERMINAL BUILDING IS EXISTING AND WAS MANUFACTURED BY UNIVERSE INC., NORMAL, IL.

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

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3-17-SBGP-184

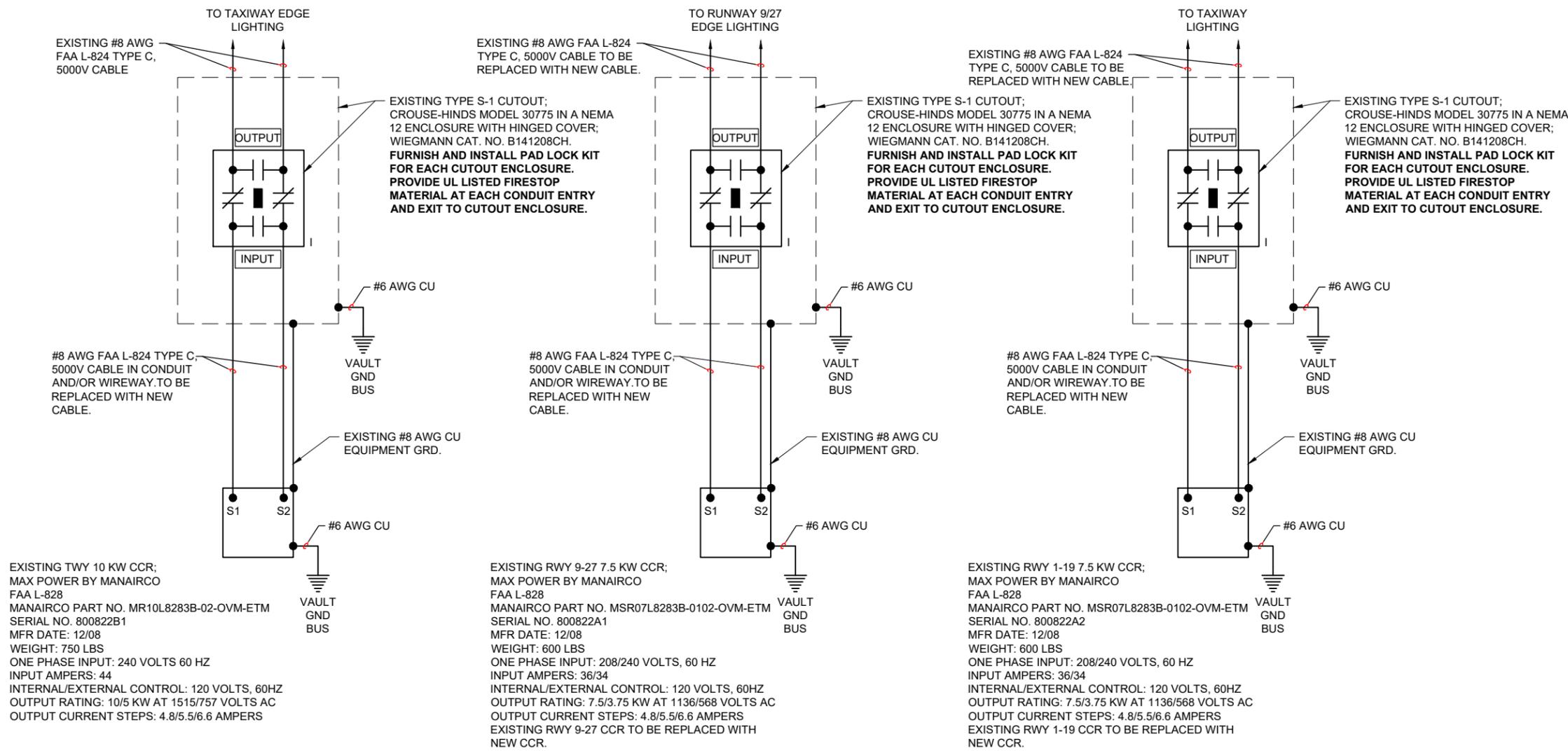
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AIRFIELD LIGHTING CONTROL SCHEMATIC (CONTINUED)

FOR BID

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EXISTING HIGH VOLTAGE WIRING SCHEMATIC

NOTES:

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

LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

DENOTES CONSTANT CURRENT REGULATOR

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

SBGP No: 3-17-SBGP-184

Contract No.: KE019

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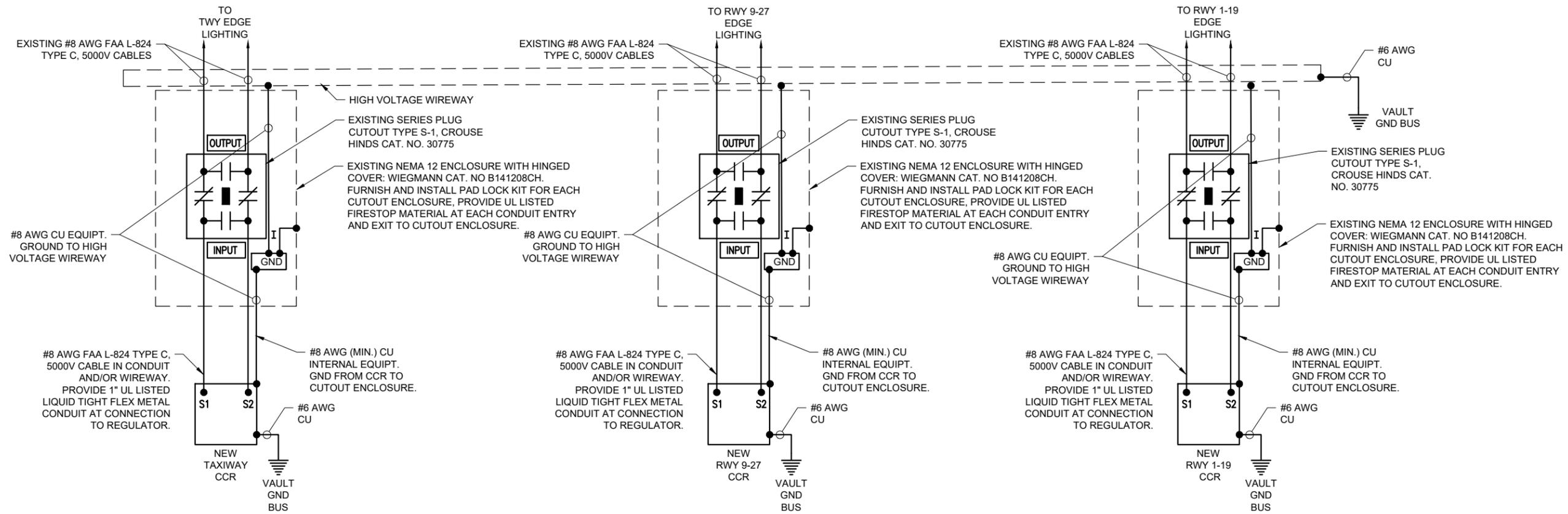
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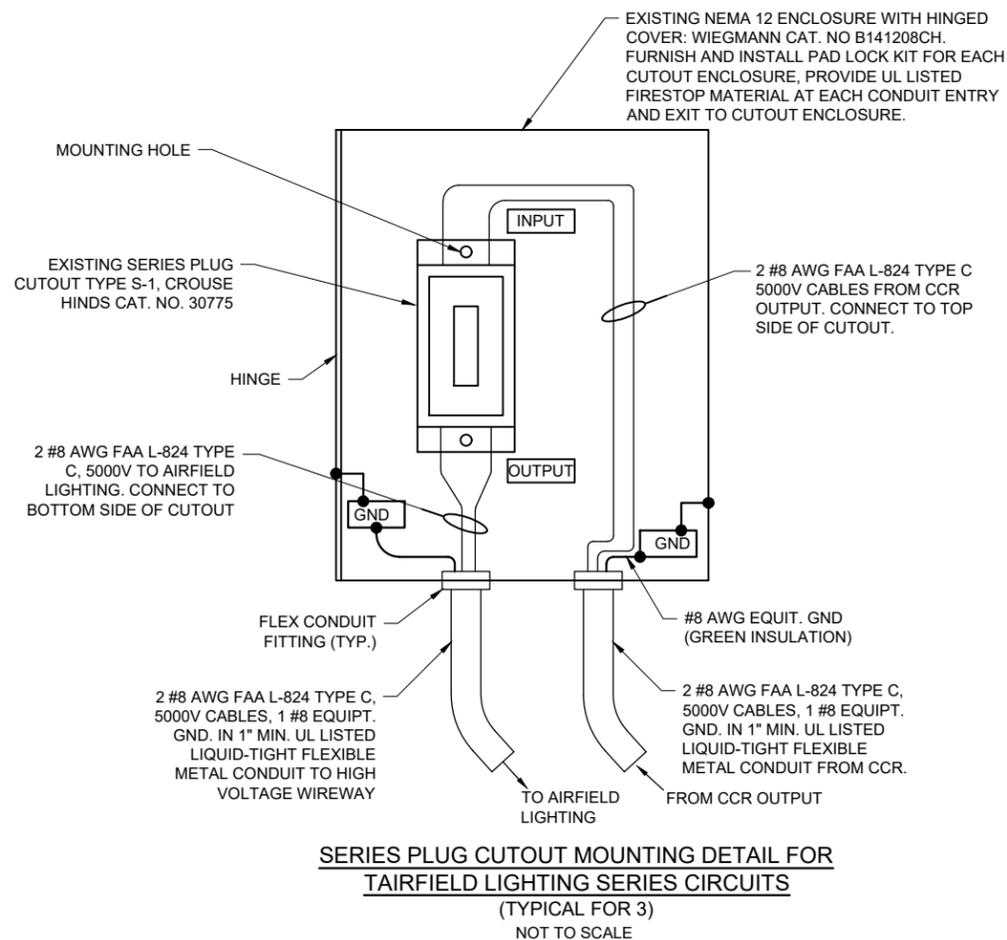
SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATIC

FOR BID



PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS AND TAXIWAYS



SERIES PLUG CUTOUT MOUNTING DETAIL FOR AIRFIELD LIGHTING SERIES CIRCUITS
(TYPICAL FOR 3)
NOT TO SCALE

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

NOTES

- EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT.
- PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE RESPECTIVE CUTOUT INPUT CONNECTION AND THE RESPECTIVE CUTOUT OUTPUT CONNECTION.
- PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS..
- 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.
- SERIES PLUG CUTOUTS ARE EXISTING. 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).
- 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.
- PROVIDE UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE (EXISTING AND NEW).
- BOND EACH REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.

REPLACE RUNWAY AIRFIELD LIGHTING

IDA No: EZI-4940

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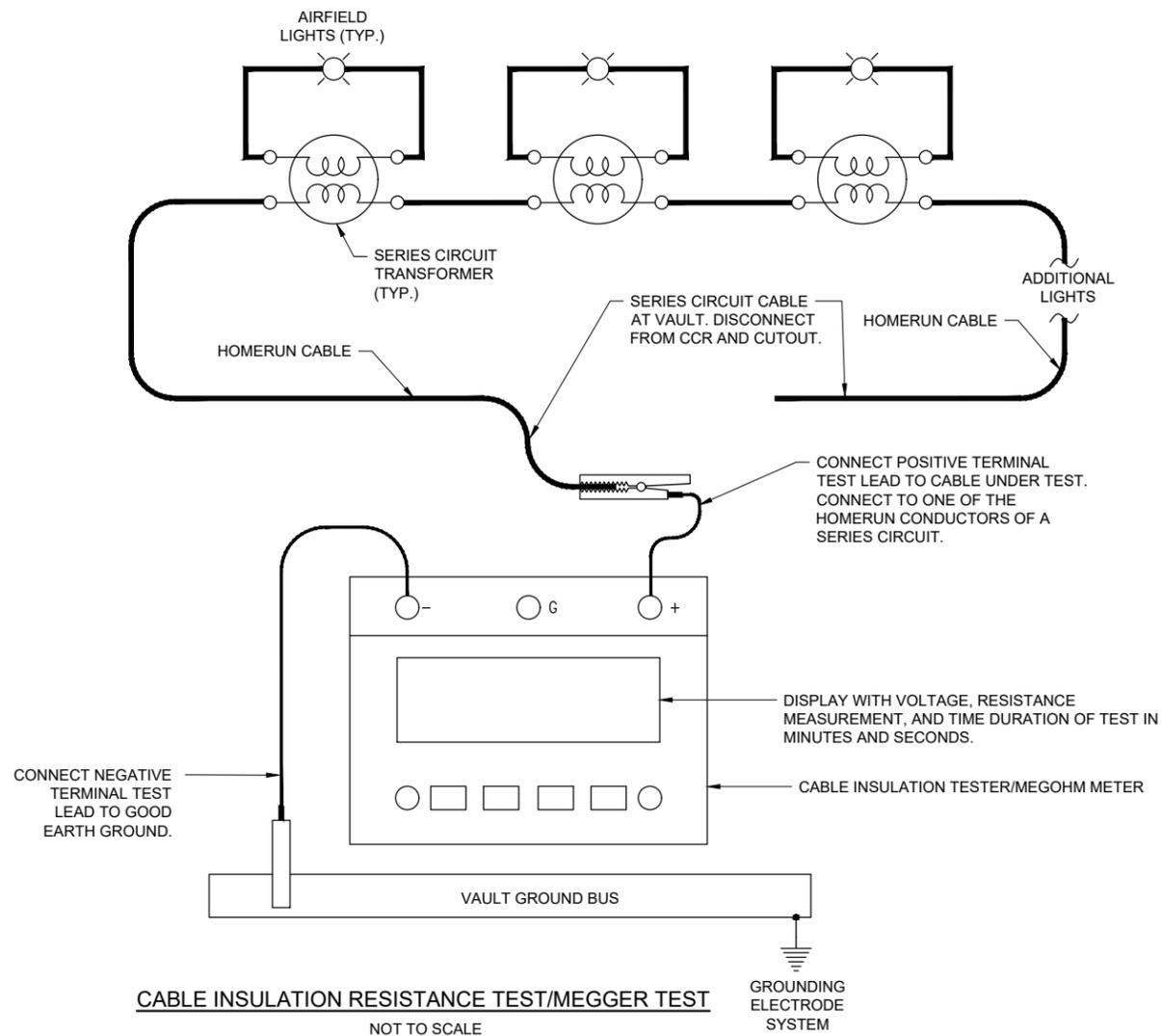
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SHEET TITLE

PROPOSED HIGH VOLTAGE WIRING SCHEMATIC

FOR BID

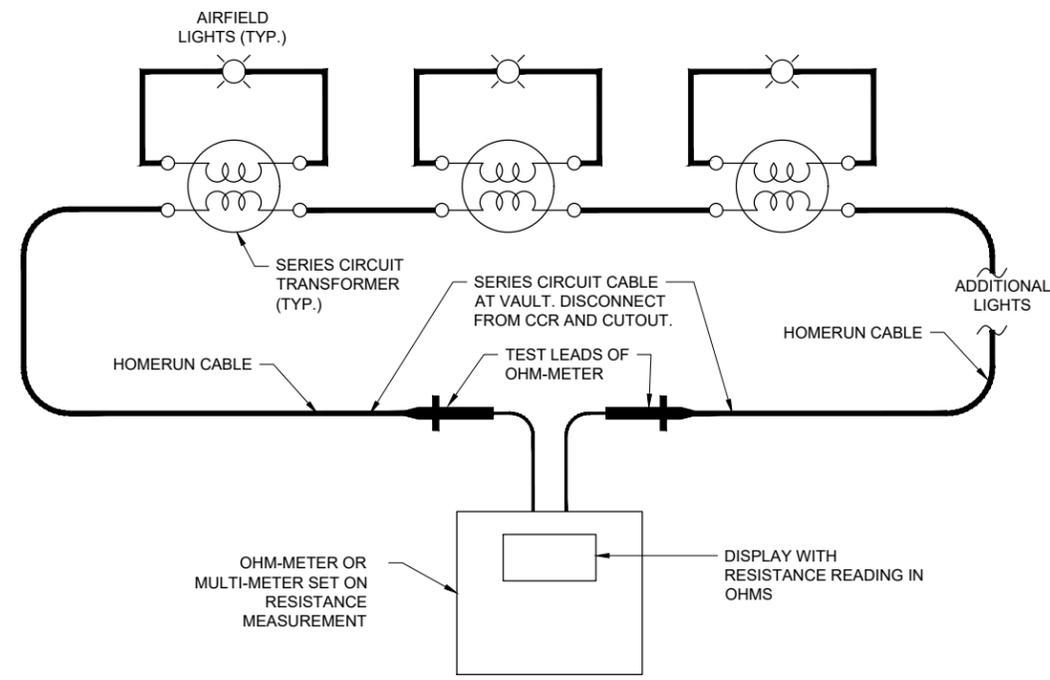


CABLE INSULATION RESISTANCE TEST/MEGGER TEST

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.

REPLACE RUNWAY AIRFIELD LIGHTING

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SHEET TITLE

SERIES CIRCUIT CABLE TESTING DETAILS

FOR BID

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
VAULT SERVICE METER BASE	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED TO BE 8,334 AMPS LINE TO LINE 12,501 AMPS LINE TO NEUTRAL ON 8/27/2022
VAULT SERVICE AND DIST PANEL "A"	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED TO BE 8,334 AMPS LINE TO LINE 12,501 AMPS LINE TO NEUTRAL ON 8/27/2022
VAULT SERVICE & DISTRIBUTION PANEL	VAULT SERVICE AND DIST. PANEL "A" 120/240 VAC, 1 PH, 3W FED FROM UTILITY SERVICE
VAULT SERVICE & DISTRIBUTION PANEL "A"	CONDUCTOR COLOR CODING SHALL BE AS FOLLOWS: PHASE A - BLACK PHASE B - RED NEUTRAL - WHITE GROUND - GREEN
VAULT DISTRIBUTION PANEL "B"	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED TO BE 8,334 AMPS LINE TO LINE 12,501 AMPS LINE TO NEUTRAL ON 8/27/2022
TAXIWAY LIGHTING CCR	TAXIWAY LIGHTING CCR
CUTOUT ENCLOSURE FOR TAXIWAY LIGHTING	TAXIWAY LIGHTING CUTOUT
CUTOUT INPUT SIDE CONNECTION FOR TAXIWAY LIGHTING	INPUT
CUTOUT (TAXIWAY LIGHTING) OUTPUT SIDE CONNECTION	OUTPUT
RUNWAY 9-27 LIGHTING CCR	RUNWAY 9-27 LIGHTING CCR
CUTOUT ENCLOSURE FOR RUNWAY 9-27 LIGHTING	RUNWAY 9-27 LIGHTING CUTOUT
CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 9-27 LIGHTING	INPUT
CUTOUT (RUNWAY 9-27 LIGHTING) OUTPUT SIDE CONNECTION	OUTPUT
RUNWAY 1-19 LIGHTING CCR	RUNWAY 1-19 LIGHTING CCR
CUTOUT ENCLOSURE FOR RUNWAY 1-19 LIGHTING	RUNWAY 1-19 LIGHTING CUTOUT
CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 1-19 LIGHTING	INPUT
CUTOUT (RUNWAY 1-19 LIGHTING) OUTPUT SIDE CONNECTION	OUTPUT

ARC FLASH RISK LABELS	
EQUIPMENT	LABEL
UTILITY METER BASE	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED NOMINAL VOLTAGE: 120/240 VAC, 1 PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC-FLASH PPE CATEGORY; 1
VAULT SERVICE & DISTRIBUTION PANEL "A"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED NOMINAL VOLTAGE: 120/240 VAC, 1 PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC-FLASH PPE CATEGORY; 1
VAULT DISTRIBUTION PANEL "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED NOMINAL VOLTAGE: 120/240 VAC, 1 PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC-FLASH PPE CATEGORY; 1
CONTROL PANEL FOR AIRFIELD NAVAIDS AND EXHAUST FAN	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED NOMINAL VOLTAGE: 120/240 VAC, 1 PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC-FLASH PPE CATEGORY; 1
RADIO RELAY INTERFACE PANEL	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED NOMINAL VOLTAGE: 120/240 VAC, 1 PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC-FLASH PPE CATEGORY; 1

NOTE: LABELS ARE BASED ON FAULT CURRENT FROM UTILITY TRANSFORMER THAT IS LESS THAN 25,000 AMPS AT 240 VAC.

NOTES:

- LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "ARC-FLASH HAZARD WARNING".
- FAULT CURRENT INFORMATION TO BE PROVIDED BY SERVING ELECTRIC UTILITY COMPANY OR FROM DATA OBTAINED FROM UTILITY TRANSFORMER NAMEPLATE. CONTACT PROJECT ENGINEER TO CONFIRM FAULT CURRENT CALCULATIONS.
- CONTRACTOR SHALL PROVIDE APPROPRIATE LABELS ON ELECTRICAL EQUIPMENT, IN ACCORDANCE WITH NFPA 70E ARTICLE 130 WORK INVOLVING ELECTRICAL HAZARDS, PART 130.5 ARC FLASH RISK ASSESSMENT, (H) EQUIPMENT LABELING. WHERE MAXIMUM CALCULATED FAULT CURRENT EXCEEDS 25,000 AMPS CONTACT PROJECT ENGINEER.

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SHEET TITLE



"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

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



"DANGER - HIGH VOLTAGE" SIGN

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

FOR BID